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Contents

FOREWORD

It was with great pleasure that we host at the Bucharest University of Economic Studies, Romania, another edition of our traditional Accounting and Management Information Systems International Conference, on June 5-6 2019.

Owing to the great collaboration that we continue to have with our international partners, this year's edition was again co-organized together with the International Association for Accounting Education and Research (IAAER). IAAER's participation at AMIS IAAER 2019 meant not only the attendance of numerous IAAER officers, but also an increased participation to the organization of the conference's plenary and regular panels and sessions. As such, the international presence has continued to strengthen and significantly contribute to a great conference experience for delegates.

During the conferences, two plenary panels, four regular panels and 17 parallel sessions were organized, for a total of 56 papers that were scheduled. 130 participants from 16 countries registered and contributed to the debates in either panels or sessions.

Preceding the AMIS IAAER 2019 conference, IAAER and the Association of Chartered Certified Accountants (ACCA) have co-organized, on June 3-4 2019, another edition of their traditional Early Career Researchers Workshop. 21 early career academics from Central and Eastern Europe have attended one day and a half of presentations and trainings by 10 recognized international faculty from all over the world. 10 of these early career academics have also presented their projects to these very accomplished faculty members, and received timely and constructive feedback on how to improve their work with a view to make it publishable by international journals.

All these activities would not have been possible without the very generous support of our sponsors: ACCA and KPMG (Platinum Sponsors), CIMA (Gold Sponsor), CECCAR, ANEVAR, Domeniile Sâmburești, Deloitte, V&TM, Boromir, TUV Austria and Alintrans (Silver Sponsors), and AECCIG (our partner). Their continued support honours us and helps us strive to offer an excellent conference experience to our delegates.

In the end, I will also thank our team: Nadia Albu, Adrian Anica Popa, Dana Boldeanu, Daniela Calu, Liliana Feleagă, Raluca Guşe, Dragoş Mangiuc, Elena Nechita and Andrei Stanciu. They continue to volunteer their time to this important event in Central and Eastern Europe.

We are very much looking forward to hosting everybody again at our university!

Professor Cătălin Albu,
Conference Chair

PS1 CORPORATE DISCLOSURE

Chairperson: Giovanna Michelon, University of Bristol, UK

Corporate governance disclosure in banking sector: A content analysis

Oana Marina Bătae

Liliana Feleagă

Analysis of annual reports according to ESG dimension

Alexandra-Oana Marinescu

Corporate governance disclosure in banking sector: A content analysis

Oana-Marina Bătae[a,1] and Liliana Feleagă[a]

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Abstract

Idea: *The aim of this study is to analyse the level of disclosure of corporate governance in banking sector accordingly to guidelines issued by European Banking Authority, for a parent and its subsidiary.*

Data: *The sample consists of two banks, the focus being on the subsidiary, while the parent is analysed for comparison purposes. The data were hand collected from published reports on the official website of the banks for year ended 2017.*

Tools: *A content analysis is used in order to measure the degree of corporate governance disclosures. Manual coding process was applied in order to be able to sort data and classify it in input, intermediary and output data needed for the accomplishment of the objectives.*

What's new? *The results of the study show high values of corporate governance disclosure index, reflecting the compliance with regulatory requirements and also the alignment between a parent and its subsidiary.*

So what? *The impact of the study is represented by highlighting the alignment of group entities.*

Contribution: *The study contributes to the literature by examining the level of disclosure of corporate governance, emphasizing the requirements from EBA which are mandatory to comply with, but voluntary to disclose.*

Keywords: *Corporate governance, banking sector, Romania, parent and subsidiary alignment*

1. Introduction

Over time, corporate governance has been considered a long-standing issue, the number of publicized corporate problems which occurred in the late 1980s, at least in UK, leading to the setting up of the Cadbury Committee and highlighting the following: business failures, different practices of creative accounting, limited role of the auditors and also a weak link between remuneration of the executive directors and performance of the company (Short, 1999). The first major public document which took corporate governance as its object is represented by the United Kingdom's Cadbury Report of 1992, better governance becoming quickly a powerful promise (Erturk *et al.* 2004). Cadbury (1992) defines corporate governance as being "the system by which companies are directed and controlled".

One of the main drivers of corporate governance is represented by the agency concept based on the agency theory. This assumes the fact that a conflict might arise when the objectives of the shareholders, named principal, are not the same as the ones of the

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executives who run the business using their managerial professional skills, named as agent (Jensen and Meckling, 1976).

However, by the early 2000s, in the UK and US, corporate governance started to be associated more often with disappointment in case of failure of different mechanisms in 2002 related to prevention or detection of irresponsible behaviour in organizations such as World Com or Enron, or protest held in 2003 by British media regarding the limitation of "rewards for failure" (Erturk *et al.* 2004).

Heath and Norman (2004) sustain that the breakdown of governance in relation to scandals from Enron era represents a failure of the companies and also of their shareholders to be able to protect themselves against many agency problems.

The main objective of an organization is to stick with the strategy that has been set up and in order to be able to accomplish this, there are different standards, laws, regulations, rules, policies and principles a company needs to adhere to.

In Romania, from a regulatory and conceptually point of view, corporate governance became part of this country at the beginning of 2000, the delay being represented by the result of a lot of inconclusive efforts that targeted juridical, social, political and economic reforms (Feleagă *et al.* 2011).

In Austria, even though there is no legal definition of the corporate governance concept, different studies emphasize a strengthening of corporate governance, triggered by a more flexible structure which integrates new stakes and actors and contributes to "the network character of contemporary corporatism" (Molina and Rhodes, 2002). Also, universal banking in Austria had outlasted many changes over the time and since the 1989, when the collapse of communism occurred, Austrian banks have shown interest in investing in CEE where, in a historical context, their traditional market has been (European Association for Banking History E.V., 1994).

This interest was manifested also by Erste Group Bank ("EGB") when started to control Banca Comercială Română SA ("BCR").

The aim of this paper is to measure the level of disclosure of different points which are related to the guidelines on internal governance, more exactly EBA requirements, in case of two representative banks, subsidiary and parent, BCR and EGB. These requirements are mandatory to comply with, there existing a confirmation of compliance issued by and transmitted after completion to EBA, however it is not mandatory to disclose every sensitive information.

As secondary objectives, the following were also assessed: different EBA requirements regarding internal governance which are disclosed in case of the parent and are not disclosed by the subsidiary; different EBA requirements regarding internal governance which are disclosed by the subsidiary and are not disclosed by the parent; a statistical analysis regarding the reports in which the applicability of the requirements can be found and also analysis of points which are disclosed in different reports in case of EGB or BCR.

The rest of the paper is structured as follows: section two illustrates the literature review, including the local context, followed by third section which presents research methodology with details regarding the study approach, data used, data selected as a sample, the manner through which data was collected and formulas which will be used in the fourth section which highlights the results obtained. Last but not least, we present conclusions and forward looking information already available for future research.

2. Literature review

As Ernst and Young ("EY") mentions on its UK official website (2019), corporate governance is central to the health and strength of the global economy.

Four definitions of corporate governance are presented by Huse (2007), these being the "managerial", "stakeholder", "shareholder and supremacy" and "firm" definitions. From the managerial perspective, corporate governance will design or employ different systems and techniques that are able to secure the values and interests of management. In shareholder and supremacy definition, the board is accountable to all shareholders, including monitoring of managerial opportunism which can be avoided through co-opting board members and managers by the shareholders through incentive systems based on share options or share-holding. This definition is linked to the agency theory. From the stakeholder perspective, corporate governance is defined as all the relationships between all actors that can be decision makers and key influencers exercising control over firm resources. Actors can be represented on the one hand by primary actors who are usually shareholders, the board and management and on the other hand by other participants such as clients, suppliers, employees and community overall. The fourth definition reflects the fact that corporate governance is not only about spreading the value to actors but also it is about creating value throughout the value chain, with the purpose of facilitating cooperation and engaging in the collective processes of discovery and search.

Appropriate measures of risk management, accountability of board of directors and also senior management, accurate information flows, issues of transparency and regulatory environment represent key matters in corporate governance (Arjoon, 2005).

As he mentions, from an ethical perspective, the key issues identified at the level of corporate governance are the ones which involve different questions concerning relationships and also building trust in society, within or outside the company.

Swammy and McMaster (2018) mention that a combination of laws and regulations, strategy and business structure are the key drivers of the core structure of the board. Also, it is mentioned that compliance guidelines, in particular for banks, were issued by the Basel Committee on Banking Supervision, providing that a credit institution should hold itself to very high standards on its business activities and should always strive to notice the spirit as well as the letter of the law.

The cornerstone of a good governance for banks is represented by good regulation which is oriented on curbing excessive risk taking (Mullineux, 2006).
European banks, following the financial crisis of 2007-2008, faced a variety of challenges which still continue until now. These challenges include a slow recovery from economic recession, European sovereign crisis and reputational and financial

consequences of different forms through which misconduct manifested (Bernasconi and Lalmant, 2015).

They consider that following the European Banking Authority's guidelines and the adoption of the Capital Requirements Directive ("CRD IV"), European Union ("EU") wide regulation increased in terms of leaps and bounds, focusing on the supervisory on governance. Therefore, it is sustained that the convergence of governance practices from banking sector was driven by the fact that credit institutions in Europe faced unprecedented regulatory changes.

Even though it is stating the obvious, it is important to remind that financial companies take risk: credit risk, market risk, liquidity risk and many others. Therefore, regardless of whether the organization takes risks, intermediates the risk or hedges it out, it is very important to understand the business in which activities are carried out. In this respect, an oversight of an appropriate implemented risk governance framework should be in place and exercised by the board of directors. This framework includes well developed risk appetite framework, strong risk culture, effective risk management (Swammy and McMaster, 2018).

Noll (2006) considers that for Central and Eastern Europe ("CEE") countries, directives would be more useful to overcome their governance weaknesses.

It is well known that a corporate governance code, generally, is not mandatory to adhere to. However, this situation changes when such a code becomes a listing requirement at stock market or in case it becomes a formal rule issued by the legislators.

All the negative externalities that might become related to a bank failure justify bank regulation, as noted by John *et al.* (2016). A bank failure at the individual level not only affects the credit institution itself, but also all the other actors in the financial industry and global economy. John *et al.* (2016) mentions that the aim of bank regulation is to protect depositors and to promote financial stability.

Transparency and the level of disclosure are two topics very important in the well-functioning of a credit institution. In case of banks, in Europe, guidelines on internal corporate governance are offered by European Banking Authority, the main highlights being regulated, therefore, it is mandatory to comply with the requirements of the European authority but not in all the cases it is mandatory to also disclose them.

The starting point of the case study is represented by selecting Romania – an emerging country.

Despite recent progress, it was suggested that disclosures and also transparency in regards to the corporate governance still need improvement in Romania (Albu *et al.*, 2014).

As Noll (2006) noted, Romania struggled to create efficient market institutions, the institutional development being partly delayed by many dramatic political changes.

The entrance of Romania under Soviet influence after the Second World War triggered the switch to a centralized and planned economy. In December 1989, after the fall of communism, Romania faced many dramatic accounting and economic reforms in order to be able to incorporate western business principles. The period after the fall of communism was characterized by many reforms and privatizations (Albu *et al.*, 2014).

In regards to privatizations, BCR was part of this process in December 2005, when the Government of Romania officially announced that Erste Bank acquired the bank with a price per share in amount of EUR 7.65 at that moment in time. At the end of 2005, BCR had total assets in amount of RON 33 billion, meaning more than 25% in the market, Erste being willing to pay an acquisition price of EUR 3.75 billion in order to obtain a control percentage of 61.88 in the biggest Romanian bank at that time. Erste manifested confidence in the potential of the local market and started a sound restructuring process led by the Czech banker Tomas Spurny. Also, in 2011, Erste bought 24% of the shares owned by five financial investment companies from Romania, reaching to a control percentage of 93.6. Thirteen years later after privatization, Erste controls BCR with a percentage of 99.88, after buying 6.29% of the shares owned by SIF Oltenia for EUR 140 million.

In 1995, the Bucharest Stock Exchange ("BSE") was established, being a medium size stock exchange in Eastern Europe. Also, Romania had a political goal represented by the adherence to EU, process that started in 1993 and finished in January 2007 (Albu *et al*, 2014). It is also worth mentioning that the first Romanian corporate governance code was issued in 2001, following OECD recommendations, and then it was replaced by a new code in 2008 which produced effects starting with 2010 (Albu and Gîrbină, 2015).

3. Research methodology

3.1. Background: Parent and subsidiary disclosures of corporate governance in accordance with internal governance requirements from European Banking Authority

Since 2000, European authorities have shown interest to the improvement of corporate governance standards, the main goal being represented by the existence of safer and more reliable bank functions (PwC, 2018). A significant role in the international financial governance was played by the European Union ("EU") with the support of an administrative channel represented by the European Supervisory Authorities ("ESA") (Moloney, 2017).

The European Banking Authority ("EBA") was established on 1st January 2011, taking over all existing tasks and responsibilities of the Committee of European Banking Supervisors, having as main objectives the following: to safeguard the efficiency, integrity and orderly functioning of the entire banking sector and also to maintain financial stability in the EU. Also, EBA's main tasks are: to contribute to the implementation of the European Single Rulebook in banking which will be able to provide one single set of harmonized prudential rules for all the credit institutions throughout the EU and to promote convergence of different supervisory practices, being able to evaluate risks and vulnerabilities in the EU banking sector (EBA, 2019).

In order to achieve the objectives mentioned above, in September 2011, EBA released its internal governance requirements, the Guidelines 44 (EBA GL 44) which will be applicable until they will be revised in September 2017 producing effect on 30 June 2018.

One of the keys to banking sector's success and also the economy as a whole is represented by an effective corporate governance, Emmanuelle Caruel-Henniaux – Partner at PwC Luxembourg affirming that: "The EBA guidelines are to ensure that, by harmonizing institutions' governance arrangements, imprudent risk-taking decisions and choices in the banking sector are reduced significantly" (PwC, 2018).

As it became known, Erste Group Bank ("EGB") reached an extensive presence in Central and Eastern Europe ("CEE") consolidating the following subsidiaries: Ceska Sporitelna Group from Czech Republic, Slovenska Sporitel'na Group from Slovakia, Banca Comercială Română Group ("BCR Group") from Romania, Erste Bank Hungary Group from Hungary, Erste Bank Croatia Group from Croatia and Erste Bank Serbia Group from Serbia (EGB, 2017).

On the one hand, in the euro zone, Austria represents one of the wealthiest countries with an open and developed economy which is diversified across different industries, with well-educated workforce and also strong service sector and tourism. The banking market in Austria is a developed one, with total assets of 224% of GDP for the year ended 2017. Therefore, EGB represents one of the credit institution which will be subject for review in next chapters, being the parent company of Banca Comercială Română SA, its governance disclosures being assessed in accordance with EBA requirements.

On the other hand, in CEE, in 2017 the Romanian economy posted the fastest growth rate with a decreased unemployment rate to 5%, recording the lowest level in the last 20 years, even though the political environment was volatile throughout the year. The profitability of the banking's market of the country improved due to lower risk provisions, the Romanian banking market benefiting from multiple macroeconomic developments (EBA, 2017). Therefore, Banca Comercială Română ("BCR") represents the subsidiary of EGB for which the governance aspects will be assessed in order to determine the disclosure of the compliance with EBA requirements.

3.2. Study approach: Defining objectives and research methodology

The main goal of the study is represented by the measurement of the level of disclosure in case of two representative credit institutions, parent - EGB and subsidiary - BCR, of specific points related to internal governance requirements issued by EBA for which compliance is ensured but disclosure of all items is not mandatory.

As adjacent objectives, the following were also assessed: different EBA requirements regarding internal governance which are disclosed in case of the parent and are not disclosed by the subsidiary; different EBA requirements regarding internal governance which are disclosed by the subsidiary and are not disclosed by the parent; a statistical analysis regarding the reports in which the applicability of the requirements can be found and also analysis of points which are disclosed in different reports in case of EGB or BCR.

In terms of research methodology, we determined a disclosure index of corporate governance in order to be able to analyse the level of disclosure adopted by credit institutions when complying with EBA requirements. The choice of using a corporate governance disclosure index ("CGDI") was done after performing a literature review and observing the importance of transparency nowadays not only at the level of the banks, but at the level of all companies with impact in economy.

The method used is represented by content analysis with a qualitative approach through a coding process on the analysed reports. The coding process was carried out manually. As Saldana (2009) mentions, manual coding is able to give ownership of the work performed and control over the study.

The first stage of content analysis is represented by reviewing the content of EBA requirements regarding internal governance. The second stage is represented by identification of the main topics relevant to the selected sample, followed by analysing different reports published on the official websites of the banks, followed by manual coding of the information in order to allocate a score to each requirement based on which the CGDI will be developed. More details will be given in subchapter 3.4.

3.3. Sample presentation

The population is represented by total credit institutions carrying out activities in Romania and their parent companies. According to NBR (2017), as at 31 December 2017, we have identified a total number of 35 credit institutions activating in Romania.

We decided to select the leader in Romania's banking market in terms of total assets, customer loans, customer deposits and asset management for year ended 2017, i.e. BCR, out of the total of 35 credit institutions carrying out activities as at 31 December 2017. Details regarding changes in the top of the banks, subsequently to the data collected, will be illustrated in last chapter of this study. Since we will analyse information disclosed in BCR's public reports, we are also interested in the alignment of such a complex bank with its parent – EGB.

Thus, the sample consists of two credit institutions – BCR and EGB. The period of the analysis is 2017 due to the fact that this year is a transition one from previous EBA requirements published on September 2011 producing effects starting with 31st March 2012 (EBA – GL 44, 2011) to the newest EBA requirements published on September 2017 starting to produce effects at 30th June 2018. Table 1 presents an overview of the total assets of BCR over a period of 5 years, being the basis of the sample rationale described above.

Table 1. **Evolution of total assets of BCR over 5 years (Amounts in thousands RON)**

2013	2014	2015	2016	2017
63,509,963	59,037,134	59,460,913	64,068,225	67,734,485

(Source: BCR, 2017: 9)

3.4. Data collection and description of the model

Data is collected from official websites of BCR and EGB, by examining different types of reports, such as corporate governance framework reports, consolidated and separate financial statements, administrators report, annual report (in case of listed entity – such as EGB being listed on Vienna, Prague and Bucharest Stock Exchanges), disclosure report pursuant to part eight of the Capital Requirements Regulation ("CRR") and also EBA guidelines on internal governance report.

The starting point is represented by EBA guidelines on internal governance, more specifically requirements regarding institutions' internal governance. In accordance with the guidelines, we organized all the requirements in six groups noted from A to F, out of which group B includes four subgroups. Each group (and where applicable subgroup) contains a requirement presented by EBA, each requirement being numbered obtaining the following: Group A contains four requirements; group B contains subgroup B1 with three requirements, subgroup B2 with four requirements, subgroup B3 with three requirements and subgroup B4 with two requirements; group C contains four requirements; group D includes six requirements, group E and F are comprised of two requirements each. Therefore, the total number of requirements for which data will be collected from the reports is 30.

Stage two of data collection process is represented by splitting each requirement per more than one sub-item which we considered relevant while analysing EBA guidelines on internal governance. Thus, the input data can be considered the split of the requirements we performed.

Stage three can be represented by the collection of what we call intermediary data, meaning different details obtained through coding process which can sustain the disclosure of the sub-items mentioned above and permit the allocation of a score.

The output data is represented by obtaining the CGDI applicable at the level of each requirement, subgroup, group and finally, at the level of the entire credit institution.

Generally, a score of 1 is given if the item is disclosed and a score of 0 otherwise.

For each requirement, we determined the existent number of sub-items (taken from what we considered our input data) and we analysed the content of the reports determining the number of sub-items which were disclosed per each requirement. The latter one is computed by adding the scores allocated for each sub-item (for example if out of a total of three sub-items as per requirement, only two were disclosed, we considered that each disclosed sub-item receives a score of 1, meaning both disclosed sub-items receive a value of two, while the other one not disclosed receives a score of 0 and is not taken into consideration into computation of CGDI). A disclosure index can be obtained based on the formula mentioned by Tsalavoutas *et al.* (2010):

$$C_j = \frac{\sum_{i=1}^{n} di}{\sum_{i=1}^{n} di} = \frac{T}{M} \quad (1)$$

Where C_j represents the total compliance score for each company and its value is included in the interval [0;1]. T represents the total number of items disclosed (di) by the company j and M represents the maximum number of applicable disclosure items for company j that could have been disclosed.

We adapted the formula in order to compute CGDI:

$$\text{CGDI} = \frac{\sum_{i=1}^{n} di}{\sum_{i=1}^{n} di} = \frac{T}{M} = \frac{maximum\ number\ of\ sub\text{-}items\ that\ can\ be\ disclosed}{number\ of\ sub\text{-}items\ that\ are\ actually\ disclosed} \quad (2)$$

In this case, CGDI represents the corporate governance disclosure index for each analysed bank and its value is included in the interval [0;1].

4. Results and discussion

In Table 2 below, CGDI is computed for BCR and EGB for year ended 2017, considered to be output data. As described in subchapter 3.4., we define the input data as the sub-items per each EBA requirement on internal governance based on a summary of details presented in the guideline. The results of collecting the input data from EBA guidelines for BCR and EGB are shown below in the column “Number of sub-items per each requirement”, while the results of coding process through content analysis method can be observed in the column “Disclosed sub-items per each requirement”.

Table 2. **Computation of CGDI for 2017**

Group	Sub-group	Item no.	Requirement	No. of sub-items per req.		Disclosed sub-items per req.		Index per req.	
				BCR	**EGB**	**BCR**	**EGB**	**BCR**	**EGB**
A	**n/a**	**n/a**	**Corporate structure and organisation**	**13**	**13**	**5**	**7**	**0.38**	**0.54**
A	n/a	1	Organisational framework	3	3	2	3	0.67	1
A	n/a	2	Checks and balances in a group structure	5	5	2	2	0.4	0.4
A	n/a	3	Know-your-structure	2	2	0	1	0	0.5
A	n/a	4	Non-standard or non-transparent activities	3	3	1	1	0.33	0.33
B	**n/a**	**n/a**	**Management Body**	**39**	**39**	**28**	**32**	**0.72**	**0.82**
B	**B.1**	***n/a***	***Duties and responsibilities of the MB***	**13**	**13**	**11**	**13**	**0.85**	**1**
B	B.1	1	Responsibilities of the MB	9	9	9	9	1	1
B	B.1	2	Assessment of the internal governance framework	1	1	1	1	1	1
B	B.1	3	Management and supervisory functions of the MB	3	3	1	3	0.33	1
B	**B.2**	***n/a***	***Composition and functioning of the MB***	**18**	**18**	**14**	**15**	**0.78**	**0.83**
B	B.2	1	Composition, appointment and succession of the MB	5	5	5	5	1	1
B	B.2	2	Commitment, independence and managing conflicts of interest in the MB	5	5	3	4	0.6	0.8

Group	Sub-group	Item no.	Requirement	No. of sub-items per req.		Disclosed sub-items per req.		Index per req.	
				BCR	**EGB**	**BCR**	**EGB**	**BCR**	**EGB**
B	B.2	3	Qualifications of the MB	2	2	1	2	0.5	1
B	B.2	4	Organisational functioning of the MB	6	6	5	4	0.83	0.67
B	**B.3**	***n/a***	***Framework for business conduct***	**5**	**5**	**2**	**3**	**0.4**	**0.6**
B	B.3	1	Corporate values and code of conduct	2	2	1	2	0.5	1
B	B.3	2	Conflicts of interest at institution level	2	2	1	1	0.5	0.5
B	B.3	3	Internal alert procedures	1	1	0	0	0	0
B	**B.4.**	***n/a***	***Outsourcing and remuneration policies***	**3**	**3**	**1**	**1**	**0.33**	**0.33**
B	B.4.	1	Outsourcing	2	2	0	0	0	0
B	B.4.	2	Governance of remuneration policy	1	1	1	1	1	1
C	**n/a**	**n/a**	**Risk Management**	**8**	**8**	**7**	**7**	**0.88**	**0.88**
C	n/a	1	Risk culture	2	2	2	1	1	0.5
C	n/a	2	Alignment of remuneration with risk profile	1	1	1	1	1	1
C	n/a	3	Risk management framework	4	4	3	4	0.75	1
C	n/a	4	New products	1	1	1	1	1	1
D	**n/a**	**n/a**	**Internal control**	**21**	**21**	**18**	**17**	**0.86**	**0.81**
D	n/a	1	Internal control framework	4	4	4	2	1	0.5
D	n/a	2	Risk control function - RCF	2	2	2	2	1	1
D	n/a	3	RCF’s role	6	6	5	5	0.83	0.83
D	n/a	4	Chief Risk Officer - CRO	2	2	2	2	1	1
D	n/a	5	Compliance function	3	3	2	3	0.67	1
D	n/a	6	Internal audit function	4	4	3	3	0.75	0.75
E	**n/a**	**n/a**	**Information systems and business continuity**	**4**	**4**	**2**	**3**	**0.5**	**0.75**
E	n/a	1	Information system and communication	2	2	0	2	0	1
E	n/a	2	Business continuity in management	2	2	2	1	1	0.5
F	**n/a**	**n/a**	**Transparency**	**4**	**4**	**1**	**2**	**0.25**	**0.5**
F	n/a	1	Empowerment	2	2	0	0	0	0
F	n/a	2	Internal governance transparency	2	2	1	2	0.5	1
			Total	**89**	**89**	**61**	**68**	**0.69**	**0.76**

(*Source*: Compiled by the authors, 2019)

For components of Group A, we can observe that the lowest value, meaning a CGDI of 0, in case of BCR was obtained for disclosing information related to know-your structure (i.e. any flow of significant information between entities which are relevant to

BCR Group's operational functioning should be documented and made accessible promptly or a clear statement of the fact that the Management Board should fully understand the operational structure with the approved business strategy). Compared to BCR, EGB registers the lowest value for CGDI of 0.33 (same CGDI as BCR) in case of disclosing non-standard or non-transparent activities (i.e. disclosing in details the appropriate actions taken to mitigate or avoid the risks or specifically describing the fact that all structures need to be subject to periodic internal and external audit reviews).

The highest value for Group A was obtained in case of organizational framework, CGDI of 0.67 for BCR and 1 for EGB, therefore we can conclude that a suitable and transparent structure is ensured by Management Board ("MB") and disclosed accordingly.

In case of Group B, the lowest value of CGDI was obtained for sub-group B.4 – Outsourcing and remuneration policies, BCR and EGB registering both a CGDI of 0.33, the impact arising from outsourcing requirements such as outsourcing policies or impact of outsourcing on institutions' business, which were not disclosed. On the other hand, sub-group B.1 – Duties and responsibilities of the MB recorded the highest CGDI, 0.85 for BCR compared to 1 for EGB, both credit institutions ensuring transparency at the highest standards. In case of BCR, the impact of a lower CGDI compared to the one of EGB comes from disclosure of details regarding the management and supervisory functions of MB such as: clearly mentioning that the supervisory function has a constructive role within the business or concisely mentioning the coordination role of the MB in business and risk strategies.

For Group C, we observe a high value of CGDI – 0.88, BCR being aligned also with EGB, as expected since it is mandatory for credit institutions to prepare a disclosures report in accordance with part eight of the Regulation (EU) no 575/2013 of the European Parliament and of the Council of 26 June 2013 on the prudential requirements no 648/2012, what it is named in Table 3 below – Basel 3 report.

In case of Group D – Internal Control, we observe high values of CGDI, however it is worth mentioning that EGB does not disclose detailed information on its internal control framework, obtaining a CGDI for this specific requirement of only 0.5, compared to BCR which recorded the maximum.

Group E – Information systems and business continuity records the lower value in case of BCR for the requirement specifically related to the information systems. On this topic, BCR does not disclose detailed information related to the effective and reliable information and communication systems or the fact that these systems are secure and independently monitored.

Group F – Transparency registers the lowest value of CGDI, 0.25 only for BCR, followed by EGB with 0.5. The main impact comes from disclosures related to empowerment. We observed that the banks do not specifically disclose the fact that strategies and policies are communicated to all relevant staff or the staff is updated in a clear and concise manner, however the existence of a Code of Conduct is presented.

Even though all the sub-items mentioned above are not specifically disclosed, this does not mean that the banks do not comply with EBA guidelines. As it was mentioned, these guidelines include requirements on internal governance, disclosing details of each point stated by EBA not being a mandatory action, but a voluntary one. By analysing the reports, we reached to the conclusion that, indeed, both BCR and EGB comply with EBA guidelines, however, they are not disclosing everything very detailed.

In Table 3 below are presented some statistics related to the reports in which data was found. We will analyse below the results shown and also we will emphasize what types of items are disclosed by both BCR and EGB, but in different reports.

Table 3. **Placing intermediary data in published reports**

			No. of details per requirement disclosed in:							
Group	**Item no.**	**Requirement**	**CG report**		**Annual report**		**Basel 3 report**		**FS**	
			BCR	**EGB**	**BCR**	**EGB**	**BCR**	**EGB**	**BCR**	**EGB**
A	**n/a**	**Corporate structure and organisation**	**5**	**2**	**0**	**2**	**0**	**0**	**0**	**3**
A	1	Organisational framework	2	0	0	1	0	0	0	2
A	2	Checks and balances in a group structure	2	1	0	0	0	0	0	1
A	3	Know-your-structure	0	0	0	1	0	0	0	0
A	4	Non-standard or non-transparent activities	1	1	0	0	0	0	0	0
B	**n/a**	**Management Body**	**23**	**24**	**1**	**5**	**4**	**2**	**0**	**1**
B	***n/a***	***Duties and responsibilities of the MB***	**9**	**8**	**0**	**2**	**2**	**2**	**0**	**1**
B	1	Responsibilities of the MB	8	5	0	2	1	1	0	1
B	2	Assessment of the internal governance framework	0	0	0	0	1	1	0	0
B	3	Management and supervisory functions of the MB	1	3	0	0	0	0	0	0
B	***n/a***	***Composition and functioning of the MB***	**13**	**15**	**0**	**0**	**1**	**0**	**0**	**0**
B	1	Composition, appointment and succession of the MB	4	5	0	0	1	0	0	0
B	2	Commitment, independence and managing conflicts of interest in the MB	3	4	0	0	0	0	0	0
B	3	Qualifications of the MB	1	2	0	0	0	0	0	0
B	4	Organisational functioning of the MB	5	4	0	0	0	0	0	0
B	***n/a***	***Framework for business conduct***	**0**	**0**	**1**	**3**	**1**	**0**	**0**	**0**
B	1	Corporate values and code of conduct	0	0	1	2	0	0	0	0
B	2	Conflicts of interest at institution level	0	0	0	1	1	0	0	0
B	3	Internal alert procedures	0	0	0	0	0	0	0	0
B	***n/a***	***Outsourcing and remuneration policies***	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**0**

			No. of details per requirement disclosed in:							
Group	**Item no.**	**Requirement**	**CG report**		**Annual report**		**Basel 3 report**		**FS**	
			BCR	**EGB**	**BCR**	**EGB**	**BCR**	**EGB**	**BCR**	**EGB**
B	1	Outsourcing	0	0	0	0	0	0	0	0
B	2	Governance of remuneration policy	1	1	0	0	0	0	0	0
C	**n/a**	**Risk Management**	**3**	**1**	**0**	**3**	**1**	**0**	**3**	**3**
C	1	Risk culture	1	0	0	1	0	0	1	0
C	2	Alignment of remuneration with risk profile	1	1	0	0	0	0	0	0
C	3	Risk management framework	0	0	0	1	1	0	2	3
C	4	New products	1	0	0	1	0	0	0	0
D	**n/a**	**Internal control**	**3**	**4**	**1**	**5**	**6**	**1**	**8**	**7**
D	1	Internal control framework	0	0	1	2	3	0	0	0
D	2	Risk control function - RCF	0	0	0	0	0	0	2	2
D	3	RCF’s role	0	0	0	0	0	0	5	5
D	4	Chief Risk Officer - CRO	1	1	0	0	0	1	1	0
D	5	Compliance function	1	0	0	3	1	0	0	0
D	6	Internal audit function	1	3	0	0	2	0	0	0
E	**n/a**	**Information systems and business continuity**	**1**	**0**	**0**	**2**	**0**	**0**	**1**	**1**
E	1	Information system and communication	0	0	0	2	0	0	0	0
E	2	Business continuity in management	1	0	0	0	0	0	1	1
F	**n/a**	**Transparency**	**1**	**1**	**0**	**1**	**0**	**0**	**0**	**0**
F	1	Empowerment	0	0	0	0	0	0	0	0
F	2	Internal governance transparency	1	1	0	1	0	0	0	0
		Total	**36**	**32**	**2**	**18**	**11**	**3**	**12**	**15**

(*Source*: Compiled by the authors, 2019)

In terms of EBA requirements disclosed by the parent and not by subsidiary, we noted the followings: in case of Group A, two additional sub-items are disclosed by EGB and not found at BCR and these are related to organizational framework and know-your-structure, followed by Group B, where four additional sub-items are disclosed by the group, out of which two are related to sub-group B.1. - the duties and responsibilities of the MB, another one is linked to sub-group B.2. – composition and functioning of the MB, more exactly to sub-item no 2 – where EGB mentions in the corporate governance report that members should be able to commit sufficient time and effort to fulfil their duties, while in case of BCR it is not clearly presented, and the remaining one is related to B.3, more exactly EGB clearly mentioning in the annual report that a continuing review process should be in place, regarding the implementation and the compliance of the standards.

In case of Group C, we can observe an alignment in terms of the number of sub-items disclosed by each bank.

For Group E, we notice that for sub-item no 1, EGB discloses in the annual report, information about the reliability and effectiveness of information and communication systems, including the fact that they are secure and independently monitored, while in case of BCR no clear information is given related to these topics.

Last but not least, in case of Group F, one additional topic is disclosed by the group and it is related to transparency, the institution presenting its current position and also future prospects in an accurate and timely manner. By observing the details included in EGB's annual report and comparing them with the administrators' report from BCR, we consider that the last one does not present very detailed information, this being the reason we allocated a score being equal to 0.

In regards to EBA requirements disclosed by the subsidiary and not by the parent, we observed very few cases, as expected, such as: one case is Group B, more exactly sub-group B.2, item no 4, where BCR clearly states that the MB meets regularly in order to be able to carry out its responsibilities effectively and adequately, while in case of EGB for sure it is applicable but not clearly disclosed.

Even though both parent and subsidiary are aligned in terms of numbers of sub-items disclosed for Group C, it is worth mentioning that in case of sub-item no 1, BCR specifically discloses information about its integrated and wide risk culture, while EGB does not clearly present the risk culture.

Group D is one of the six groups for which BCR, overall, discloses one additional item related to internal control framework compared to its parent. Even though the impact is not significant, if we refer to the number of sub-items disclosed, indeed, BCR is more transparent on this topic than EGB. Two additional sub-items are disclosed in case of item no 1 and these are related to a strong and comprehensive internal control framework developed and maintained at wide considerations and also to pointing out the fact that adequate number of qualified staff represent part of the control functions, topics which are not highlighted by EGB.

As it can be noted from Table 3, BCR discloses a total number of 36 sub-items in corporate governance framework report, followed by 12 sub-items in the financial statements, 11 in Basel 3 report and only 2 not found in the other three reports are disclosed in the administrators' report.

In case of EGB, the situation is slightly different, disclosing 32 sub-items in corporate governance report, 18 in the annual report, followed by 15 in the financial statements and only 3 not found elsewhere but in Basel 3 report.

Another adjacent objective of this study is to analyse the cases in which the same information is disclosed by both BCR and EGB, but in distinct reports.

Please note that we did not take into consideration the cases in which the same information is disclosed by BCR in the administrators' report, while EGB discloses it in the annual report, due to the fact that in case of BCR, which is not a listed company compared to EGB, we do not have available an annual report to make reference to.

The basis of this interpretation is represented by the working paper in which data was manually collected, in table 3 only the results being shown.

For Group A, item no 1 – organizational framework, BCR discloses 2 sub-items in corporate governance report, while EGB discloses them in the financial statements, these 2 sub-items being related to the ability of the MB to oversee and manage risks without being impeded by the structure and to the situations of changes to group's structure with impact on its soundness, such as mergers, selling or dissolving part etc.

For item no 2 – checks and balances in group structure, BCR discloses 1 sub-item in the corporate governance report, while EGB does it in the financial statements, this regarding the MB of the parent company which should establish a governance structure that contributes to an effective oversight of all the subsidiaries.

For Group B, sub-group B.1, item no 1 – responsibilities of the MB, 3 sub-items are disclosed by BCR in corporate governance report, while EGB discloses them in the annual report, financial statements, respectively annual report again, these items being related to the following: MB shall set the bank's strategy; the key responsibilities include setting and also overseeing business and risk strategies, including the tolerance towards risks; respectively an adequate internal control framework.

In case of sub-group B.2, item no 1 - Composition, appointment and succession of the MB, BCR discloses 1 sub-item in Basel 3 report, while EGB presents it in corporate governance report, this being related to the policies for selecting, monitoring and also planning the succession of the members.

For Group C, item no 1 – Risk culture, BCR discloses 1 sub-item in the financial statements, while EGB does it in the annual report, this one regarding the holistic risk management framework which should be ensured and not limited to credit, market or liquidity risk, but also to reputation, compliance and other different strategic risks.

For item no 3 – Risk management framework, BCR discloses 1 sub-item in Basel 3 report, while EGB does it in the annual report, this being related to the setting up of RC which should review on a regularly basis both formal and informal reports.

For item no 4 – New products, information is presented by BCR in corporate governance report, while EGB discloses it in the annual report, mentioning the existence of a new products approval policy.

For Group D, item no 1 – Internal control framework, one sub-item is disclosed by BCR in Basel 3 report, while EGB does it in the annual report, regarding the internal control function which requires verification from independent functions, such as internal audit or compliance functions.

In case of item no 4 – CRO, BCR presents in one sub-item the responsibilities of the CRO in the financial statements, while EGB discloses them in Basel 3 report.

When it comes to item no 5 – compliance function, 2 sub-items are disclosed by BCR in Basel 3 report and corporate governance report, while EGB presented them both in the annual report, these being related to the role of the compliance function and also to the fact that compliance function should verify also new products and new procedures in order to make sure that these are compliant with the current legal environment.

Last but not least, for item no 6 – internal audit function, one sub-item is disclosed locally in Basel 3 report, while the group presents it in the corporate governance report, this detailing the internal audit work which should be done in accordance with an approved audit plan.

For Groups E and F, no differences were identified, meaning the same information, if disclosed, was found in the same report.

5. Conclusions and moving forward

An effective corporate governance can be achieved through the adoption of a set of principles and best practices (Arjoon, 2005).

Higher governance expectations and requirements for supervisory boards and executive committees of European banks were triggered by tighter oversight practices adopted in the financial industry, as described by Bernasconi and Lalmant (2015).

The overall results of our study show a CGDI, as at year ended 2017, of 0.69 in case of BCR, followed by 0.76 in case of the parent. These represent high values if we take into consideration on the one hand the complexity of EBA's guidelines and, on the other hand, the fact that the guidelines are transposed into requirements on internal governance, these being mandatory to comply with, but voluntary in terms of disclosures. In terms of disclosures, Basel 3 report comprises the elements that are mandatory to be disclosed, these being more related to risk management than to corporate governance.

The results confirm our expectations in regards to EGB, which illustrates a higher CGDI and this is due to the fact that it represents a listed bank to stock exchanges, compared to BCR which is a not-listed entity.

In case of BCR, the effective corporate governance is achieved through the alignment with group policies which are compliant with EBA.

A breach in the compliance with EBA requirements on internal governance, represents a real threat to the future of every credit institution, this not being the case in our study.

Additionally, the results from Table 3 also confirmed our expectations, meaning a lot of data was found in the corporate governance reports and financial statements in case of both banks, the differences arising when it comes to annual report in case of EGB where very detailed information is presented as the bank is a listed one, BCR compensating with Basel 3 report.

As forward looking information and considering the fact that the analysis was performed for only one year, 2017 – this being one for preparation for new challenges in terms of governance, future research will target the adoption of the newest EBA guidelines on internal governance which became effective starting with 30 June 2018, but for which data was not published at the date of our study. The future research directions will take into consideration the newest EBA guidelines applied starting with 30 June 2018, for which data will be collected from the published reports for 2018 year ended. Additionally, by taking into account the fact that as at 31 December 2018, the leader in Romania's banking market in terms of total assets has changed, instead of BCR, Banca Transilvania occupying the first place, a future research direction may include this credit institution in scope, the sample being extended from 2017 leader on Romanian banking market – BCR along with its parent – EGB, to Banca Transilvania, for which a parent company outside of Romania does not exist, BCR and EGB, for 2018 as period of analysis.

By analysing the reports, we reached to the conclusion that not each requirement of EBA is disclosed in a detailed manner. However, our intermediary data which was used in determining the output data, may be subject to research limitations due to subjectivism.

Reducing subjectivity in computation of corporate governance disclosure index could be achieved through the involvement of more researchers and also by comparing the scores obtained.

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Analysis of annual reports according to ESG dimension

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Abstract: *The goal of this work consists in showing the level of observing the items of the GRI conceptual framework and in understanding the ESG dimension of companies listed on the Bucharest Stock Exchange. Thus, in order to achieve this goal, companies listed on BSE, which are part of different business sectors, have been analysed. The research method used is based on providing scores for the compliance level of the reports with a scoring grid developed on the basis of the literature review. The study proves the increasing trend of companies to publish annual reports consistent with CSR principles each year.*

Keywords*: Social responsibility, Romania, ESG, listed companies.*

1. Introduction

Globalization has caused substantial changes in the structure of the international company (Held *et al.*, 2002, European Commission, 2001). One of the most important consequences of globalization was the emergence of new areas of activity where economic activity goes beyond political, legal and economic control (Ohmae, 1995; Drucker, 1997; Dunning, 1997).

Bowen (1953) argues that CSR helps and forces managers to take decisions or follow those lines of action that are desirable in terms of the goals and values of our society. Friedman (1970) shows that companies using CSR principles need to use their resources and engage in profitable activities as long as they fall under the rules of the game, namely they engage in open and free competition without deception or fraud.

Also, Frederick (1983) argues that managers should follow the fundamental principles of maximizing the capital value and continue to promote socially responsible activities that enhance the business performance. However, because managers' goals differ from those of the owner, managers are following their own interests and sometimes they can ignore the owner's interests. Carroll (1979) describes social responsibility as a concept that encompasses the economic, legal, ethical and discretionary expectations that society has over organizations at a given moment.

The purpose of this study is to analyse whether Romanian companies are oriented towards meeting CSR standards in order to achieve performance. In order to achieve this goal, we have proposed the following assumptions:

H1: Do companies listed on BSE with more than 500 employees observe the GRI conceptual framework?

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H2: Do the analysed companies see an increase in CSR performance?

H3: Does the Annual Report provide sufficient CSR information?

Further, the paper is structured as it follows: the following section reviews the literature, the methodology of research is presented below. The third part analyses the annual reports in terms of compliance with the items of the GRI framework, and the fourth part analyses the GRI items. The last part includes the conclusions and boundaries of this study as well as the future research directions.

2. Literature review

Corporate social responsibility becomes an increasingly significant item of a company's strategic management. Thus, Corporate Social Responsibility (CSR) can be defined as a means of overcoming efforts in order to comply with voluntary commitments that can be interpreted as "actions that can bring a certain social benefit beyond the company's interests imposed by the law" (McWilliams *et al.*, 2001).

Over the last decades, Corporate Social Responsibility (CSR) has undergone an incredible transformation, becoming a multidimensional concept (Cochran, 2007). Some studies have found that compliance with CSR principles leads to a better company performance (e.g. Preston *et al.*, 1997), while other studies have found that a higher company performance causes companies to devote more resources to CSR for example, Waddock *et al.*, 1997).

Corporate Social Responsibility (CSR) has become a concern for managers because companies are valued not only financially, but also in terms of social performance. Empirical evidence from literature on the relationship between CSR and the performance of a company is mixed. The oldest research on this topic has first examined the effect of CSR over the performance in a single direction. However, Waddock *et al.* (1997) and Preston *et al.* (1997) found that there is a positive and positive relationship between CSR and performance. Currently, stakeholders are a decision-making point in the organizational assessment, requesting companies to disclose their economic governance, corporate governance, social performance and environmental ethics (EGSEE), sustainable performance (Brockett *et al.*, 2012; Rezaee, 2015).

Saeidi *et al.* (2015) examined the mediation effect of a sustainable competitive advantage, reputation and customers' satisfaction in CSR relation and the company performance and found an indirect effect of CSR in increasing the company's performance through competitive advantage, reputation and customers' satisfaction. It has also been found that CSR has a positive impact over the business performance (e.g. Rodríguez *et al.*, 2007), while Singal (2014) shows that the relationship between CSR and performance can be bidirectional.

Other empirical evidence prove that the benefits of stakeholders are not in conflict, as CSR can increase reputation, brand and confidence, attracting customers and employees, and ultimately can increase the company's profitability and value (Jones, 1995, Porter *et al.* 2006, 2011). Edmans, (2012), and Servaes *et al.*, (2013) have shown that CSR provides social benefits, proving that CSR activities lead to a number of benefits for business stakeholders including the increase in employees' moral, a better reputation of the company and a more harmonious growth. Social performance is an effective way to maintain a positive relationship with employees, decreasing recruitment and training costs as well as improving satisfaction and jobs retaining.

Gupta (2002) found that CSR activities have positively influenced the corporate reputation by proposing a means of differentiation for companies that could result into a competitive advantage. Initially, CSR reporting was voluntary, determined by stakeholders' requirements, not by the state. However, over time, the Government has begun to request entities to submit different reports, indicators or statements on social and environmental issues. According to Smith *et al.* (2005) it is noted that the influence of stakeholders is different from one country to another. For example, in Romania stakeholders are represented by the civil society (Apostol, 2015).

Stakeholders represent one of the forces that lead to the recognition of CSR reporting. According to Freeman (1984) quoted by Eccles & Krzus (2010), "a party concerned into an organization is by definition any group or individual that may affect or may be affected by the achievement of the organization's goals".

Therefore, this has led to the publication of a growing number of corporate CSR reports, to the analysis of non-financial information by stakeholders and the development of standards and regulations in the field. Suchman (1995) asserts that voluntary reporting of social and environmental information helps to maintain a good relationship with stakeholders by defining this concept as a "generalized perception or that an entity's actions are desirable, proper or appropriate" within a social system.

Communication of non-financial aspects on CSR was voluntary until the 2014/95 / EU Directive, applicable from 1 January 2017 and OMFP 1938/2016, introducing the "Non-Financial Statement" into the annual reports. CSR reporting in Romania is characterized by a growing global influence and CSR is closely linked to corporate sustainability. KPMG (2013) reports show that 14% of the top 100 companies in the world use the term "corporate responsibility", 25% of companies use Corporate Social Responsibility, and 43% of companies use "sustainability".

This study will focus on CSR-related general standards, namely those that address the three pillars of sustainable development (economic, social and environmental). In terms of assessing the company's overall performance, we should mention the concerns of international rating agencies to assess certain company ESG scores (Environment, Social and Governance), which are used in addition to the financial score, in order to increase the accuracy by assessing the company's performance and risks. Sustainable development of organizations means not only providing products and services that satisfy the customer without harming the environment, but that operate in a responsible manner and present the information within sustainability reports reliably, efficiently and transparently. Thus, the annual reports reflect all the ESG (see Table 1) dimensions of sustainable performance, and their reliability, objectivity and credibility are substantiated by ISO certifications and the GRI Reporting Framework.

ISO 14000 environmental standard and ISO 26000 on social responsibility provide reports with external assurance on the credibility and legitimacy of management processes and the effective communication of sustainable performance to all stakeholders. Borraz (2004) has defined four major characteristics of the standards:

working with stakeholders, ensuring the necessary scientific and technical data and consensus resulting from them and the voluntary nature of their implementation.

GRI is the reporting framework that is widely recognized as a leader in international standardization of sustainability reports (Bebbington *et al.*, 2012; Gray, 2010; Mahoney *et al.*, 2013). It is also considered the primary example of sustainability as it has a broad implementation in multinational companies operating in a variety of industries (Joseph, 2012). The acceptance of companies over the role of GRI guidelines has been confirmed by other studies (Mahoney *et al.*, 2013). Companies complying with the GRI reporting framework have a higher commitment towards CSR compared to an entity that does not comply with the GRI framework. However, the authors criticize the theoretical GRI framework, because the sustainability principles seem to be dispersed (Moneva *et al.*, 2006, Joseph, 2012).

This study shows the potential of companies listed on the Bucharest Stock Exchange (BSE) to achieve performance through compliance and alignment with the principles of the GRI conceptual framework. This research contributes to a better understanding of corporate social responsibility in terms of compliance with the GRI framework and to prove the level of compliance of the annual reports of companies listed on BSE.

Table 1. **Items of GRI framework with the ESG dimension**

Financial	Social	Environmental
GRI 102 General reporting	GRI 401 Employees GRI 409 Forced or compulsory labour	GRI 301 Materials
GRI 103 Management approach	GRI 402 Labour relations/ management GRI 410 Security practices	GRI 202 Energy
GRI 201 Economic performance	GRI 403 Health and safety at the work place	GRI 303 Water
GRI 202 Marketing	GRI 404 Training and education GRI 412 Human rights	GRI 304 Biodiversity
GRI 203 Indirect economic impact	GRI 405 Diversity and equal opportunity	GRI 305 Emmissions
GRI 204 Procurement practices	GRI 406 Non-discrimination GRI 415 Public policies GRI 416 Consumer's protection	GRI 306 Waste
GRI 205 Anti-corruption	GRI 417 Marketing and labelling	GRI 307 Environmental protection
GRI 206 Anti-competing behaviour	GRI 418 Customers	

(*Source*: Own processing)

3. Research methodology

The reporting practices of Romanian companies were analysed using an initial sample of 15 companies listed on the Bucharest Stock Exchange (BSE). Research is based on the selection of a sector-specific index: BET (Bucharest Exchange Trading).

In addition, the selection process was based on three criteria:

- Companies must have over 500 employees;
- Companies must have Romanian capital;
- Financial and non-financial information for companies must be public for stakeholders.

The purpose of this study is to analyse whether Romanian companies are oriented towards meeting CSR standards in order to achieve performance. In order to achieve this, we have proposed the following hypotheses.

H1: Do the companies listed on BSE with more than 500 employees observe the GRI conceptual framework?

H2: Do the analysed companies see an increase in CSR performance?

H3: Does the Annual Report provide sufficient CSR information?

From the sample of 15 companies listed on BSE in different fields of activity, 11 companies were selected which meet the above criteria. Digi Communications N.V., MedLife S.A. and Purcari Wineries Public Company Limited were eliminated because they did not have Romanian capital, and Sphera Franchise Group was eliminated because it did not meet the 500-employees limit criteria or the Romanian capital holding criteria (see Table 2). The companies Societatea Energetică Electrica SA and Bursa de Valori Bucureşti SA are represented by the average number of employees, Fondul Proprietatea is managed by an AFIA group, so we did not consider it a criterion to deselect these companies from the analysis of the reports.

Table 2. **Sample of companies listed on BSE**

No	BSE symbol	Companies	Industry	No. of employees 2017	Romanian capital (%)
1	FP	Fondul Proprietatea	Investments services	9.000	100%
2	TLV	Banca Transilvania SA	Banking services	7.007	30.97%
3	SNP	OMV Petrom SA	Industrial field	13.322	20.64%
4	SNG	SNGN Romgaz SA	Industrial field	6.046	70%
5	BRD	BRD - Groupe Societe Generale S.A.	Banking services	6.982	3.18%
6	TGN	SNTGN Transgaz SA	Industrial field	4.548	58.51%
7	EL	Societatea Energetică Electrica SA	Industrial field	149	48.78%
8	DIGI	Digi Communications NV	Telecommunication services	1.821	-
9	TEL	CNTEE Transelectrica	Industrial field	2.180	58.69%
10	SNN	SN Nuclearelectrica SA	Industrial field	1.975	82.5%
11	M	Medlife SA	Medical services	1.745	-
12	COTE	Conpet SA	Industrial field	1.666	58.71%
13	SFG	Sphera Franchise Group	Food field	-	-
14	WINE	Purcari Wineries Public Company Limited	Food field	500	-
15	BVB	Bursa de Valori București SA	Financial field	42	100%

(*Source*: Own processing)

We have analysed the reports published by each company found on the BSE website and on their website. The reference years used are 2017, 2016 and 2015. The published reports analysed are the following:

- Annual report;
- Annual report of the Board of Directors;
- Annual report of the managers;
- Managers' report.

In order to achieve a high, relevant, useful, consistent and comparable quality analysis, we also used the "Non-financial Information Reporting Guide", which states that the goal of entities is to publish non-financial (environmental, social and government-related) information. The publication of non-financial information leads to an economic growth in a sudden and sustainable way and also ensures transparency for stakeholders.

The annual reports are in accordance with the Regulation of the National Securities Commission - CNVM no. 1/2006 and discloses information on the performance of the entity, the conducting of the financial year ended, information on the social responsibility and environmental protection, entity strategy, risk management and information on the management of the company and shareholding structure, as well as information on the market of shares issued by entities. For stakeholders to fully understand the key items of an entity's value structure, the entities have focused on voluntarily publishing CSR information. Thus, CSR information allows the identification of essential aspects and their assessment.

The reference years used are 2017, 2016 and 2015. The reports were taken from the company's website or from the BSE website, and to show "the compliance of the annual reports with the ESG size", we adapted the methodology used in the study by Calabrese *et al.* (2015). We created a model based on scores 1-3, applied to GRI framework items.

The GRI items were adapted to the reporting conditions of the Romanian companies, eliminating:

- GRI 408 Child labour;
- GRI 419 Socio-economic compliance;
- GRI 308 Supplier environmental assessment;
- GRI 407 Freedom of association and collective bargaining;
- GRI 414 Supplier social assessment;
- GRI 411 Rights of indigenous peoples;
- GRI 409 Forced or compulsory labour;
- GRI 413 Local communities.

In order to achieve score 3, companies must fully comply with CSR items according to the GRI framework. Also, in order to achieve score 2, companies must partially observe the CSR items, for example, to not provide detailed information, these being just listed. And score 1 is achieved by companies that do not have the GRI items at all.

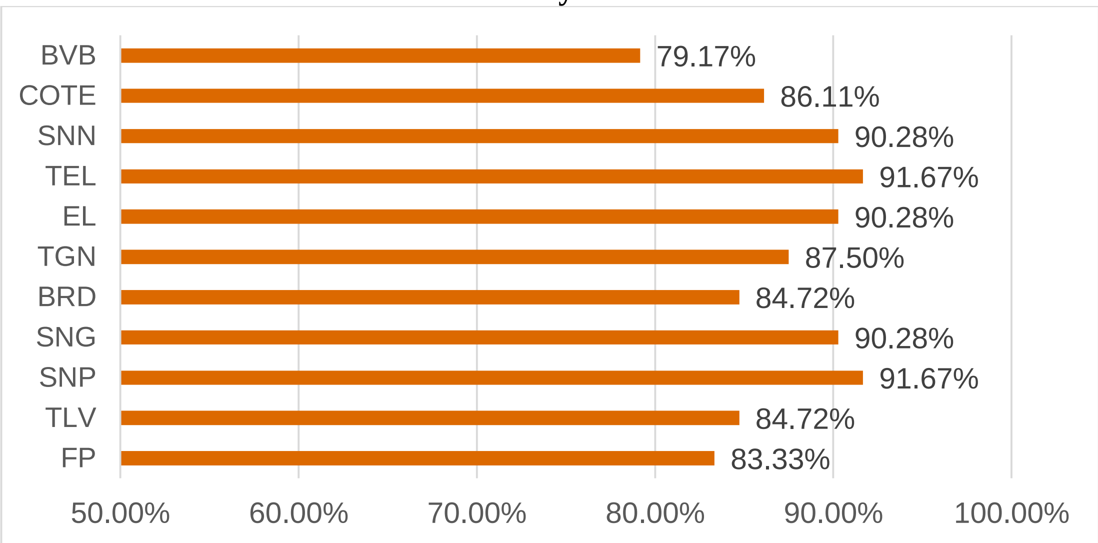
4. Compliance of annual reports with GRI framework items

In order to determine the level of implementing the GRI framework items, we analysed the annual reports of the selected companies. In order to highlight the uniformity items with the items of the GRI framework, it was taken into account the aspect of having public policies, according to GRI 415 Public Policies.

We have analysed the annual reports listed on three years, 2015, 2016, and 2017 in order to observe the compliance of reports with the items within GRI framework. Compliance of annual reports has been measured by using scores from 1 to 3, resulting into several charts. In order to make these charts, we calculated the scores in relative values.

Chart 1 shows the compliance level of reports on financial items for the years 2015, 2016 and 2017, the maximum score that could be achieved for financial items is 24. We can see that in Chart 1, the highest relative score was achieved by CNTEE Transelectrica. and OMV Petrom S.A., achieving 91.67%, followed by S.N. Nuclearelectrica SA., Societatea Energetică Electrica SA and SNGN Romgaz SA with a score of 90.28% and Conpet SA with a score of 86.11%.

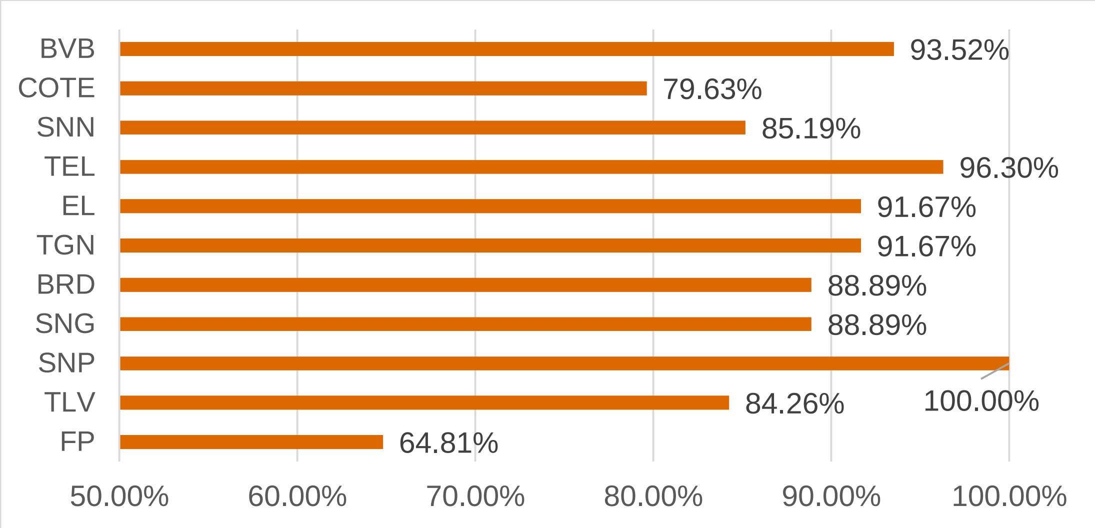
Chart 1. **Compliance level with GRI framework regarding financial items for the three years**



(*Source*: Own processing)

Chart 2 shows the compliance level of reports regarding social items for 2015, 2016 and 2017, the maximum score for social items is 36. We can see that from Chart 2, the maximum score of 100% is achieved by OMV Petrom SA, proving that it fully complies the twelve social items. The second score was achieved by CNTEE Transelectrica, with 96.30%, followed by Bursa de Valori București SA, with 93.52% and the companies Societatea Energetică Electrica SA and SNTGN Transgaz SA achieving a score of 91,67%.

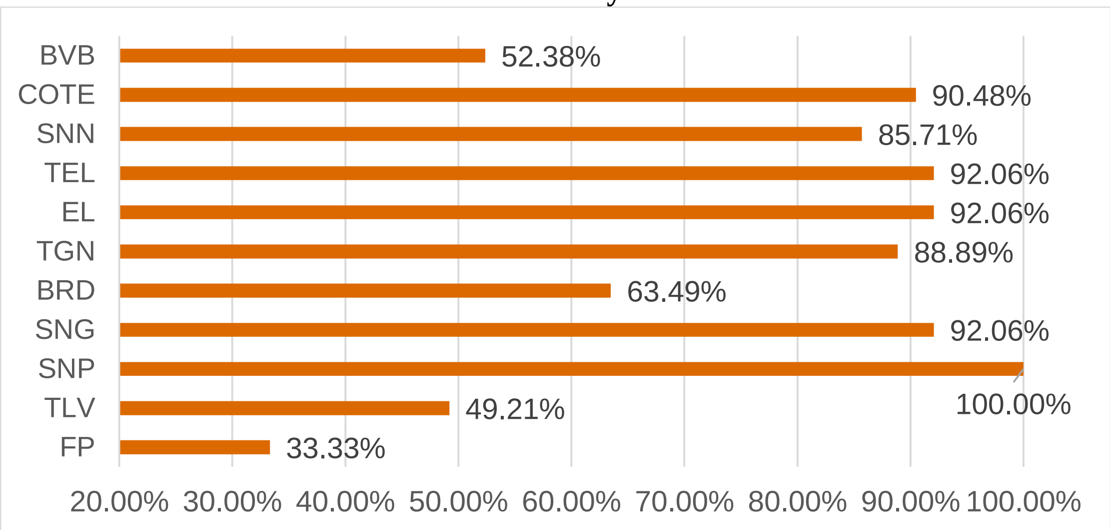
Chart 2. **Compliance level with GRI framework regarding social items for the three years**



(*Source*: Own processing)

Chart 3 shows the compliance level of reports regarding environmental items for the years 2015, 2016 and 2017, the maximum score for the environmental item is 21. Thus, we can observe that the relative maximum score of 100% regarding the observance of the seven principles of the GRI framework is achieved by the company OMV Petrom SA. The second score is achieved by the companies CNTEE Transelectrica, Societatea Energetică Electrica SA and SNGN Romgaz SA, achieving a score of 92.06%. The third score is achieved by SNGN Romgaz SA with a score of 90,48%.

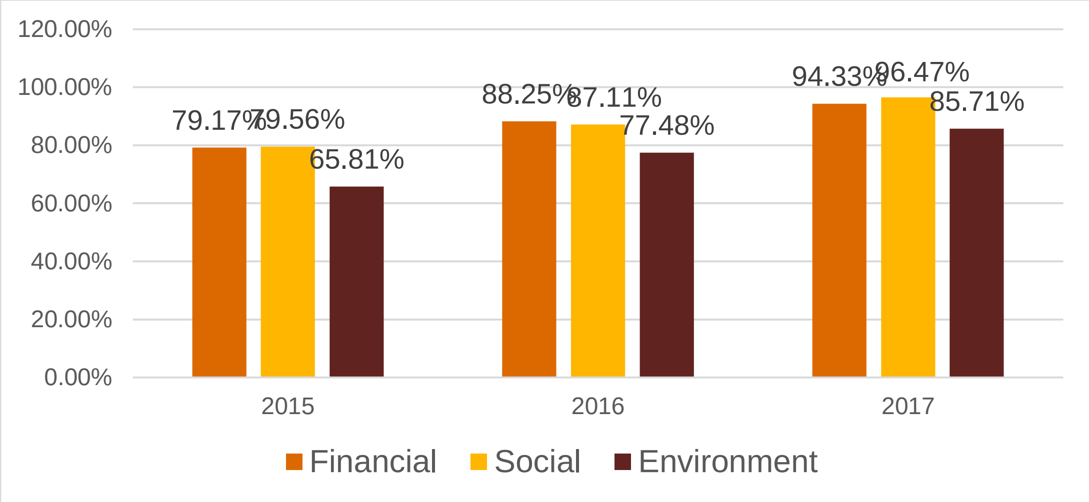
Chart 3. **Compliance level with GRI framework regarding environmental items for the three years**



(*Source*: Own processing)

In Chart 4 we calculated the average of the three items per each year, 2015, 2016 and 2017 in relative values, because the maximum possible scores are different. The maximum possible score for the financial item is 24, for the social item the maximum possible score is 36 and for the environmental item the maximum score is 21. Comparing the three years we can see that the items: financial, social and environmental increase every year, each company paying more attention to these items.

Chart 4. **Scores achieved on the three categories of items- relative values**



(*Source*: Own processing)

Following this analysis for the year 2015, the financial item receives 79.17% because the items GRI 202 Marketing, GRI 203 Indirect economic impact, GRI 204 Procurement practices, GRI 205 Anti-corruption, GRI 206 Anticompetitive behaviour are presented partially and not entirely or no information is provided. Since 2016, companies are focusing on paying more attention to the financial item, achieving 88.25% compared to 2016, in 2017 the compliance level is higher reaching 94.33%. Analysing the two years, 2016 and 2017, we noticed that item GRI 204 Procurement Practices increases, it gets the third score, and towards the other items GRI 202 Marketing and GRI 203 Indirect economic impact, companies start to pay a higher interest, publishing information about the two items.

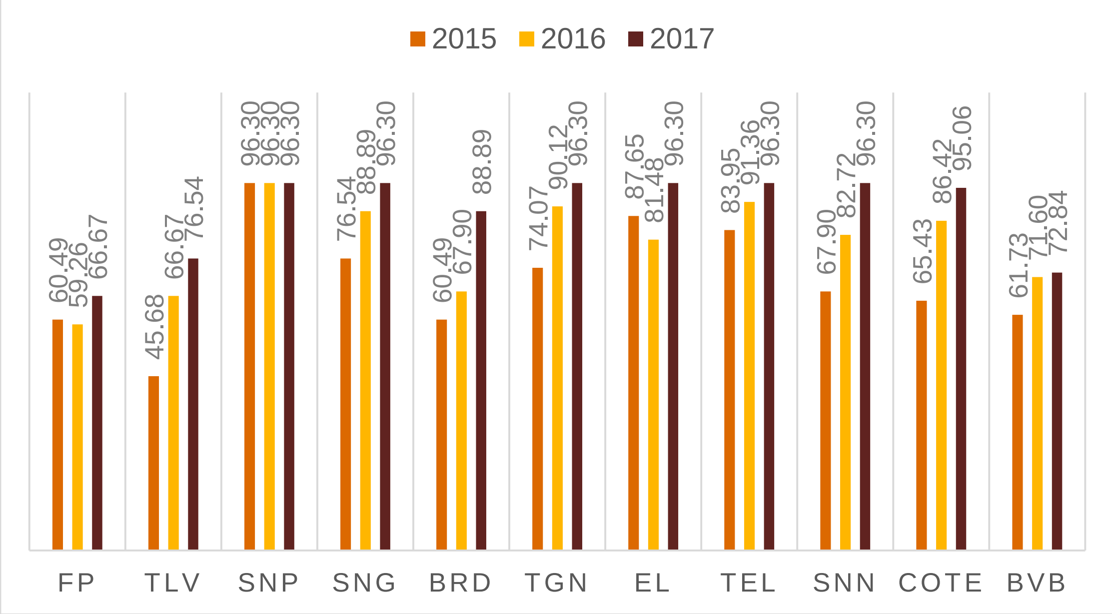
In 2015, for the social item, the score is 79.56%, in 2016 the score of this item increases to 87.11% and in 2017 it reaches 96.47%, because the items GRI 402 Labour Relations/Management, GRI 403 Health and Safety at Work, GRI 404 Training and education take a score higher than maximum 2 or 3 according to the score grid.

In 2017, due to the 2014/95/EU Directive, applicable from January 1 and OMFP 1938/2016, where the "Non-financial Statement" was introduced, there is a considerable increase for the three items, which suggests that companies are obliged to publish CSR information. At the same time, companies realize that the publication of CSR information optimizes the quality of implementing the principles of good corporate governance, ethics and integrity.

5. Analysis of items within GRI

Currently, companies have to respond actively to changing customers' needs and expectations and to implement social items in order to increase business performance. From Chart 5, we can see that companies are increasingly focused on applying the GRI reporting framework. In order to make Chart 5, we calculated the total scores in relative values of the three dimensions for the years 2015, 2016 and 2017. For 2015, we can observe a low tendency of the companies for CSR reporting, the single company that has the same is OMV Petrom SA with a maximum and constant score of 96.30%.

Chart 5. **Compliance of annual reports regarding GRI framework**



(*Source*: Own processing)

Following the analysis, Fondul Proprietatea achieves a score of 60.67% for 2015, and in 2017 the score achieved is 66.67%. The increase for this is not significant, because some GRI items are not observed. This is due to the shareholding structure, this company being managed by an AFIA, and during the year 2017 the Fund had no employees, indicating that in its report we will not find the following items presented according to the framework: GRI 401 Employees, GRI 402 Labour Relations/Management, GRI 403 Health and Safety at Work, GRI 404 Training and Education, GRI 405 Diversity and Equal Opportunities, GRI 406 Non-Discrimination, GRI 410 Security Practices, GRI 412 Human Rights.

Compared to 2015 and 2016, Banca Transilvania SA in 2017 achieves a score of 76.54%, improving its practices regarding the compliance with the GRI framework. Its orientation towards a high level of CSR reporting is reasoned to achieve performance by valuing the employees.

Regarding the company OMV Petrom SA, the 96.30% score is the highest in the analysis. During the three years analysed, its score does not change but remains constant. This is due to the fact that OMV Petrom SA presents information on CSR reporting since 2011 as its orientation is to provide sustainable access to energy for a modern life, involving openness to new strategic and corporate responsibility.

OMV Petrom SA is followed in 2017 with the same score of 96.30% by the companies like SNGN Romgaz SA, SNTGN Transgaz SA, Societatea Energetică Electrica SA, CNTEE Transelectrica and SN Nuclearelectrica SA, and the second place is taken by CONPET SA with a score of 95.06%.

The high level of compliance of annual GRI reports is due to companies' awareness that compliance and alignment with the requirements of the European and national regulatory framework optimizes the quality of implementing the corporate governance, ethics and integrity principles, leading to an increased performance of the companies.

In conclusion, the compliance level of each item under the GRI framework cannot be the same for each company as each company can publish relevant information in the way that it considers the most useful under Directive 2014/95/EU of the European Parliament and the Council, providing a significant level of flexibility.

6. Conclusions

With the increase in globalization, companies are starting to focus on publishing not only economic, but also social and environmental criteria, in a voluntary way, imposed by the parent company but also mandatory by Directive 2014/95/EU. Corporate Social Responsibility (CSR) helps companies to avoid, decrease or control the harmful impact of their activities on the environment and the population, to comply with applicable legal requirements, forming part of a trend appreciated by prospective or potential customers, as well as by investors.

The goal of this study was to analyse whether Romanian companies are oriented towards meeting CSR standards in order to achieve performance. As far as the first hypothesis is concerned, we can see that the 11 companies meet the criteria of Directive 2014/95 / EU, have over 500 employees and apply the conceptual GRI framework. The results obtained from the analysis of the company reports show that the level of implementing the reporting practices according to the GRI conceptual framework improves significantly each year.

The second hypothesis refers to the benefits of an increase in performance for CSR publishing of information. These are highlighted in the annual reports and supported by Vaz *et al.* (2016), which shows that a high level of reporting under the GRI framework leads to a better image of the company, lower costs, attracting new potential investors. The annual reports of the companies analysed show the following:

- Strengthening and diversifying internal and external collaboration relationships;
- Increasing the efficiency of technological processes and decreasing their negative impact over the environment;
- Increasing the company's adaptability and capacity to react to the permanent changes of the environment where it operates;
- Increasing the satisfaction of customers, business partners, suppliers and the quality of services provided;
- Improving occupational safety and security;
- Improving the general, internal and external communication process of the company, the image capital;
- Improving the process of training, educating and professional development of staff;
- Optimizing the company's rating;
- Optimizing the social responsibility policy model and granting sponsorships.

Corporate Social Responsibility Reporting also aims to communicate the companies' performance to the stakeholders. Kulkarni (2014) believes that in order to gain competitive advantage, companies must provide in the annual reports a higher commitment to publishing information on corporate social responsibility.

The results achieved by testing the third hypothesis prove that the annual reports analysed over the three years offer a high level of compliance with the GRI framework. In 2017, the annual reports are more transparent than in 2016 and 2015, the high level of implementing the GRI framework is achieved by each company according to the activity specific items, highlighting a high level of 96.30% the industrial sector that grants and is obliged to observe the environmental protection rules.

A limitation of research is given by the small sample used, following the selection criteria of the sample resulting into only 11 companies. A solution to show the compliance of annual reports with the principles of non-financial reporting is the inclusion of several BSE indices in the analysis. The second limit is the absence of certain discussions with persons inside the companies and the analysis of individual reports rather than group reports. Another limit is also a possible subjectivity of the scoring and coding grid. The paper intends to broaden the reporting vision of these companies and allows a better understanding of the ESG dimension.

In conclusion, the study shows that Romania is in a continuous process of development regarding the understanding of the GRI framework. Also, Romania is a potential contributor who can participate together with the other EU countries to the awareness of significance and maintaining a communication of information on corporate social responsibility for stakeholders.

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PS2 AUDIT AND ETHICS

Chairperson: Costel Istrate, Alexandru Ioan Cuza University of Iași, Romania

The dynamics of audit market under the adoption of International Financial Reporting Standards

Marta Tache

Internal audit – A key process for diminishing the risk of fraud

Mihai Păunică

Cristina Iovu

The dynamics of audit market under the adoption of International Financial Reporting Standards

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Abstract: *The scope of accounting figures as part of the entire social mechanism also includes some unannounced ambushes alongside the distinct approach of conceptual frameworks. Although there is a solid foundation of rules and principles, the practical controversy over the rule of law, the features of the financial market, the characteristics of the accounting regulation process and the ability to adapt the environment seem to be endless. A credibility benchmark is made by the auditor's opinion that increases the reliability of financial statements, thus providing investors with assurance about the entity's independence. The main purpose of the research is to present the actual circumstances regarding international financial reporting rules and their direct influence on financial audit. The in-depth knowledge of these elements makes it possible to highlight all the existing achievements, thus marking new directions for improving the bond between the two congruent themes.*

Keywords: *IFRS, audit market, reporting, Big 4, audit opinion.*

1. Introduction

This article studies the impact of financial reporting under International Financial Reporting Standards (IFRS) on the financial audit market through Big 4 companies. In 2010, the European Commission manifested multiple concerns about the European Union market in the Green Paper (policy options for progress towards a European contract law for consumers and business): "Such a concentration may involve a risk accumulation and a collapse for the whole system of firms that can lead to the destruction of the entire audit market." These concerns are rooted in a theoretical premise that highlights this excessive concentration, which corresponds to the effects of domination and the total lack of competition with implications for quality and audit costs. For a better understanding of this topical issue, McInnis D. & Mergenthaler (2012) and Wieczynsca (2013) have explained the Big 4 oligopoly through the complexity of global accounting standards that increases the entry barriers of Non Big 4 firms to the global market. Then, the introduction of IFRS rules at EU level has led to a drastic change in corporate accounting, generating an increase in complexity and uncertainty in the preparation of financial statements.

Moreover, Pong (2003) examines the changes in the US market structure with regard to audit services targeting the gradual shift of companies from Big 8 to Big 6. The same increase in market share was also observed by other researchers in the field, Beattie & Fearnley (1994) at the Big 4 companies.

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To identify studies in the literature, we have selected the following keywords: adoption of IFRS, audit market, reporting and audit opinion. These keywords have been used in specialized journals such as: American Accounting Association, Elsevier, The International Journal of Accounting, Journal and Accounting Information Systems, Taylor and Francis. The first researches in the field have been made by DeAngelo (1981) and Fung *et al.* (2009) who debated the financial audit market and highlighted the impact of the Big 4 (Price Waterhouse Coopers - PWC, KPMG, Deloitte and Touche Thomas-Deloitte and EY-Ernst and Young) globally. They provide a high quality of evidence through: human, financial and software resources, experience, solid knowledge, quality control procedures, and their credibility. Therefore, in the financial audit market an oligopoly was created, which led to the impossibility of other companies to access important customers. At European Union level, the rotation of firms auditing was encouraged because most financial institutions are audited by Big 4.

Regarding the audit market, the first researcher was Simunic (1980), who analysed the size of audit spending in the United States, studying whether Big 4 companies at that time, they are closed or merged, they get to Big 4 record much higher audit costs than other companies. The research was continued by Francis and Simon (1987) who observed a supplement in the share of audit costs. In the 1978-198 period, Pamrose (1985) and Simon (1987) reached the following results: 36 companies out of a total of 173 companies were not audited by Big 8. This percentage of 79% companies audited by Big 8 testify to the existing competition in the free audit market and the high level of spending on Big 4 audit services.

In the UK, Taffler and Ramalinggam (1982) analyse the period 1978-1980, and the results show that 38% of companies are not audited by Big 4. In Germany, between 2005 and 2007, Hoelbacher (2009), Koehler *et al.* (2010) and Sattler (2011) analyse the 2005-2007 period, and Big 4 accounts for 93% of the total volume of firms. In Australia, Hay et Jeter (2008) and Ferguspm *et al.* (2014) marks a 90% mark for Big 4 audited firms in 2007. In Mexico, the Toscano and Garcia-Benau (2014) authors for the 2000-2007 period account for 97% for the four companies in Big 4. However, analysing the audit reports, there was an increase in the market share of Big 4 companies from 40.51% to 42.68% over the period 2011-2013. The year 2012 was the first year in which reporting under IFRS was mandatory. In the period 2011-2012, there was an increase of the market share by 2.36 percentage points, and in 2013 there was an increase of about 3 percentage points (Păunescu, 2015).

The objective of this study is the impact of the International Financial Reporting Standards on the audit market. In this respect, we have analysed all the audit opinions of the companies listed on the Bucharest Stock Exchange, type of shares: Premium. In order to observe the relationship between Big 4 / Non Big 4 and the type of audit opinion issued by them, a non-parametric Mann-Whitney test was applied.

This Mann-Whitney U test (Wilcoxon-Wilcoxon-Mann-Whiteny Test) is a nonparametric test of a null hypothesis that there is a probability that a single randomly chosen value from any sample may be lower than a value randomly selected from another sample. The Whitney test differs from the T test because it is not required to assume all normal distributions. This test is used to see whether two independent samples were selected from the same distribution. In addition to this test developed by Mann and Whitney, there are still other tests to formulate null and alternative assumptions, but we have chosen this test because it is best suited for the type of variables chosen.

The Mann-Whitney test is based on the following rules:

- Observations from both types of groups are independent.
- All answers are ordinals.
- In the case of the null hypothesis (H0), both distributions are the same.
- If the alternative hypothesis (H1), the distributions are not the same.

Our hypothesis is that the auditor's change does not change the audit opinion and that Big 4 has a considerable meaning on the audit market in Romania. The structure of the paper includes the Literature review, the research methodology and general conclusions of the study.

2. Literature review

As some researchers say in literature (Booklay and O'Leary, 2011), even if audit standards (ISA, English) and financial reporting standards (IFRS, English) differ substantially, they are closely related, forming a whole. With the growth of globalization, convergence with IFRS has become an increasingly necessary and used option. Starting with 2005, EC Regulation no. No 1606/2002 of the European Parliament and of the Council of 19 July 2002 on the application of international accounting standards which are only applicable to listed companies in the preparation of consolidated accounts has been put into effect with a view to increasing the transparency of financial reporting. Currently, these norms are accepted in 175 countries and their number continues to grow (IASB, 2018).

Global reporting has undergone considerable changes in the last decade of time. A major change was brought by the adoption of International Financial Reporting Standards. IFRSs are the main standards issued by the IASB to develop the quality of accounting principles (Chen and Zhang, 2010) and to standardize them globally to enhance the quality of financial reporting (Tyrrall *et al.*, 2007), risk reduction and capital cost Leuz and Verrecchia, 2000), facilitates financial investment and amplifies the growth of the global economy (Street and Bryant, 2000, Pacter, 2001, Ball, 2006, Pickard, 2007, Chen and Zhang, 2010, Peng and Bewley, 2013).

Audit firms assess the accuracy of financial statements based on GAAP and accounting standards (Arens *et al.*, 2007). Therefore, the audit increases the credibility of the companies issuing the financial statements, which can lead to capital and investment growth (Khurana and Raman, 2004), which facilitates compliance with the financial reporting legislation in force (Li *et al.*, 2007, Rezaee, 2009). Based on the DeGeorge study (2013), we can argue that determining the size of audit spending helps us to observe the effects of adopting IFRS as these are the most measurable cash outflows of audit firms.

The disclosure of standards on financial statements varies according to country policy, which hampers investors' decisions. These International Financial Reporting Standards (IFRS) respond to the current challenge of how financial statements are made. Applying IFRS as a global standard has led to the disclosure of the details and processes of professional judgment with a high impact during the presentation of the financial statements. In 2013, Widyawati and Anggraita, demonstrate that adopting IFRSs are inherent difficulties because the complexity of reporting needs to be complete. Therefore, the work effort is higher because it has to assess the financial statements, and the auditors need more time to complete the audit report. This latter report requires a time extension, as publication of financial statements may be postponed (Wulandari and Lastanti, 2015). Fair value is a source of risk that occurs with the adoption of IFRS and is present through the following standards: IAS 16 Property, IAS 40 Investment Property, IFRS 5 Non-recoverable Assets Held for Sale, IFRS 8 Operating Segments, IAS 36 Impairment of Assets, IAS 37 Provisions, Contingent Liabilities and Contingent Assets, IAS 38 Intangible Assets and IAS 39 Recognition and Measurement of Financial Instruments (Ahmed *et al.*, 2013). For example, IFRS 3 requires enterprises to recognize and measure at fair value all the purchased assets and liabilities, including intangible assets and contingent liabilities that have not been previously recorded by the acquiree (Glaum *et al.*, 2013).

Financial reporting includes all the accounting information that is audited. The efficiency of the financial reporting system (disclosure). In a jurisdiction or countries is an essential element for the development of efficient corporations, a transparent capital market, the overall development of the economy. However, the effectiveness of a financial reporting system depends to a large extent on a complex system of institutional factors (Ball *et al.*, 2000). The audit report, issued at the end of the audit mission, increases the trust of the stakeholders indicating that the financial statements are in line with the reference financial reporting framework (Habib *et al.*, 2014). In 2013, Berinde and Grosanu (2013) attest that Big 4 auditors are mostly elected by local/foreign investors as well as by seniors as they give greater credibility to audited financial statements.

As regards the adoption of IFRS, it has a considerable impact on the firm's costs (Hail *et al.*, 2010). Regulators argue that IFRSs enhance the quality and comparability of global financial reporting suggesting that these audit costs can be reduced as a first result of adoption (Kim *et al.*, 2012, De George *et al.*, 2013). In this respect, the adoption of IFRS increases the quality of financial reporting by reducing the number of errors encountered in the financial statements, limits managerial discretion, improves the accounting decision-making process, providing better information quality in line with current legislation (Barth *et al.*, 2008). These arguments lead voluntarily to reducing risk and audit costs (Kim *et al.*, 2012). Undoubtedly, the adoption of IFRS may lead to an increase in audit spending, taking into account the complexity of the audit, the quality of financial reporting and the legal regime in that country.

There are a number of studies investigating the adoption of IFRS, namely: in Australia (DeGeorge *et al.*, 2013), China (Chen et Zhang, 2010, Peng and Bewley, 2010), in the European Union (Kim *et al.*). Many studies on audit spending target the United States, Australia, Canada and Hong Kong while studies on emerging markets are limited. If a country benefits from "emerging market" status, it means that both active and passive funds that use the MSCI Emerging Markets as a benchmark can invest in listed companies in that country, leading to significant growth foreign investment (Musah, 2018).

The adoption of IFRSs leads to the following changes in the audit market, namely:

- Increases expenditure on audit services;

- The change of auditor and the concentration of the audit market;
- Receive the delay in issuing the audit report;
- The cost of own capital (Daske, 2006).

Taking into account the evolution of Romanian accounting, this was marked by the gradual transition from the implementation of the French inspirational accounting system to the period of intensification of the internationalization process. According to OMPF no. 1938/2016, companies whose securities may be traded on a regulated market are required to present IFRS financial statements (Ionaşcu *et al.*, 2007).

The evolution of Romanian accounting from 1989 to the present:

- The period 1990-1993 is represented by the application of the Soviet-type accounting system, during which the Accounting Law no. 82/1991.
- The 1994-1999 period was marked by the implementation of the French inspirational accounting system. In this sense, the state played a role as a normalizer but also a main user of the financial information, which led to an asymmetry over the information demand and supply relative to other users.
- The period 1999-2006 shows a gradual shift towards the harmonization of the accounting system with the International Standards and the European Directives based on the following Ordinances: 94/2001, 306/2002, 1876/2003, 3055/2009, and 1802/2014. Thus, this period is marked by the harmonization of the Anglo-Saxon accounting system in line with International Financial Reporting Standards.
- The period 2006-2018 is the period of intensification of the internationalization process in which the credit institutions that precede the companies listed on BVB apply the International Financial Reporting Standards.

From the above, it can easily be noticed that the business accounting reform was externally conditional, not being the main goal, the EU accession strategy. For example, at our country level, the impact of these standards, the IAS / IFRS on information quality, has not been tested at all. The reform was represented only by a set of legislative changes on accounting transactions, while ignoring the other components of the infrastructure of an efficient financial reporting system. Financial reporting standards are only one of the components that constitute the infrastructure of an efficient system of financial reporting. financial reporting (Holthausen, 2013).

3. Research methodology

In Romania, for the period 2016-2018, we analysed the companies listed on the Bucharest Stock Exchange, which traded Premium shares. In this regard, we reviewed the audit reports to see how Big 4 is in the financial audit market and what the report is. With regard to Non Big 4 companies, it is difficult to sign an audit opinion with reservations for a listed company, taking into account the desire of the company's management not to lose an important client. For Premium shares, current results show that the type of audit opinion is not correlated with the class of the audit company, contrary to other research studies where the Reserve Review recorded 85 percentage points for Non Big 4 companies. Analysing the audit reports of companies listed on the Bucharest Stock Exchange, it was possible to test the hypothesis that the change of the audit firm (from Non Big 4 to Big 4) is directly related to the change of audit opinion. This hypothesis was not validated during the analysed period, 2016-2018. The data was collected manually, inspecting all audit opinions for all premiums of the companies listed on the Bucharest Stock Exchange. In 2018, Deloitte issued two reservations with reservations and for one company it was impossible to express an opinion and just one non-Big 4 company issued a disclaimer. In 2017, Deloitte issued two reservations for the same companies as in the previous year, and two more reserved reviews for Non Big 4. In 2016, Deloitte issued three unqualified opinions and a single Non Big 4 company issued an opinion with reservations.

Table 1. **Audit opinion by type of auditor - year 2016**

Auditor_Type * Audit_opinion_2016 Cross tabulation

			Auditor_Opinion_2016		Total
			Unqualified opinion	Qualified opinion	
Auditor type	Non Big Four	Count	4	1	5
		% within Auditor_Type	80.0%	20.0%	100.0%
	Big Four	Count	16	3	19
		% within Auditor_Type	84.2%	15.8%	100.0%
Total		Count	20	4	24
		% within Auditor_Type	83.3%	16.7%	100.0%

(*Source*: Author's calculations)

In 2016, 80% of the non-Big Four auditors had unqualified opinion, and the remaining 20% of these were in reserve for the listed companies listed on the Bucharest Stock Exchange, a type of shares: Premium. Regarding the Big Four auditors, 84.2% had unqualified opinion and 15.8% reserved.

Table 2. **Audit opinion by type of auditor - year 2017**

Auditor_Type * Audit_opinion_2018 Cross tabulation

			Auditor_opinion_2017		Total
			Unqualified opinion	Qualified opinion	
Auditor type	Non Big Four	Count	3	2	5
		% within Auditor_Type	60.0%	40.0%	100.0%
	Big Four	Count	17	2	19
		% within Auditor_Type	89.5%	10.5%	100.0%
Total		Count	20	4	24
		% within Auditor_Type	83.3%	16.7%	100.0%

(*Source*: Author's calculations)

In 2017, 60% of the Non Big Four auditors had unqualified opinion, and the remaining 40% of them with a reservation for the listed companies listed on the Bucharest Stock Exchange, type of shares: Premium. Regarding the Big Four auditors 89.5% had unqualified opinion and 10.5% had reservations.

Table 3. **Audit opinion by type of auditor - year 2018**

Auditor_Type * Audit_opinion_2018 Cross tabulation

			Auditor_opinion_2018		Total
			Unqualified opinion	Qualified opinion	
Auditor type	Non Big Four	Count	4	-	4
		% within Auditor_Type	100.0%	0.0%	100.0%
	Big Four	Count	16	2	18
		% within Auditor_Type	88.8%	11.2%	100.0%
Total		Count	20	2	22
		% within Auditor_Type	86.95%	13.05%	100.0%

(*Source*: Author's calculations)

In 2018, 100% of the Non Big Four auditors had unqualified opinion, for the listed companies listed on the Bucharest Stock Exchange, type of shares: Premium. Regarding the Big Four auditors, 86.95% had unqualified opinion and 13.05% reserved. Furthermore, using the Hi-Square Test, it was verified whether there is a statistically significant association between the type of auditor and the audit opinion. The threshold of significance is 5%.

Table 4. **The Mann-Whitney test for verifying the association between the type of auditor and the audit opinion in 2016**

	Audit_Opinion 2016
Mann-Whitney U	45.500
Wilcoxon W	235.500
Z	-.220
Asymp. Sig. (2-tailed)	.826
Exact Sig. [2*(1-tailed Sig.)]	.891[b]

a. Grouping Variable: Auditor_Type

b. Not corrected for ties.

(*Source*: Author's calculations)

According to Table 4, the asymptotic significance associated with Mann-Whitney's statistics is 0.826 higher than 0.05, meaning that there are no significant statistical differences between the auditor's type in the audit opinion in 2016, at a significance level of 5 %.

Table 5. **The Mann-Whitney test for verifying the association between the type of auditor and the audit opinion in 2017**

	Audit_opinion_2017
Mann-Whitney U	33.500
Wilcoxon W	223.500
Z	-1.540
Asymp. Sig. (2-tailed)	.123
Exact Sig. [2*(1-tailed Sig.)]	.331[b]

a. Grouping Variable: Auditor_Type

b. Not corrected for ties.

(*Source*: Author's calculations)

According to Table 5, the asymptotic significance associated with the Mann-Whitney test statistic is 0.123, higher than 0.05, which implies that there are no statistically significant differences between the auditor's type in the audit opinion in 2017, at 5% level of significance.

Table 6. **The Mann-Whitney test for verifying the association between the type of auditor and the audit opinion in 2018**

	Audit_opinion 2018
Mann-Whitney U	45.500
Wilcoxon W	235.500
Z	-.220
Asymp. Sig. (2-tailed)	.826
Exact Sig. [2*(1-tailed Sig.)]	.891[b]

a. Grouping Variable: Auditor_Type
b. Not corrected for ties.
(*Source*: Author's calculations)

According to Table 6, the asymptotic significance associated with the Mann-Whitney test statistic is 0.826, value that is higher than 0.05, implying that there are no statistically significant differences between the auditor's type in the audit opinion in 2018 at a materiality level 5%. In this study, it was analysed whether companies changed their auditors had changes in the audit opinion during the period 2016-2018. Moreover, the change of the company that audited existed, but not to accede to a superior audit firm. Therefore, there was a change in the Big 4 auditing company that led to another audit opinion. Regarding Non Big 4, there was a change in the audit firm that did not lead to another audit opinion.

4. Conclusions

The main objective of this study is to observe the structure of the financial audit market for companies listed on the Bucharest Stock Exchange, focusing primarily on premium shares. Between 2016-2018, the results show that 81.81% of companies are audited by Big 4, while about 18.19% are audited by Non Big 4. A study by Hay and Jeter (2008) shows that in countries in the European Union, the percentage is much lower, because the Romanian market is not as concentrated as the other markets in the European Union. In this study, it is noted that the adoption of International Financial Reporting Standards implied a change of audit firms from Non Big 4 to Big 4. The total number of clients audited by Big 4 increased by 89.96%.

At the same time, it could be seen that out of a total sample of 25 companies, a single Big 4 changed its audit opinion. In this sense, if the old company that audited was Big 4, the next one will be in the same class and will not be a non-Big 4 company. In our case, in 2017, EY audited an unqualified audit opinion, although in the previous year, Deloitte issued an audit opinion with reserve. We can conclude that the change of the audit firm is not directly related to the change of audit opinion. The quality of the audit is represented by the ability of the audit firm to find and report errors at the customer's level, to make decisions by providing expertise on the client's information system and finally to provide an opinion conveyed in the audit report (DeAngelo, 1981).

Finally, it was possible to analyse and substantiate the idea that the unenforceable audit opinion is more and more common since 2012, as the adoption of the International Financial Reporting Standard became mandatory for all companies listed on the Bucharest Stock Exchange.

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Internal audit – A key process for diminishing the risk of fraud

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Abstract: *In the first part of the paper we take into consideration the role of the internal auditor in preventing and detecting fraud; in the second part an example of the potential causes of fraud that could be identified during internal audit missions is presented. The objectives of the internal audit missions can be settled within the auditable fields both from the area of operational audit as well as of the financial and conformity audit. Taking into consideration the fact that the frauds occur in different areas of the auditable fields and have to represent objectives of the internal audit, the auditor's level of involvement with respect to the prevention, detection and investigation of fraud is raised.*

Keywords: *Internal audit; internal control; risk assessment; risk of fraud.*

1. Introduction

Currently, an increased preoccupation at the level of the management system within an organisation is noticed; this being focused on increasing awareness with respect to the fact that the promotion of an awareness culture and risk optimisation, especially the fraud risk, represents a priority.

Fraud is considered as being a major risk at which companies are subject to. Fraud is far too common in today's environment, consuming an average of 5-10% of an organization's annual revenue.

Recent studies show that in approximately two thirds of the cases companies fail to detect the fraud cases that occur within these organisations, and more than 75% of the fraud cases were not reported (Fraud Survey Results, 2017). Considering that numerous fraud cases occurred that were identified within companies with high reputation or within companies that carry on their activities at international level, the attitude of companies with respect to these cases has changed. As such, the risk of fraud exists in almost any company, and its materialisation, to an extreme extent, could lead even to the closure of the company.

The internal audit activity plays a very important role with respect to the protection against fraud, playing a part both in monitoring risks, as well as in prevention and identification of fraud. The internal audit could assess in this way independently the fraud risks as well as the stage for the implementation of these measures by the company's management.

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2. Approach for the relationship between internal audit and fraud in the literature

Because of the fact that it is a current matter at international level, with significant implications in political, social, religious background and not only, financial fraud continues to raise interest for speciality studies that take into account its origin and implicitly the definition of this concept under different interpretations, factors that trigger it, different schemes under which it can be manifested, the risks that it might generate, prevention and combat measures and last but not least, the legal provisions in force that regulate these phenomena.

In the literature, the approach of fraud is somehow old. The initiator of research in this area was Edwin H. Sutherland from the University of Indiana, who invented in 1939 the term criminality of white collars, using this term in order to define criminal deeds of companies and natural persons that act in their professional environment.

Another author (Donald R. Cressey, 1953) defines the factors determining financial fraud (stimuli /pressures, opportunities, reasoning/attitude), in the shape of a fraud triangle, the three segments forming this triangle being represented by: the difficult financial pressure to live, the opportunity perceived by the criminal in the control system and a psychological process that would allow the criminal to reason his acts as being justifiable and not criminal.

Fraud became, during the past years, an international phenomena, because of the financial scandals that occurred in the United States of America (Enron, Worldcom, Tyco), Canada (Norbourg, Hollinger), Australia (Harris Scarfe and HIH), Europe (Parmalat, Vivendi) or Asia (Satyam, SKGlobal, YGX), that lead to the loss of confidence of investors in the business environment and even challenged the accountant profession in the United States to re-assess the basic accounting procedures (Apostolon & Crumbley, 2005).

At global level, the fraudulent financial reporting raised serious problems with respect to (Zabihollah & Rezaee, 2005): efficiency of corporative governance, adequate character and effectiveness of internal controls, seriousness of financial reports; quality of audits etc.

The most mediatized, but also the ones generating the highest prejudices are considered to be the frauds upon financial reports (Spathis, 2002, pp. 179-191). These frauds are made even by the persons responsible for the company's governance (Cordery, 2007, pp. 62-70) and envisages the handling of financial information or falsification of financial statements, in order to misguide investors and business partners with respect to the company's reliability (Chalevas & Tzovas, 2010, pp. 257-277). The schemes related to frauds performed upon financial statements and that are generated from within the company, as stated by Spathis, have in view the manipulation of transactions and operations developed within the main economic and financial processes: acquisitions – payments, sales – collections, treasury and treasury equivalents, financing, investments, production – storage and salaries of personnel. Most of the times, these frauds are made or are approved by the persons responsible with governance and the main fraud schemes have in view the following: obtaining fictive incomes in order to present to investors a favourable result, balancing of commercial debts accounts and delayed sales in order to distort the level of the turnover, dissimulation of expenses or debts in order to increase the level of incomes, classification of certain benefits in the operational area and of certain losses in the financing area, overestimation of assets to compensate some losses or to highlight certain latent values and omission or falsification of significant information (Karim and Slegel, 1998, pp. 367-375). The auditor must assess the fraud risk and test the existence of accounting manipulations upon financial statements. At the level of the company, the risk of fraud determined by the occurrence of manipulations of information from financial statements could be detected also with the help of certain specific indicators. Beneish (1999) proposes a series of such indicators that could be used in the enforcement of analytical procedures, such as: index for collection of commercial debts, gross margin index, asset quality index, turnover variation index, depreciation index, index related to the ratio between the turnover and the general administration expenses, index of debt degree and the index regarding the ratio between the total commitments (as acknowledged rights) and total assets.

In this respect, some authors (Hayes *et al.*, 2005) sustain the need to audit companies' financial statements based on the Policeman Theory. Starting from this theory, launched at the beginning of the 40', the auditor is perceived as a policeman who has the mission to discover the financial fraud at the level of the company.

Lenard *et al.* (2010) and Seow (2009) identify a series of psychological factors that are the base of fraud occurrence, and Bernardi (2009) performs a delimitation between frauds and errors (based on the volunteer character of frauds) and identify three types of fraud: frauds upon financial reports, denaturation of assets and acts of corruption.

International standards of audit (ISA 240) define financial fraud as „an intentional act by one or more individuals among management, those charged with governance, employees, or third parties, involving the use of deception to obtain an unjust or illegal advantage". ISA 240 presents the fraud risk as a probability of occurrence of fraudulent acts at the level of drafting financial statements or at the level of the patrimony of the audited company.

According to ISA 240, the auditor shall maintain professional scepticism in assessing and analysing the incidence of fraud upon financial statements, transactions, internal control system and other activities/systems that could influence his opinion in a significant extent (Robu, 2012). According to Soltani's opinion (2003), when the auditor performs an assessment of fraud risks he must take into consideration the events or contradictory aspects mentioned in the past, but this thing is difficult to the performed in case of new clients, especially when an opinion of the previous auditor could not be obtained. Failing to take into consideration aspects highlighted by the previous auditor could lead to the impossibility to detect financial frauds (Bernardi, 2009).

Another definition of fraud is given by Internal Audit Professional Norm 1210-A2A1: "all irregularities and illegal acts committed with the intention to misguide. Fraud can be committed in the benefit of the entity or against it, both by the employee's collaborator of the entity as well as by persons from the exterior of the company".

Based on the definitions assigned to the term fraud, and identified in the speciality literature, we can conclude that frauds present three common characteristics, as follows:

1. **Pressure**: That occurs in most cases because of financial constraints (such as: granting bonuses function of the fulfilment of efficiency criteria etc.);
2. **Opportunity**: Represents the occasion to commit fraud without being detected (defective management, inefficient internal control system etc.);
3. **Justification**: Represents the ability of the person committing fraud to identify a pertinent argumentation (for example: stealing money from the company's pay desk by the employee could be motivated by the awarding of a loan to this employee, the employee reasoning that the money shall be reimbursed).

Considering that the frauds could be the result of very complex operations or transactions, the impression could be induced apparently that displaying any professional scepticism of the internal auditor would be useless, situation in which the risk of failing to detect such a fraud increases, and the enforced audit procedures are not adequate any more. In addition, in case the frauds are committed by the personnel within the company's management or subject to the approval of the company's management, the risk of failing to detect frauds shall increase significantly, as a result of the fact that the management shall not agree with the implementation of an efficient internal control and, on the other hand, that, mainly, due to the legal obligations regarding the administration of the company, these persons are outside the boarders of susceptibility in view of committing acts that are contrary to the company's interest.

From the practical experience of the past years, it can be noticed, however, that intentionally or not, many entities perform operations or transactions that, due to their nature, should lead to the increase of the level of scepticism of internal auditors and not only.

3. Research methodology

In the first part of this section we take into consideration the role of the internal auditor in preventing and detecting fraud; in the second section an example of the potential causes of fraud that could be identified during internal audit missions is presented. The objectives of the internal audit missions can be settled within the auditable fields both from the area of operational audit as well as of the financial and conformity audit.

Taking into consideration the fact that the frauds occur in different areas of the auditable fields and have to represent objectives of the internal audit, the auditor's level of involvement with respect to the prevention, detection and investigation of fraud is raised.

Spathis (2002) states that the first warning sign regarding the existence of a fraud comes most of the times from suppositions, generated by certain anomalies discovered following the performance of control, receiving information from employees or third parties or due to hazard. More than this, he considers that the audit of frauds is the most effective method for detecting financial frauds, with possibilities of continuous improvement of the methodology and of the work instructions.

A more explicit detailing of the main stages if a mission for auditing frauds is carried out by Hassink *et al.*(2009) and envisages the following: acknowledgement by the auditor of the case that shall be analysed (collection of data, assessment of audit risk, identification of possible responsible persons for fraud, but also motivational factors), development of a hypothesis (a general one that could contain several working hypothesis), testing of the hypothesis (based on the instruments used in research), modification of the hypothesis (the raw hypothesis is refined so as to be able to address the auditor's requests) and acceptance or refusal of the hypothesis in order to take a decision and issue conclusions.

The 240 international standard clarifies the fact that the internal auditors are not obliged to have experience and expertise necessary to investigate fraud. The role of the internal auditor is to make sure that the risks at which the entity might be subject to are undertaken by the management and in its turn, the management shall implement adequate policies for minimising the fraud risk. As such, the auditor must not be seen as an investigator, but as a consultant with expertise in this area, having the role to issue recommendations so that the company's management shall manage effectively the fraud risks.

It should be stated that, even if in the past the role of the auditor was to prevent and detect financial frauds, ISA 240 makes notes with respect to the current role of the auditor, that is to obtain a reasonable assurance in respect of absence of significant denaturation caused by frauds or errors (Jaba, Robu, Balan & Robu, 2013). In the audit missions, the assessment of fraud risk and its implications upon the opinion issued by the auditor, are based on a series of audit evidence. The audit evidence is defined as being the totality of information used by the auditor in order to fundament the audit opinion. In order to be used within the audit mission, the audit evidence must be sufficient (measure of quantity, in the assessment of risk of fraud and audit) and adequate (they should correspond to the need and scope of the audit and also, they must consider the necessary quality through the manner in which evidence is obtained). As such, the more the quantity and quality of evidence documents shall increase, the more reduced the risk of fraud shall be and implicitly, the fraud risk, contributing in this manner to the formulation of real and correct conclusions (Morariu, 2006).

To summarise, the role of the auditor is to provide consultancy during the process of implementing anti-fraud policies and procedures, process that implies the following stages:

- **Assessment.** In this stage, the risk of being exposed to fraud must be assessed periodically by companies, with the purpose of identifying potential situations or fraud risks that must be prevented. Within this stage, the auditor could proceed to an assessment of fraud risk within the analysed process (discussions with the management, analysis of potential cases of fraud previously occurred, re-assessment of the cases of fraud that occurred within other companies with the same profile of activity etc.).
- **Prevention**. In this stage it is necessary to conceive certain procedures for avoiding potential fraud circumstances, with the purpose of diminishing the negative impact upon the company. The internal auditor can make sure if policies and procedures are implemented with respect to awareness of the employees' role in determining and reporting frauds as well as if there is a well-defined and effective internal control that would contribute to the minimisation of fraud risks.
- **Detection.** When the preventive measures are not sufficient it is necessary to implement techniques in order to detect frauds. The internal auditor can conceive different techniques that he should use during investigation of fraud,

such as: obtaining audit evidence comprising of documents, files, correspondences, records on video cameras etc.; interviewing employees that could provide significant details related to causes of fraud, the incriminated employee etc.

- **Investigation**. In this stage it is necessary to create a process for reporting frauds, as well as a coordinated approach for the investigation and implementation of adequate corrective measures and in due time. The internal auditor can identify which were the methods and techniques by means of which the fraudulent reporting occurred and last but not the least the impact or effects of this reporting on the company's activity (financial impact, reputational impact etc.). After the finalisation of these investigations, the internal audit has the role to review which of the control procedures have not been implemented or observed, to assess the efficiency of such procedures that could determine the timely detection and implicitly the review of future minimisation of the fraud risk occurrence.

4. Results and discussion

In table 1 an example of possible situations or factors in the area of financial audit as well as operational audit that could lead to the occurrence of fraud risks within the company and implicitly with respect to the reporting of fraudulent financial statements is presented.

Table 1. **Fraud risks that could be identified during internal audit missions**

Areas subject to audit	**Deficiencies that generate risk of fraud**	**Effects and risks of fraud factors/Recommendations for minimising risks**
Acknowledgment of incomes	Inexistence of a set of formalised approving rules for transactions. These thresholds are known at informal level, but there is no written document to certify them. Inexistence of a document that would detail the persons that are necessary to approve transactions function of their type.	Authorising and performing transactions by users outside the approved thresholds. A fraud risk exists by means of performing non-authorised transactions. It is necessary to develop and implement a document (Chart of Authority) with respect to the approval thresholds on categories of transactions (ex: contracts, discounts, acquisitions etc.). This document should detail the persons that should approve and to perform transactions function of their type and value.
	Decisions issued by the management by means of which minimum tariffs were settled, that must be observed irrespective of the season. This restriction could cause missing of opportunities of incomes, especially in the extra-season periods in which competitors decrease	Loss of income opportunities, especially during the extra-season periods. It is recommended to settle variable thresholds for the tariffs imposed, considering the seasonality of the activity. This modification of minimum imposed tariffs would allow the permanent and in real time alignment to the tariffs applied by local competition.

Areas subject to audit	Deficiencies that generate risk of fraud	Effects and risks of fraud factors/Recommendations for minimising risks
	the price below the tariff imposed by the management.	Risk of losing incomes and risk of fraud.
	Accessing of the operating systems by different employees, with rights that are those of the manager. This account sharing practice allows employees to use certain functionalities at which, normally, they would not have access to without approval (ex: cancellation of transactions, providing discounts).	Impossibility to provide traceability of actions. It is recommended to create and implement a system access security procedure.
	Existence of an offset between the date of commodities invoicing and the date of transferring the property right upon the commodities sold.	Acknowledgment of incomes in the accounting records prior to the transfer of property right. Over-assessing the incomes and financial result during the period under review.
	Offset recording of incomes, generated by failing to record the incomes from service rendering/delivery of goods during the accounting/fiscal period in which they were generated, but at a further date.	Failing to observe the principle of fiscal years' independence, according to which the incomes and expenses must be recorded in the period to which they refer to. Understatement/overstatement of incomes, respectively of economic and financial indicators reported at the level of a period under review.
	Failing to record or sub-evaluation of sales provisions for sales or discounts granted (ex: guaranties, discounts granted etc.)	Over-evaluation of incomes during the period under review
	Recording of additional transactions that occur after the end of the reporting period, in the current accounting period. This practice could be accompanied sometimes by the falsification or modification of accounting documents, in attempting to cover traces of fraud.	Recording of sales and/or collections in cash that occur following the reporting period, during the current period.
	Lack of segregation of responsibilities for the inventory process within the company (ex: person that records transactions with	Risk of fraud and loss of incomes. Principle related to segregation of duties stipulates the fact that no person should be responsible both for

Areas subject to audit	Deficiencies that generate risk of fraud	Effects and risks of fraud factors/Recommendations for minimising risks
	stocks is the same person that performs the inventory process).	performing accounting recording as well as related verifications. The general rule is that any transaction/record performed should be verified by an independent person.
Underlining the expenses	Failing to apply in a comprehensive manner the accrual accounting principles in recording of expenses (recording of these expenses at the date of invoicing and not during the period in which they occurred).	Wrongful presentation of financial results, by over-assessing profit, which has impact upon the computation of bonuses and dividends. The payment of the profit tax in a greater amount than the real one. Distortion of area managerial reporting presenting the financial status of the company. In order to diminish these risks, the company should implement a clear accounting policy, that would include also the obligation to register expenses during the period in which they occur, constituting provisions and preliminary (ex: commissions computed on an annual basis, services received in a period but invoiced in the following month etc.).
	Adopting a non-acknowledgment or under-evaluation policy for provisions (ex: provisions for litigations, for risks and expenses etc.)	Over-evaluation of the financial result by under-evaluating expenses. Reporting of distorted assessment economic and financial indicators.
	Enforcement of a cost capitalization policy related to investment works, that is not compliant with the legal provisions.	Non-adequate acknowledgment of costs that are capitalised, in the correct accounting period (modernisation works vs maintenance and repairing works). The effect is that of reporting under-evaluated or over-evaluated expenses.
	Reflection in accounting evidence of all expenses that are not based on adequate justifying documents (ex: registration of costs for contracted services but that were not rendered anymore, expenses reimbursement that contain fictive amounts etc.)	Recording of fictive costs has as effect reporting of a distorted financial result. Reflection of fictive transactions that are not based on a real fundament and that are not authorised, that could have as purpose failure to pay the profit tax.
Management of stocks	Lack of implementation of an effective security system in all stocks inventories of the company	Increased risk of theft, in the conditions in which these services undertake a limited level of liability for losses.
	Reflection in the accounting evidence of inventory	Maintaining an increased level of unauthorised stock outputs.

Areas subject to audit	Deficiencies that generate risk of fraud	Effects and risks of fraud factors/Recommendations for minimising risks
	adjustments (pluses, minuses) for which the nature is unknown.	The inventory minuses could be recorded as fictive consumptions.
	Failing to observe the segregation of duties within the process of stock inventory.	This deficiency determines the premises for the risk that the counted stocks are not the real ones that exist on a factual basis.
	The company did not assign persons that would assume full liability in respect of the control and management of commodities. Free access of unauthorised persons in the company's commodities inventories.	Existence of an increased risk of theft from the own employees. In case of acknowledging certain imputable losses, the commodities that are missing from the inventory cannot be imputed to the guilty persons, because of the fact that there is no clear responsibility for the inventory minuses. In this way there is a risk of recording in the accounting records additional costs with losses of stocks. For the purpose of diminishing the fraud risk, it is recommended to perform non-announced inventories performed by independent persons (ex: internal auditor).
	Documents related to stock acquisitions present information that do not reconcile (ex: value of orders differ from the invoiced value).	Risk of internal fraud, by accepting for payment invoices containing wrong price.
	Documents related to stock outputs (necessity notes, consumption notes, etc.) are not signed and authorised by responsible persons.	There is a risk to release stocks that are not approved by responsible persons or a risk to issue a double quantity. This situation could generate inventory minuses. In this sense it is recommended to implement internal procedures with respect to the authorisation of documents regarding inventory discharge of stocks.
	Lack of having in place an internal policy for granting and approval of discounts during trading of commodities, approved by the management, so that unjustified discount situations will not exist.	Risk of fraud if discounts with no real fundamental are granted.
	Existence of unexplained differences between the value of stock outputs and the value invoiced by the clients for stock outputs.	There is a possibility to record fictive stock consumptions, due to lack of control upon stocks. In such a case, it is indicated to monitor consumptions and perform periodic

Areas subject to audit	Deficiencies that generate risk of fraud	Effects and risks of fraud factors/Recommendations for minimising risks
		reconciliation of information in respect to stock inventory.
	The company does not hold an efficient software for stock inventory.	Increase of the risk of operating errors occurrence or of falsification of accounting records, reports etc. This situation could lead to reporting of fictive stocks.
	Existence of obsolete stock of commodities or stocks with no movement. Depreciated stock rotation speed. The company does not have an inventory per age of stocks with no movement.	Risk of presenting over-evaluated stocks in the financial statements. In such a case, the internal auditor cannot obtain a reasonable assurance that the stocks are presented in the accounting evidence at their real value.
	The company's stocks are not insured, by concluding an agreement with specialised companies.	In such conditions also there is an increased risk of theft from company's own employees, if the entity did not assign persons with clear responsibilities in stock administration.
Assessment of assets and debts	The company has not implemented a comprehensive policy for periodic re-assessment of certain categories of assets (tangible assets, etc.)	There is a risk to present in the financial statements over/sub-evaluated assets.
	Wrong presentation of the non-collected debts balance, function of the age of the debts, by cancellation of invoices and re-invoicing with a different date, that shall lead to the modification of the debts volume not collected in due time.	Masking the increase of the non-collected debts balance as well as avoiding to constitute provisions for debts with high risk of non-collection.
	The company does not have an internal procedure regarding the settlement of a threshold with the cash amounts that exist in the cash register office.	There is a risk to present final cash balances that are not real or are over-evaluated in an artificial manner (ex: use of cash prior to the cash being registered in the company's evidence, such as failing to register a sale).
	Failing to perform inventories with a certain regularity, of the existent stock and reconciliation with the cash-book.	In order to avoid such a risk, a protection measure could be segregation of duties – more employees are involved in the process and each of the employees has a limited responsibility.
	Non-adequate recording of debits in financial statements – the debits are incorrectly recorded as	Risk of over-evaluation of assets and under-evaluation of debts. Presenting in the balance sheet debts and receivables at a value that is not certain, liquid or exigible.

Areas subject to audit	Deficiencies that generate risk of fraud	Effects and risks of fraud factors/Recommendations for minimising risks
	assets or as a reduction of existing debts. Maintaining in the accounting evidence irrecoverable debts as well as prescribed debts.	In this respect it is indicated that the company would perform mutual third party points with the purpose of presenting debts and receivables at a real value.
Human Resourcing management and payroll	Recording of extra-balance account sheet, the transactions, with the purpose of hiding non-paid debts or non-collected receivables.	Risk of distortion of balance sheet debts and receivables, as well as risk of loss of incomes, due to failing to collect debts.
	Lack of correlation between the organisational chart provided by the HR department and discussions held with the company's management. Existence of persons on the payrolls that do not actually work within the company.	Risk of fraud and money laundering. In such a situation it would be necessary to develop and present on a periodical basis by the HR department to the management of a report that would highlight the budgeted personnel versus the actual personnel.
	Employment of personnel without having as basis justifying documents developed in an adequate manner (employment agreements). Unauthorised hiring or dismissal of staff. Unauthorised base salary levels or deviations from approved range and incorrect payment of salaries. Fictitious attendance or overtime.	Risk of fraud by over-assessing costs with salaries or recording of fictive costs. In this case it is recommended to adopt and implement internal procedures, approved by the entity's management with respect to the management of salary costs.
	Remuneration of personnel function of certain efficiency criteria and existence of a high personnel fluctuations.	There is a risk that the employees would attempt to manipulate results with the purpose of obtaining more consistent bonuses. Risk of internal fraud by over-assessing salary costs.
	The company has insufficient personnel employed and the rotation speed of employees is increased.	Risk of losing opportunity for incomes. If this deficiency is generated by the specifics of the entity's activity field, an analysis of the structure and value of the salary packaged offered in respect of the market shall be necessary.
	Subordination relationships between employees of the company between which	Personal relationships between employees could influence the internal decisions.

Areas subject to audit	Deficiencies that generate risk of fraud	Effects and risks of fraud factors/Recommendations for minimising risks
	there are relations as relatives.	It is recommended to create and implement a HR procedure (conflict of interests) that would stipulate the manner of approach in case personal relationships or family relationship exist between employees of the company. In such a case it is necessary that the internal auditor would make sure that there is no conflict of interests in the fraud investigation.
IT	Enforcement of an account sharing procedure (incorrect defining of access rights) generates the risk that a user would use certain functionalities or would modify options for which, normally, it should not have such a right.	There is a risk with respect to the impossibility to trach acts in case of human error. In this respect it is necessary to create and implement a procedure regulating system access security. In this procedure the correct manner of using the user accounts should be specified (for example, interdiction to use common or generic accounts etc.)
	Inefficient or low-quality IT support to the business.	Fraud due to lack of IT application controls.
	Acquisition of hardware/software with inadequate specifications.	Impossibility to run business due to systems failure.
	Existence of a high number of modifications of informatics programmes that are not documented, approved or tested. Lack of reconciliation between computer-based transactions, data basis, and financial accounts.	Incapacity of the auditor to obtain and reconcile information from the files because of the lack of documentation upon the content of records or programmes. Risk of internal fraud.

(*Source*: Compiled by the authors, 2019)

5. Conclusions

The role of the internal auditor is not that of investigating fraud, although in practice, companies consider that this is actually the responsibility of the internal auditor.

It is not expected that the internal auditors have the theoretical and practical experience in detecting fraud similar with that of a fraud expert. The audit procedures, even if they were conceived and implemented in an effective manner, do not represent a guarantee of the fact that the existent fraud shall be identified.

Considering the existence of limits inherent for the audit, there is an unavoidable risk that some deficiencies or significant risks would not be discovered. However, when the auditor has clues that frauds or errors that could lead to significant risks exist, then the auditor must extend his own control procedures with the purpose of confirming or infirming suspicions that he has, especially when there are additional specific risks for avoiding controls by the management that are not covered as part of the procedures performed.

On the other hand, there is a risk that any accounting and internal control system would become inefficient when facing fraud that implies the association of employees for committing it or the fraud performed by the management. Certain management levels could be in such a position that would allow them to ignore controls that could prevent similar frauds of other employees (for example, by requesting the incorrect registration of transactions by subordinates or by hiding transactions, respectively certain information related to these transactions).

Also, the lack of effective internal control and trustiness of employees towards the members of the management team, contribute most of the times to failing to detect certain operations or transactions that, by means of their nature, are susceptible of being considered frauds.

Within each organisation it is necessary that the management would implement and develop anti-fraud procedures, with the purpose of minimising risks of fraud occurrences. The company's management must be aware of the fact that fraud prevention should have priority over detecting it, both from the point of view of costs as well as of associated risks. The company should develop an internal policy by means of which each and every employee would report cases of fraud through specific channels, defined by each organisation.

Also, it is necessary to implement internal policies and procedures that would settle the role and responsibilities of the internal auditor in the detection, prevention and fraud investigation process. In such conditions, the internal audit department, if such a department is organised, must be perceived as a key link for the protection of entity against fraud. In this respect, the employees in this department should make sure that the entire personnel hold sufficient knowledge and abilities in order to be able to implement correct measures and decisions for the process of identification and management of fraud cases.

Companies that do not have a strong ethic culture, effective internal control systems, as well as an internal audit department that would permanently monitor and improve the internal control systems, shall be exposed to a major fraud risk. The management of these companies must focus upon enforcing adequate ethic programmes that would lead to minimising fraud risk within the company.

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PS3 LAW 1

Chairperson: Raluca Dimitriu, Bucharest University of Economic Studies, Romania

On company change in Romanian business law

Cristina Cojocaru

The role of the European Ombudsman in the European Union

Ioana Nely Militaru

The excessive publicity and formalities of the fiduciary operations in Romania, and their impact over fiducia

Günay Duagi

On company change in Romanian business law

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Abstract: *Sometimes, economic realities may require that a trading company set up and functioning according to the law be modified to adapt to the new realities. This change may concern either the increase or decrease of the share capital or another object clause or another legal form of the company. As these elements are mentioned in the constitutive act, the modification of the company requires the amendment of these legal documents, activity that can be carried out according to the law. Essentially, the concept of amending the constitutive act is in fact equivalent to changing the company itself, without however resulting in a new company with another legal person; it is the same company, but with elements altered from the previous situation.*

Keywords: *Company, Romanian business law, constitutive act, company change.*

1. Introduction

Once established, the company operates under the company's constitutive act and is subject to the legal provisions in the matter.

Often, however, during the operation of the company, the economic realities require certain modifications of the provisions of the constitutive act and implicitly of the company in order to make it either more competitive or to better respond to the interests of the associates or for any other reason.

In Romanian law, the subject matter of our concern is contained by Law no. 31/1990. As regards the modification of the company's articles (statute) and consequently of the company itself, of particular interest are the cases expressly covered by Title IV of the law, respectively the extension of the company's duration, the reduction or the increase of the share capital, as well as art. 113 of the same law concerning the change of the scope of activity of the company, the change of the form of the company, the relocation of the headquarters, the merger, the division, etc. (Cărpenaru, 2012).

In the literature (Căpăţâna, 1996; Turcu, 1992) as well as in the acts of modification of businesses, other cases were also included, the transfer of shares to a third party if the transmission was not authorized by the articles of association, the exclusion of an associate, the establishment of branches, the continuation of the company with the heirs of an associate, the continuation of the limited liability company with a sole partner when the second associate withdrew, deceased or has been excluded.

All of these cases are illustrative and therefore, the notion of company change includes all the situations when at some point some elements of the articles of the company are adjusted to suit the changes in the structure and nature of the company.

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2. Conditions under which the company's constitutive act may be changed

According to art. 204 of Law no. 31/1990, the memorandum of the company may be modified by decision of the general meeting, of the board of directors, the management respectively or by decision of the court.

- Amending the constitutive act by decision of the general meeting

Amending the memorandum by such decision is the usual way because it expresses the will of the associates who concluded the constitutive act and therefore are entitled to amend it.

The Law provides in principle that, in the case of joint stock companies and limited partnerships by shares, the decision to amend is made with the quorum and majority requirements for the extraordinary general meeting.

However, it should be noted that in the case of modification of the main object of activity, reduction or increase of the share capital, change of legal form, merger, dissolution or division, the decision is taken with the quorum stipulated by the law for the extraordinary general meeting, by a majority of at least two thirds of the votes of all the shareholders present or represented.

In the case of the limited liability companies, the decision to change the articles shall be taken by the vote of all associates, except where the law or the constitutive act provide otherwise.

Similarly, for general partnerships and limited partnerships, the modification of the constitutive act is made with the consent of all the associates.

- Amending the constitutive act by decision of the board of directors or the directorate respectively

Such an amendment is made in the case of joint stock companies and limited partnerships by shares because in these companies, according to art. 114 paragraph 1 of the law, the modification of the statutes may be delegated to the board of directors or to the directorate, respectively, by the provisions of the constitutive act or by the decision of the extraordinary general meeting.

It is true that such a possibility exists only in the case of the relocation of the company's registered office, the change of the scope of activity of the company, except the domain and the main activity and the increase of the share capital.

It should be noted that this power of the board of directors cannot be delegated to the managers of the company.

- Amending the constitutive act by court order

Amending the company's constitutive act by a court decision is an exceptional way and can only be applied if the court decides on the exclusion or withdrawal of an associate from the company. Moreover, it can only concern the structure of the share capital of the other associates.

If an associate is excluded or withdraws, obviously the structure of the share capital, as established by the constitutive act, changes and it is necessary to amend the act accordingly; in order to avoid further disputes among the associates and for efficiency purposes, the court may amend the constitutive act in this respect.

3. Form amending the constitutive act

According to the law, the changes to the constitutive act must take the form of a written document, a form also required for the memorandum of association.

Thus, the amending act may be a document under private signature acquiring a certain date at the time of its submission to the Trade Register Office, according to art. 5 par. (7) of the law.

In some cases, the amending act must be certified in due legal form and refers to the decisions of the general assembly or the decisions of the board of directors and the management respectively.

The authentic form of the amending act is mandatory in cases where the modification concerns the increase of the share capital by the contribution of a land, the change of the juridical form of the company into a general partnership or a limited partnership, or the increase of the share capital through public subscription.

The company amending act must be registered in the trade register and published. The registration is carried out by the administrators and the directors who submit to the trade register the amending act and the full text of the updated articles of association.

The change is subject to the legality control carried out by the director of the trade register, after which, if the legal requirements are met, the delegated judge will issue a resolution ordering the registration in the trade register.

If the change is made by court decision, its registration is made according to the court decision on the exclusion or withdrawal of the associate.

After the registration of the change, the trade register will submit it, *ex officio*, to the Official Gazette for publication of the changes in the company.

Art. 61 of the Law no. 31/1990 allows the possibility that any social creditor who considers himself affected by the amendment, as well as any interested party, to file a court action, requesting reparation of the damages allegedly suffered.

This challenge in court cannot be filed by the associates of the company. The latter may request the annulment of the decisions of the general meeting of the associates, in which case it is not only a claim for compensation for the damage suffered.

In the literature, it was shown that the challenge is not aimed at the cancellation of the amending act, but only at the compensation of damage and as such is not a remedy, but an action concerning liability (Carpenari *et al.*, 2006).

The judgment delivered in court challenge is subject only to appeal.

As some associates may consider themselves affected in their interests by a change to the instrument of incorporation, the law gives them the right, under certain conditions, to withdraw.

This withdrawal is different depending on the type of company.

Thus, in the case of a joint stock company or limited partnership with shares, the shareholders who have not voted in favour of the amendments may withdraw if the change concerned the modification of the main object of the company's activity, moving the company's registered office abroad, changing the legal form of the company, the merger or division of the company, according to art. 134 of the law.

In the case of limited liability companies, associates who disagree with the amendment may withdraw if this option is provided in the articles of association, according to art. 194 of the law.

However, it should be noted that even if the possibility of withdrawal was not provided for in the memorandum of association, the withdrawal can still take place, but not on the basis of this reason, but as a consequence of the will of the associate, i.e. on the basis of art. 226 of the above-mentioned law.

4. Cases of company changes

Law no. 31/1990 regulates a number of cases of amendment to the constitutive act that are more frequent and specific to the activity of companies, to which other, more general, changes to a legal document can be added.

Among the specific cases for amending the articles of association, we mention:

- Increasing the share capital

Sometimes, commercial and economic needs may require the increase of the share capital, especially since in such cases obtaining additional financial funds may be less burdensome than a bank loan or bond issue.

This measure is also required as a result of the accumulation of financial funds and out of the need to reassess the patrimony of the company, and sometimes it is even imposed by law when the minimum cap of the share capital is changed (Băcanu, 1996).

According to art. 210 of the aforementioned law, certain conditions are required to increase the share capital.

First of all, there must be a decision of the general meeting of associates or, as the case may be, of the board of directors and of the management, and the act be recorded in the trade register and published in the Official Gazette.

The decision of the general meeting of associates is taken with the quorum for extraordinary general meetings, with a majority of two thirds of the votes of the shareholders present or represented.

The increase in share capital can be done either through new contributions or without new contributions, but with the use of the internal reserves of the company.

When the increase is made by new contributions, either new shares are issued or the nominal value of the existing ones is increased.

- Issuing new shares

This measure increases the share capital in exchange for contributions in cash or in kind. As far as claims are concerned, they cannot be received if they are against third parties, but they can be received if they are against the company.

However, it is worth noting that this method cannot be used, therefore no new shares can be issued until the shares of the previous issue have been fully paid.

The new shares will have the same nominal value as the previous ones and may be purchased at that value or at a higher value, including the issue premium, which is intended to cover the issue expenses.

According to art. 216 of the law (Duțescu, 2007), a preference right is recognized when subscribing new shares to existing shareholders of the company.

It should be noted that the new shares will be offered for subscription to the existing shareholders, in proportion to the number of shares they own.

This right of preference is a right established by law and cannot be modified by the articles of association, but can be exercised within a term set by the general meeting or by the board of directors, if no other term has been established by the articles of association, but cannot be less than one month from the date of publication in the Official Gazette of the decision on the increase of the share capital.

After the expiry of the period for the exercise of the right of preference, the shares are subscribed to the public.

The law provides in art. 217 that the shareholders’ preference right may be removed or limited only by the extraordinary general meeting of the shareholders in order to facilitate, if it is so decided, the access of important shareholders.

In this case, in order to protect the shareholders, the decision will be taken with a special quorum, requiring the presence of shareholders representing three quarters of the subscribed share capital, with the majority of the shareholders’ votes.

The shares thus issued shall be paid at the date of subscription at least 30% of their nominal value while the remainder within three years from the date of publication in the Official Gazette of the resolution of the share capital increase.

When increasing the share capital by contribution in kind, the general meeting will propose to the delegated judge the appointment of experts for the evaluation of these contributions.

When the shares issued for the increase of the share capital are not subscribed by the shareholders, they are offered to third parties by public offer. The prospect containing all the necessary data for the tender will be drafted and submitted to the Trade Register for the fulfilment of the formalities required by the law.

- Increase in the nominal value of existing shares

It is a method of increasing the share capital by which the nominal value of shares held by shareholders is increased in exchange for contributions made by them, contributions in debts being excluded.

It is worth mentioning that this procedure for the increase of the share capital is decided by the general meeting by the vote of all shareholders except for the cases provided by the law.

- Increase of registered capital without new contributions

According to art. 210 of the Law, new shares may be issued by incorporating the reserves, with the exception of legal reserves, as well as the benefits or premiums, or by offsetting of liquid and exigible receivables from the company with its shares.

In this case, it is simple accounting operations without patrimonial growth of the company.

- Reduction of registered capital

Occasionally, due to a deficient activity, a part of the company's assets may be lost and unless it is restored or reduced, no distribution of profits can be made.

It may happen that registered capital can prove too large for the needs of the company; therefore, its reduction is necessary.

To reduce it, the law provided in art. 207 different procedures:

- decrease in the number of shares or equity interests. In this case, only the number of shares held by each associate is reduced but their nominal value remains unchanged.
- reduction in the nominal value of shares or equity interests. The reduction is based on the percentage of reduction of the share capital and the new value will be stamped on the old shares or equity interests.
- acquiring their own shares after which they are cancelled. This is an exceptional procedure when a certain number of own shares are acquired, in order to reduce the share capital by cancelling them.

If the reduction of the share capital is not determined by losses from the registered assets, the reduction of the share capital can be performed either by total or partial exemption of the associates from the due payments, or by the restitution to the associates of part of the contributions, proportional and calculated in proportion to the reduction of the share capital.

- Extending the duration of the company

The memorandum of association provides for the duration of the company and when this term expires the company shall dissolve.

If the associates find that the company is profitable, they may be interested in extending the duration of the company, which is performed by amending the articles of association, but only before the expiry of the initial period.

The amendment of the articles of association in this respect is carried out by the general assembly with the quorum requirement provided by the law for the extraordinary general meeting; the decision will be registered in the Trade Register and will be published in the Official Gazette.

It should be noted that according to art. 1931 of Civil code, the activity of the company is tacitly extended when, although the duration has expired, it continues to perform its operations, and the associates continue to carry out operations that fall within the scope of its activity and continue to behave as associates.

- Merger and division of companies

Merger and division are ways in which companies are restructured to adapt to new economic needs.

The merger can be achieved either by absorption – when several companies are dissolved without going into liquidation – after which the entire patrimony is transferred to another company, or by fusion – when all assets and liabilities are transferred to a new company created for this purpose.

Division is the operation by which a company, after being dissolved but not liquidated – transfers its assets to several companies, either to existing companies or to newly created companies.

The merger or division will be decided by each participating company under the conditions set for the modification of the company's constitutive act. It is based on the decision of the extraordinary general meeting of each company, which adopts a resolution empowering the managers or the directors to negotiate and draft the merger or division project.

Subsequently, the general meeting will adopt a final decision approving the merger or division.

The actual merger or division operations will be carried out according to the procedure and stages provided by law.

5. Conclusions

In companies' field, in general, the Romanian legislation has been constantly amended in accordance with the European rules in order to ensure the business environment legal provisions that are predictable, clearly formulated, and also that may be seen as easy to follow rather than too restrictive or a barrier in business development.

The law chapter on changing the company' constitutive act is a proof of the legislator intention - the legal rules are laying down a lot of options that the shareholders have in changing the act.

Furthermore, they are not imposing more restrictive conditions that those arising from the legal characters of the companies and therefore they are drafted in full consideration of the other legal provisions.

In conclusion, without excluding a constant update of the legal rules that is always necessary, it is the decision of the company's bodies to choose between the possibilities the law offers as long as the minimum legal requirements for chosen alternative are met.

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The role of the European Ombudsman in the European Union

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Abstract: *The European Ombudsman is presented in the context of the control function exercised by the European Parliament on the institutions and bodies of the Union. The European Parliament Observer / European Ombudsman elected by the European Parliament receives complaints from any citizen of the Union or from any natural or legal person residing or having its registered office in a Member State concerning cases of maladministration in the work of the institutions, Union agencies, with the exception of the Court of Justice of the EU in the exercise of its functions.*

Keywords: *Commission, European Parliament, inquiry, European Mediator/Ombudsman, petition, European citizen.*

1. Parliament's political control function

1.1. The European Parliament's control over the commission (Militaru, 2017; Valcu, 2010)

One of the functions of the European Parliament is to control the other institutions and bodies of the European Union (Boghirnea, 2013). This function is exercised in different ways. The EP's oversight function is primarily exercised over the Commission, as the EP elects the candidate for the post of President.

During the Commission's term of office, EP control is exercised as follows:

- May ask the Commission to submit any appropriate proposal on the matters it considers necessary for the drafting of a Union act implementing the Treaties (in this case, the EP decides by a majority of its component members);
- Parliament is fully informed by the Commission about the cooperation of this institution with the Member States and the coordination of their actions to achieve the objectives of the Treaty as part of industrial policy (Article 173 (2) TFEU);
- In the context of the possibility for the members of the Commission to attend all sittings of Parliament, they are heard, at their request, on behalf of the Commission, under an oral procedure (Art. 230 par. (1) TFEU];
- The Commission is required to respond orally (via one or more members) or in writing to the questions put to it by the European Parliament or its members (Art. 230 par. (2) TFEU];
- The Commission presents the annual general report to the European Parliament, which is debated in public (Article 233 TFEU). These reports constitute for Parliament a source of information on the work of the Union's institutions.

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- The Commission is accountable to the EP as a collegial body (Article 234 TFEU). Thus, the EP, notified by a motion of censure on the work of the Commission, can only pronounce on this motion only after at least three days after its submission and only by open vote.

1.2. Parliament may set up temporary committees of inquiry to examine the alleged breach of the rules of law or the cases of maladministration by the Union institutions or other bodies of the Union

To this end, the EP, at the request of one quarter of its members, may setup a temporary committee of inquiry to examine, without prejudice to the powers conferred by the TFEU on other institutions or bodies, offices or agencies, the alleged infringement of the rules of law or administration faulty implementation of Union law, unless the facts are examined by a court and as long as the judicial procedure is not completed (art. 226 par. (1) TFEU].

Any citizen of the Union, such as any natural or legal person residing or having its registered office in a Member State, has the right to address to Parliament, individually or in association with other citizens or other persons, a petition on a subject by the fields of activity of the Union and directly concerned by it (Article 227 TFEU, see also Art. 201 203 of the EP's Rules of Procedure).

This right was introduced by TMs in TCE by art. 21, now reformulated by Art. 20 par. 2 lit. d) TFEU, according to which „citizens of the Union enjoy, inter alia, the right to petition the European Parliament, to address the European Ombudsman and the right to address the Union institutions and consultative bodies in any of the Treaty languages [1], and to receive an answer in the same language [under art. 20 par. 2 lit. d) and art. 227 TFEU].

Petitions must directly address the petitioner [2] and the petition should address a subject related to Union law.

2. European Ombudsman

2.1. Legal basis

The European Parliament appoints the European mediator, called Ombudsman [3] for exercising the petition rights mentioned above [4].

The European Ombudsman is governed by Articles 20, 24 and 228 of the TFEU and Article 43 of the Charter of Fundamental Rights of the European Union.

The Statute and functions of the Ombudsman were defined in a Parliamentary Decision of 9 March 1994, adopted after consultation of the Commission and with the approval of the Council [5]. Subsequently, the Ombudsman adopted the implementing provisions for this decision. The procedures for the election and dismissal of the Ombudsman are laid down in Rules 219 to 221 of Parliament's Rules of Procedure.

The European Ombudsman's Institution was created by the Maastricht Treaty (1992), which seeks to:

- improve the protection of citizens in cases of maladministration in the work of EU institutions, bodies, offices or agencies;
- and strengthen the openness and democratic control of the process of decision-making and governance at the level of the EU institutions.

2.2. Election procedure and Ombudsman's mission

Regarding the mandate of the Ombudsman, according to art. 228 par. 2 TFEU, the following is indicated:

- The Ombudsman is elected, after each EP election, during the term of the parliamentary term for five years;
- his term of office may be renewed;
- may be dismissed by the Court of Justice of the European Union at the EP's complaint if it no longer fulfils the conditions required for the performance of its duties or has been guilty of serious misconduct.

Thus, at the beginning of each parliamentary term or in the case of the death, resignation or dismissal of the Ombudsman, the President of the European Parliament shall issue a call for candidatures for the appointment of the Ombudsman and set the deadline for their presentation. Nominations must be supported by at least 40 Members of the European Parliament who are nationals of at least two Member States. Applications are sent to Parliament's Committee on Petitions to examine their admissibility. The Committee may ask to hear the nominees (Sokolska, Marzocchi, 2018). A list of admissible applications is then submitted to Parliament's vote. The Ombudsman is elected by a majority of the votes cast.

The Ombudsman exercises his functions, according to his mandate, in complete independence. It does not request or accept instructions from any government, institution, body, office or agency. It will therefore only be subject to the statute and general conditions governing the performance of its functions as determined by the European Parliament, which shall act by way of regulations on its own initiative, in accordance with a special legislative procedure, after the Commission has given its opinion and with the approval of the Council [7].

During the exercise of the mandate, the Ombudsman is not entitled to exercise any other professional activity, whether paid or not (Article 228 (4) TFEU).

Ombudsman (Sokolska, Marzocchi, 2018):

- must meet the necessary conditions in the country of origin for the exercise of the highest judicial functions or have the necessary competence and experience to perform the functions of Ombudsman;
- must provide a guarantee of total independence.

The European Ombudsman conducts inquiries into cases of maladministration in the work of EU institutions, bodies, offices and agencies either on his own initiative or on the basis of complaints from EU citizens.

He is entitled to receive complaints from any citizen of the Union (Rădulescu, 2012) or from any natural or legal person residing or having its registered office in a Member State concerning cases of maladministration in the work of Union institutions, bodies, offices or agencies, the exception of the EU Court of Justice in the exercise of its functions. It investigates the complaints received and draws up a report on them (art. 228 par. 1 par. (1) TFEU].

Only in appearance there is a conflict of competence between the Parliamentary Commission and the Mediator, in reality the first deals with petitions claiming irregularities in the Member States, while the Mediator only deals with petitions concerning the „abuses" committed by the institutions, bodies , offices and agencies of the Union, for example: unjustified abstentions, contradictory action with legal obligations, discrimination, abuse of power, illegal or unlawful refusal, unfairness, negligence (Fabian, 2014, Diaconu, 2011).

The Ombudsman's task is to carry out investigations which he considers justified on his own initiative [8] or on the basis of complaints addressed to him directly or through a Member of the European Parliament [9] unless the alleged facts are or have been the subject of legal proceedings [art. 228 par. 1 par. (2) TFEU].

If the Ombudsman has found an instance of maladministration, he shall refer the matter to the institution, body, office or agency concerned, which shall have a period of three months to communicate his point of view, and shall then report to the Parliament and the institution concerned. As regards the outcome of these investigations, the person who made the complaint is also informed [Art. 228 par. 1 par. (2) TFEU].

Mismanagement is inappropriate or inappropriate management and corresponds to situations in which an institution does not act in accordance with applicable law, fails to observe the principles of good administration or violates human rights, for example: administrative irregularities, unfairness, discrimination, abuse of power, lack of response, non-disclosure of information, unjustified delay [10].

Each year the Mediator presents a report to the Parliament on the results of his investigations (art. 228 par. 1 par. (3) TFEU].

2.3. Ombudsman's competence (Sokolska, Marzocchi, 2018)

The Ombudsman deals with cases of maladministration in the work of EU institutions, bodies, offices or agencies.

a. The Ombudsman may decide that there are instances of maladministration where an institution fails to observe: fundamental rights, rules and legal principles, principles of good administration.

In particular, the Ombudsman's inquiries concern: transparency/accountability, service culture, respect for procedural rights, proper use of discretionary powers, respect for fundamental rights, recruitment, good management of EU staff issues, sound financial management, ethics, public participation in the EU decision-making process Sokolska, Marzocchi, 2018).

About one third of the Ombudsman's investigations annually concern the lack of information or the refusal to provide them.

The Ombudsman has the following duties:

- To perform its functions in full independence, in the interest of the Union and its citizens;
- Not to require or accept instructions from any government, institution, body, office or entity;
- To refrain from any act incompatible with the character of his / her duties;
- Not to exercise any other political or administrative function or professional activity, whether remunerated or not.

However, a number of issues do not fall within the Ombudsman's area of competence, namely:

- Actions of the CJEU and of the Tribunal acting in the exercise of their judicial functions. Ombudsman's inquiries on the CJEU relate only to non-judicial activities, such as, for example, auctions, contracts and staff cases;
- Complaints against local, regional or national authorities, even if these complaints relate to EU-related issues; actions of national courts or national mediators. The European Ombudsman is not a court of appeal against the decisions taken by these bodies;
- Cases which have not previously been the subject of appropriate administrative procedures within the bodies concerned;
- Complaints against European officials regarding their behaviour.

As regards investigatory powers, the Ombudsman is entitled to request information from:

- Institutions and bodies which are required to provide the data they require and to grant access to the files concerned, unless they cannot do so for well-founded reasons relating to the respect of the secrecy of the thereof;
- Officials and agents of the institutions and bodies concerned, who, at the request of the Ombudsman, are required to testify while continuing to respect professional secrecy;
- Authorities of the Member States which are required to provide this information, unless their provision is prohibited by a statutory or regulatory provision; however, even in such cases, the Ombudsman can obtain that information if he undertakes not to disclose it.

If he does not get the assistance he needs, the Ombudsman informs Parliament, which takes the necessary steps. The Ombudsman may also cooperate with his counterparts in the Member States, subject to compliance with national law. However, if the information relating to criminal law is proven, the Ombudsman shall immediately inform the competent national authorities and the European Anti-Fraud Office (OLAF). Where appropriate, the Ombudsman may also inform the institution of the Union in respect of which the official or agent concerned is answerable.

As far as possible, the Ombudsman agrees with the institution or body concerned to find a solution that would please the complainant. Where the Ombudsman finds an instance of maladministration, his recommendations shall be forwarded to the institution or body concerned, which shall have a period of three months in which to make his views known. If the institution does not accept the proposed recommendations, the Ombudsman may draw up a special report which he submits to the European Parliament. In turn, the European Parliament can draw up a report on the special report presented by the Ombudsman. Finally, the complainant is informed by the Ombudsman about the outcome of the investigation, the opinion of the institution or body concerned and his personal recommendations.

2.4. Ombudsman's activities [11]

Jacob Söderman was the first Ombudsman, and he served two mandates from July 1995 to March 31, 2003. During his term of office, the Parliament (in 2001) approved the Code of Good Administrative Behaviour. This is a code of procedure which takes into account the principles of European administrative law contained in the case-law of the CJEU and is also inspired by national legislation. He serves the Ombudsman when he examines a case of maladministration, thus supporting the provisions of the Code in conducting his inquiries. In addition, this Code serves as a guide and resource for EU officials, encouraging the application of the highest standards of governance.

From April 2003 to March 14, 2013, he was European Ombudsman Nikiforos Diamandouros. He resigned on 14 April 2013, the resignation taking effect on 1 October 2013.

On 11 July 2006, the Ombudsman presented a proposal to amend the Statute of the Ombudsman, which was supported by the Committee on Petitions, the Parliament and the Council. The Statute has been amended to strengthen and clarify the role of the Ombudsman, for example, with regard to access to documents and the forwarding of information to the European Anti-Fraud Office where they could fall within its remit.

On 1 October 2013, following his election by the European Parliament at the July 2013 part-session, he was elected mediator to take on the role of European Ombudsman, Emily O'Reilly, Irish of origin. He was concerned about increasing the visibility of the role of the Ombudsman, paying particular attention to important aspects for citizens, for example: ensuring greater transparency in lobbying, expert groups, EU agencies (European Border Police and Coast Guard Agency, Frontex) and international negotiations (the Partnership Transatlantic Trade and Investment, TTIP), as well as improving the rules on alert in the public interest and the European Citizens' Initiative. In 2014, following the elections to the European Parliament, Emily O'Reilly was reconfirmed for a new five-year term. It proposed to continue to implement its "Towards 2019" strategy, which focuses on three aspects: impact, relevance and visibility.

The European Ombudsman found that the lack of transparency of the Council of the European Union affects the EU's decision-making process through maladministration and "undermines the right of citizens to make elected responsible".

"It is almost impossible for citizens to follow the legislative discussions in the Council among the representatives of the national governments. This "behind closed door" approach risks alienating citizens and feeding negative feelings", said Emily O'Reilly, currently in office of the European Ombudsman.

This report outlines the findings of an EU Legislative Process inquiry into which the European Ombudsman said he "inhibits the control of EU law projects" [11].

“The Ombudsman specifically criticizes the Council’s systematic non-compliance with the identity of the Member States who take a position during discussions on widespread legislation and practice to disproportionately mark documents that are not intended for external circulation”, the report said.

This approach is inconsistent with what the Council expects with regard to legislative transparency.

The Ombudsman asks the EU Council to systematically record the positions of the Member States in the Congregation’s working groups and at the meetings of the Ambassadors of the Coreper and in principle make these documents available to citizens in due time.

3. Conclusions. The role of the European Parliament (Sokolska, Marzocchi, 2018)

European Ombudsman covers the following areas: transparency, accountability and decision making process including ethics, management of public funds of the European Union, fundamental rights, procedures and practices, administrative issues, European Union staff [12].

Although he is totally independent in the exercise of his functions, the Ombudsman is a parliamentary ombudsman. The Ombudsman has very close ties with Parliament, being solely responsible for the election of the Ombudsman. Thus, it can ask the CJEU for its dismissal, lay down the rules for the exercise of its functions, aid in investigations and receive the Ombudsman’s reports. In accordance with the Rules of Procedure (Article 220), the Committee on Petitions draws up every year a report on the Annual Report on the activities of the Ombudsman. In these reports, the Committee on Petitions has repeatedly underlined that the EU institutions should cooperate fully with the European Ombudsman in order to increase the Union’s accountability and accountability, in particular by implementing its recommendations.

In this respect, the European Ombudsman published a list of recommendations aimed at adopting rules for the provision of legislative documents over two years, improving the accessibility of the public register of documents and developing an up-to-date web page for each ongoing legislative proposal [11].

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[1] In one of the languages mentioned in Art. 55 TEUs (23 languages are envisaged).

[2] Where a petition is signed by several natural or legal persons, the signatories designate a representative and alternate representatives who, under the EP’s Rules of Procedure, are considered to be petitioners (Article 201 (3) of the Rules of Procedure).

[3] See for details art. 204 206 of the EP’s Rules of Procedure. For the Obadian’s Historian, see https://www.proiecte.ro/stiinte-politice/ombudsmanul-european-58491

[4] As a denomination, the institution is equivalent in Romanian law to that of „the lawyer of the people” (regulated by Law 35/1997), but not as a totality of functions. It does not represent institutionalization of mistrust in the administration, but fulfils a mediation

function; see G. Fabia, op. cit., p. 179; M. Vlad, Ombudsman in Comparative Law, Ed. Servo Sat, Arad, 1999.
[5] OJ L 113, 4.5.1994, p. 15 - as amended by Decisions of the European Parliament of 14 March 2002 - OJ L 92, 9.4.2002, p. 13 and of 18 June 2008 - OJ L 189, 17.7.2008, p. 25
[6] See Ina Sokolska / Ottavio Marzocchi, 10-2018.
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[7] The Council, by Decision no. 94/114 of 7 February 1994 approved the Parliament's decision on the regulations and general conditions governing the performance of these functions (OJ L 54/1 of 25 February 1994). The Act was amended by Parliament's Decision no. 2002/262 of 14 March 2002 (OJ No L 92/13 of 9 April 2002). The Commission's Communication (2002 / C 166/03) to Parliament and the mediator set out rules on relations with the complainant in relation to infringements of Community law (OJ C 166/3 of 12 July 2002). For a case in the area of decision no. 94/114, see CPI C209 / 00, Frank Lamberts v. European Mediator, hot. of 10 April 2002 in ECR, 2002, 4 II, 2203 2236; see O. Manolache, op. cit., p. 107. Ioana-Nely Militaru, Dreptul Uniunii Europene, op. cit. p. 208.
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G. Fabian, Community Institutional Law, Legal Sphere Publishing, 2004, p. 180; Nicoleta Diaconu, Law of the European Union, Treaty, ed. II, Ed Lumina Lex, Bucharest, 2011, p. 176, 177.
[8] The mediator may also be heard ex officio, but it is assumed that the information he holds for opening the proceedings has a formal Community source; see O. Manolache, op. cit., p. 106. Nicoleta Diaconu, op. cit. p. 177.
[9]The general conditions for the exercise of the position were established by Decision no. 94/262 of 9 March 1994 of the Parliament - J. Of. L 113/15 of 4 May 1994.
[10] https://e-juridic.manager.ro/articole/ombudsmanul-european-2229.html
[11]https://www.caleaeuropeana.ro/ombudsmanul-european-ii-recomanda-consiliului-ue-sa-transparentizeze-procesul-legislativ/
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The excessive publicity and formalities of the fiduciary operations in Romania, and their impact over *fiducia*

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Abstract: *The publicity requirements of fiduciary operations are quite complex and burdening in Romania. Unlike its corresponding contract in the Anglo-Saxon jurisdictions, the trust, fiducia must be registered in the National Registry for Movable Securities (and in the Land Book, if the case), in the registries of the fiscal authorities, must be signed in front of a notary public (in authentic form), and must be disclosed every time towards third parties if the contract so provides. Considering the above, we consider that one of the main reasons why fiducia has not been used so far in Romania is the fact that the formalities requirements are too expensive and time consuming. In terms of opposability towards the third parties of the fiducia, the Romanian Civil Code provides also strict requirements closely linked to the publicity requirements. In this respect, the fiduciary contract may be deemed as not opposable if the publicity requirements are not observed with the legal consequences for the contractual parties, and for the third parties such as beneficiaries of mortgages set up before the fiduciary contract has been concluded. Considering the above, the objective and intended contribution of this research is to raise awareness and questions of the publicity conditions of the fiduciary operations, to analyse the implications of such requirements over the use of fiducia in Romania and to propose de* lege ferenda *amendments of the current legal provisions.*

Keywords: *Publicity of fiduciary operations, fiduciary opposability, fiduciary operations, fiduciary formalities, fiduciary contract.*

1. Introduction

Fiduciary operations were introduced by the new Civil Code in Romania, which entered into force in 2011. However, since then, despite the fact that this contract has been recognized as one of the biggest innovation of the new Civil Code, this institution has not been used at its true potential, according to the number of fiduciary registration in the National Registry for Movable Securities.

We consider that one of the most important reasons for this situation is the fact that the Civil Code imposed very strict, time consuming and costly formalities for publicity of this contract, as we will detail below. In this respect, the potential users can be detracted from the important benefits of *fiducia,* when they become aware of the formalities necessary to conclude such an agreement.

Also, this situation becomes even more complicated when we consider the third parties that could have previous interest in the fiduciary assets, such as a third party benefiting

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from a mortgage over these assets. In this case, this party would be interested to make this operation not opposable to him for various reasons.

One of the most critical aspects of the formalities necessary for *fiducia* is the requirement to be concluded in an authenticated form in front of a public notary. Considering the cost and timing of such operations, it is understandable why potential users of *fiducia* are reluctant to use it. It is not clear why the legislator chose to apply this formality even for fiduciary operations over movable assets, considering that the level of security for this operation would have been high enough. In this respect, *de lege ferenda* we would propose that the fiduciary contract should be signed only under private signature without the need to be notarized.

Another important aspect that makes the fiduciary contract unappealing for most potential beneficiaries is the fact that this contract must be registered with the fiscal authorities. The non-observance of this registration would make the operation null and void (absolute nullity of the contract). Requiring that the fiduciary contract is registered with the tax administration is an "excessive requirement in our law" (Stoica and Cristea, 2011:4). We consider that the fiscal registration should not have an impact over the validity of the contract, but only over the amounts that the fiduciary and/or the beneficiary should pay in relation to this contract.

There are also other publicity and opposability measures imposed by the Civil Code that could have been more flexible that we will analyse below.

As an introductory note we consider that these excessive measures have not taken into consideration the entire fiduciary context and mechanism. In this respect, in order to understand why such publicity measures are not necessary we should look at the types of fiduciary. As fiduciary position can be held only by authorized institutions which are supervised by authorities, all these measures (meant to secure the rights of the settlor and of the beneficiary) should have been less strict, as these institutions are anyway under strict regulation considering the legislation in force.

Another introductory note refers to the separation of patrimony (Baias, 2012), enacted in the Civil Code which provides sufficient comfort to the beneficiary in terms of security. In this respect, considering that the fiduciary assets are separated from the other assets of the fiduciary, in a distinct patrimony, affected by the achievement of a goal (Viziteu, 2012), the risk that rights of the beneficiary would be affected is quite slim.

In this respect, considering the complexity of *fiducia*, being called by some foreign authors a hybrid institution (Koessler, 2012), the legislator should have tried to make it easier to use and implement and not make it even more complex (due to publicity and formal measures). Also, the way *fiducia* is structured and regulated in Romania offers sufficient assurance and protection to the beneficiary while imposing additional publicity, opposability and formalistic measure has made this contract virtually inapplicable in many cases. Also, it is worth mentioning that the beneficiary is in a similar situation to the beneficial third party under the stipulation for another (in Romanian "stipulație pentru altul") (Florea, 2013). Also, in a comparative analysis, a Romanian author rightly mentions that the legislator created a logically applicable link between *fiducia* and the administration of the assets of another (Moreanu, 2014).

Considering the above regarding the publicity and opposability of the fiduciary operations in Romania, we raise the following questions which we would try to answer throughout this study: Why the legislator chooses to impose such a strict publicity over *fiducia*? What are the advantages and disadvantages of these publicity/formalistic measures? How these excessive measures did affect the use of *fiducia* in Romania? What can be done to unlock the use of *fiducia,* used very rarely due also to the excessive formalistic measures?

2. Publicity, fiscal registration and formalities of fiduciary operations

The Civil Code provides the following rules for the publicity of the fiduciary contract, according to art. 780: “Under the penalty of absolute nullity, the fiduciary agreement and its amendments must be registered at the request of the fiduciary, within one month from the date of their conclusion, to the competent fiscal body to administer the amounts owed by the fiduciary to the general consolidated state budget”.

The provisions above represent the rule of the requirement to register the fiduciary contract with the fiscal authorities. However, four aspects must be further clarified and analysed.

Firstly, it is quite obvious the drastic sanction that is applied for non-observance of this requirement. In this respect, the law provides that the fiduciary contract is null if the fiduciary does not register this agreement with the fiscal authorities. We cannot think of any similar provisions that provide such a drastic penalty for non-observance of a formality to register a deed with the fiscal authorities. Most of the legal provisions stipulating similar fiscal registration requirement impose a fine or similar penalties, but not absolute nullity of the agreement. It is not very clear why the legislator chose to impose such a drastic measure. We could think of the case where the legislator tried to prevent the cases where the fiduciaries tries to enter into fiduciary agreement in order to elude the law or to make some illicit activities such as money laundering or terrorist financing. However, if we could have seen this risk possible under the trust agreement (where the fiduciary could be any person) in case of fiduciary mechanist (where the fiduciaries can be only authorised and supervised qualified persons such as credit institutions, brokers, insurance companies, lawyers and public notaries) this risk is very low.

Secondly, we observe that the law imposes that not only the initial fiduciary agreement must be registered with the fiscal authorities but any subsequent amendments. In this respect, the law imposes the same sanction (absolute nullity) if the amendments are not registered. Considering the proportionality principle, it is very difficult to understand such a requirement, as, in practice, most of the amendments are made to certain aspects which are not substantial for the agreement and for the fiscal authorities. Again, this requirement would be very difficult to implement in practice. Several questions may appear in practice: All the amendment must be registered with the fiscal authorities, even if these changes are not substantial? Is it necessary to registered again the fiduciary agreement for each and every minor amendment? If the fiduciaries do not make the registration within one month the initial fiduciary contract is considered null or just the amendment?

The above are just few questions that arise from the article regulating the fiscal registration.
Thirdly, the one-month term seems very strict for a contract that can be concluded for a period of 33 years. In this respect, considering the fiscal cycle that is usually of one fiscal year, the regulation seems to impose this registration in a very fast pace. Also, another aspect that can be controversial refers to the person that must register the fiduciary agreement with the fiscal authorities. Thus, even if the Civil Code provides that he fiduciary is required to make this registration, we consider that if the fiduciary does not fulfil this requirement, the settlor or the beneficiary should be able to make all the measures in order to implement these steps considering the sanction provided by law. However, as the law does not provide such possibility we are interested to see how this case will be settled in practice.

Fourthly and finally, we refer to the competent body of the fiscal authority. In this respect, the law provides that the registration must be done with the fiscal organ competent to manage the amounts owed by the fiduciary to the consolidated general state budget. This provision shows in fact that the essential element of the fiduciary mechanist is that all the amounts generated by the fiduciary agreement should be paid and taxed by the fiscal authority of the fiduciary.

Furthermore, the Civil Code in the same article provides the following: "When the fiduciary patrimony mass includes real estate rights, they are registered, under the conditions provided by the law, under the same sanction, to the specialized department of the local public administration authority competent to administer the amounts owed to the local budgets of the territorial-administrative units where is the property, the land book provisions remain applicable".

This provision is important as it recognizes the fact that the immovable assets are taxed by the same fiscal authority which is allocated to the area where the immovable asset is located. What is worth mentioning however, is the fact that the legislator provides the same sanction if the immovable assets are not registered also with this competent fiscal authority (i.e. absolute nullity).

Furthermore, we raise awareness to a provision that could generate confusion in practice. Thus, the Civil Code allows that the fiduciary contract does not provide specifically the beneficiary. In this respect, art. 779 of the Civil Code (stipulating the content of the fiduciary agreement) provides that the fiduciary could be expressly mentioned or can be determinable (providing at least the rules for its determination). Linked with this provision (and in its application) art. 780 (3) provides that "Subsequent designation of the beneficiary, if not specified in the trust agreement, shall be made under the same sanction by a written act registered under the same conditions". This provision can be difficult to implement in many levels. First of all, it implies that the beneficiary could be designated subsequently, which is misleading as the contract should provide the rules of its appointment. Secondly, it seems to show that the beneficiary can be changed subsequently, which could be made, but only through an amendment to the fiduciary agreement. Thirdly, is introduces a new deed in the fiduciary mechanism which is the "written act". Thus, the text refers to another act than the fiduciary agreement (which is not an amendment), but a written act than can be called “appointment act of the beneficiary”. We add this new document to the multitude of documents and formalities necessary to implement a fiduciary agreement.

Finally, we refer to the final thesis of art. 780: “If the fulfilment of special form requirements is necessary for the transmission of rights, a separate act shall be concluded in compliance with the legal requirements. In these cases, the lack of tax registration implies the application of the administrative sanctions provided by the law”. We consider this provision to be superfluous, as it refers to the situation where the for certain fiduciary assets, separate and special deeds must be in place. This idea is resumed under art. 781 which refers to the opposability of the fiduciary agreement. However, the provision could raise the following question: Does the law refers to other cases where a special contract must be in place? What are those cases? Considering the above, we must think of those special separate acts necessary for the transmission of certain rights. Except for immovable assets or auto vehicles we could not think of any such cases. This is the reason why this provision could generate difficulty in practice as the interested parties or authorities might invoke this provision to request the annulment of certain fiduciary agreements.

In terms of the publicity of the fiduciary agreement the Civil Code provides in art. 781 the following: “*Fiducia* is opposable to third parties since its date of entry in the Electronic Archive of Securities. The registration of the real estate rights, including the real estate collateral, which is the object of the fiduciary contract, shall also be made in the land book for each individual right”.

These provisions represent the rule of the publicity and opposability of the fiduciary mechanism. However, even the actual provisions are not lengthy the implications are very important. Thus, the registration of the fiduciary agreement in the National Registry for Movable Securities should not be taken for granted. In this respect, the legislator provides to this contract a very large visibility (too large in our opinion). Actually, this public registration can be accessed by anyone. We consider that there are advantages to this publicity and also disadvantages. The advantages of this type of publicity are obvious and are related to the protection of third parties as they are able to see if a certain asset is subject to a fiduciary agreement or not.

Among the advantages of the publicity of *fiducia* with the National Registry for Movable Securities we mention the fact that this measure will ensure protection against money laundering and terrorism financing, as the fiduciary, beneficiary and settlor are mentioned in this registry. Considering that the essence of money laundering and terrorism financing are based on anonymity it is obvious that the current regulation of the fiduciary operations is issued in order to prevent such operations through this contract.

Another advantage of the publicity of the fiduciary operation through this registry is the fact that the true beneficiary of this operation is revealed. In this respect, the fiduciary agreement should contain this beneficiary. Thus, the registration will also provide the name of the beneficiary. Indeed, one of the disadvantages of the Anglo-Saxon trust is that the ultimate beneficiary of the trust agreement is not public. In this respect, the public registries only provide the trustee as the holder of the ownership over the assets, while the true beneficiary is not “visible” to the public. The only method to identify the true beneficiary is to analyse the trust agreement. It was thus maybe the reason why the Romanian legislator chose to enact such a strict legal requirement for publicity.

Also, another major advantage of the publicity of the fiduciary operations rests in the fact that fictitious operations could not be performed through such contracts. In this respect, considering the fact that not only the parties of the agreement, but also the object and assets transferred through this agreement are mentioned in the registry, fictitious operations could not be performed without the risk of being disclosed and reported to the competent authorities. Also, we add to this the argument that the fiduciary contract must be concluded in front of a public notary. Considering the above and the sanctions of non-observance of these requirements, starting with the nullity and fines, the current provisions have the advantage to mitigate this risk.

In terms of disadvantages of this strict publicity requirement, we mention the fact that this procedure can be time consuming and costly. Also, the reasons for registering these operations in order to make them public are not very clear.

In addition, it is worth mentioning that the fiduciary are professionals with procedures and strict professional rules (such as Know Your Client (KYC) and Anti Money Laundering (AML)). In this respect, these registrations might impede to their trade and commercial secrets, as the products they offer and the price charges might become public. On the other hand, this might be a reason for most of the potential fiduciaries (banks, brokers and insurance companies) not to use this contract at its true potential.

However, maybe the most important disadvantage of the publicity requirement of the fiduciary operation is the fact that the reason of this requirement is not clear. Thus, as this is not a guarantee nor an another form of operation that must be registered with the National Registry for Movable Securities, the potential beneficiaries of the fiduciary operations become reluctant to use it.

Another formality for concluding a fiduciary operation is the requirement that the fiduciary contract to be under a notarized form, and thus concluded before a public notary. This requirement excludes many possibilities. For example, it remains questionable whether a fiduciary agreement can arise through a will (Golub, 2016). We consider that the legislator again had showed to be too formalistic and strict. In this respect, in Romania, usually only immovable property requires notarized form in order to be transferred. It is thus, too restrictive to impose such a form to any kind of fiduciary agreement however small. Considering the costs of such a notarisation, the parties may be reluctant to conclude such an agreement or use other types of agreements that do not required a notarisation. The implications of imposing the notarized form do not limit to the fact that the parties must be present in front of the notary, but are extended to the documentation required by such a notary, the space and time limitations of such a procedure (all the parties must be present in person), the time necessary for the notary to process the documentation and the time required to obtain the documents from the notary. Also, another implication of this legal requirement refers to the fact that any amendment to the fiduciary agreement must be concluded in the same notarized form, which could generate supplementary “discomfort” to the parties.

Another notification formality that must be rendered during the fiduciary operations refers to the obligation of the fiduciary to mention his quality when engaging third parties. Thus, the Civil Code, expressly provides the following in art. 782: “When the fiduciary acts on behalf of the fiduciary patrimony, he may make express mention in this respect, except where this is forbidden by the fiduciary contract”.

The provision above shows that the rule under this agreement is that the fiduciary must expressly inform the third party of its quality as fiduciary. The exception being the situation where the fiduciary agreement expressly provides that the fiduciary must not disclose its quality. Such provision adds to the disclosure obligations of the fiduciary and to the formalities imposed by the Civil Code. In this respect, the legal provisions introduce the right of the fiduciary to disclose its position. It is not clear, however, what would be the practice as the fiduciary may or may not disclose his position. A possible answer would be that the fiduciary would disclose its capacity when in its benefit and not disclose when such disclose would not benefit him. In the same time, we consider that the fiduciary should consider the interest of the beneficiary, and not itself, when deciding to disclose or not its capacity.

Even if the Civil Code only provides that fiduciary agreement could impose to the fiduciary not to disclose its capacity, we consider that the parties could agree that the fiduciary would be required to disclose at all times its capacity (and not depending on his discretionary will).

Furthermore, the Civil Code introduces a provision which is as unclear as it is inapplicable. In this respect, in the same article as mentioned above, the Civil Code provides: “When the fiduciary mass includes rights whose disclosure is subject to publicity, the fiduciary may require to mention the name of the fiduciary and the quality in which he acts”. This provision may refer to the cases where the publicity of the transfer is required by law (beyond the publicity requirement of the fiduciary operation itself). In this respect, we may think of the case where the fiduciary assets include shares in a limited liability company. In this respect, the transfer of such shares is subject to the publicity with the Trade Registry. The legal provision clarifies basically that the fiduciary must register this transfer according to the law and could, if the case, mention his capacity in the Trade Registry. Even if unlikely, we are eager to see the application of this provision in practice.

A rule that confirms our comments above is mentioned under art. 782 para. 3 as follows: “In all cases where the settlor or the beneficiary so requests in accordance with the fiduciary agreement, the fiduciary will need to specify the quality of the fiduciary. Otherwise, if the act is damaging to the settlor, the act will be deemed to have been concluded by the fiduciary in his own name”. We consider this legal provision of utmost importance and a proof of the maturity of the Romanian legislator in terms of liability. However, we could not say the same regarding art. 787 of the Civil Code which was called as deficient in the legal doctrine as it is very unclear and too general (Buta, 85-86).

Similar to the principles of the Romanian Company Law no. 31/1990 the legislator is consistent in terms of liability of agents.

Firstly, this article introduces the principle that the good faith third party should be protected as this party could be entering the contract without being aware of its true nature and counterparty.

Secondly, the law introduces the principle according to which the fiduciary must be liable for any damages caused to the beneficiaries. However, it is not very clear what would be the relevance of disclosing the capacity of the fiduciary, as the legal effect would be the same and the fiduciary is in fact the legal owner of the asset. A possible explanation would be that if the beneficiary and the settlor would have negotiated a better deal or they would have a better position for that contract, while the fiduciary would not obtain the same results. Indeed, according to the provisions of the first thesis of art. 782 para. 3 it became clear that the legislator had regulated the case where the beneficiary and the settlor requested the fiduciary to disclose its capacity and the latter had not fulfilled these obligations.

Thirdly, it has become clear that the parties can provide in the agreement the obligation for the fiduciary not only to abstain from disclosure but also to make this disclosure whenever the beneficiaries and settlor so requires.

Fourthly, it is worth the analysis of the possibility to damage the interest of the settlor through a legal act and how can this damage be measured. In this respect, we draw attention to the fact that the law provides that the act is damaging to the settlor and not to the beneficiary. So, *per a contrario*, if the act is damaging for the beneficiary the act would not be considering to be concluded in the name of the fiduciary (in this case the liability of the fiduciary for its activity could be raised). Another important aspect is how to determine if the act is damaging or not, as in such a contract the effects of such an act could become apparent after some while. In addition, a legal act that might appear as damaging at the beginning of the contract could prove to be very lucrative after a period (for example, an investment in capital market).

Fifthly, in case that such a legal act would be considered as concluded by the fiduciary in its own name, its effect would not be made in the fiduciary mass but in its separate assets (which are not related to the fiduciary contract) and out of which the fiduciary could also pay any liabilities.

3. Comments on the fiduciary opposability implications

We mentioned above the publicity formalities that must be fulfilled by the fiduciary in order to make it opposable. In this section we intend to discuss about the implications of the opposability of the fiduciary agreement and certain transactions towards the third parties, authorities and towards the other parties of the fiduciary agreement.

We consider that the opposability of the fiduciary agreement is important also for the third parties as it has significant consequences for all the parties involved. In this respect it is necessary to corroborate the provisions regarding the publicity requirements mentioned above with the provisions regarding the opposability of the fiduciary arrangement. In this respect, we consider relevant to mention the legal provisions under art. 786 in the Civil Code: "The assets of the fiduciary mass may be enforced, in accordance with the law, by the holders of debts arising in connection with such property or by those creditors of the settlor who have a real guarantee over its assets and whose opposition is acquired, according to the law, prior to the establishment of the *fiducia*. The right of enforcement may also be exercised by the other creditors of the settlor, but only by virtue of the final judgment of admission of the action by which the fiduciary contract has been abolished or rendered inoperative in any way with retroactive effect”.

Considering the above, it becomes apparent the importance of the opposability towards third parties, especially the potential beneficiaries of the guarantee over the assets of the fiduciary agreement.

The first exception to the rule is that that only the creditors emerging from the fiduciary operations can enforce and fulfil themselves from the fiduciary mass is the case of previous registered creditors. In this respect, the law provides that only the beneficiary of such mortgage agreements can have preference against any other creditors over the fiduciary assets. In this respect, the law provides two conditions in order for these creditors to enforce the assets in the fiduciary mass. Firstly, their rights against the settlor can be enforced only if these guarantee rights, and their opposability, have been in place before the conclusion of the fiduciary agreement. In this respect, it would be useful to analyse the effects of the opposability of the fiduciary agreement against these creditors. Can they invoke that the fiduciary agreement is not opposable to them, even if this contract has been registered with the National Registry for Movable Securities? Secondly, another condition is that they have a guarantee over the fiduciary assets. In this respect, we consider that the most common case would be the have a movable or immovable mortgage concluded before the date of the fiduciary agreement.

The second exception from the rule that only the creditors arising from the fiduciary operations can obtain enforcement from the fiduciary assets, is the case of creditors of the settlor that even if have subsequent rights in comparison to the fiduciary agreement, obtained the annulment or unopposability of this agreement. In this respect, it becomes very important to determine when and if have the fiduciary agreement become opposable to them.

First of all, we analyse the distinction made by the law between the annulment and unopposability of the fiduciary agreement. In this respect, while the case where the fiduciary agreement is declared null by a court decision is quite straightforward, the case where the fiduciary agreement is declared unopposable must be further analysed. Thus, under this scenario the fiduciary contract will not be annulled and will continue to be enforceable towards its parties and towards other third parties (considering the relativity principle of the court decisions), while the fiduciary agreement will become unopposable toward the interested creditor that could enforce certain assets of the fiduciary mass. Such a scenario could be feasible only in a case where the parties of the fiduciary agreement planned with intent to elude the law and to prejudice an interested party. However, we consider that the case where the parties intended to make this fiduciary agreement “hidden” from such a party would not fall under this scenario, as the law provides that the publicity of such an agreement is mandatory.

The second element and condition of the scenario mentioned above is the fact that the effect of both the annulment and the unopposability must be retroactive. Thus, *per a contrario*, in the case where the court decides that the contract is made null or unopposable only for the future, these interested creditors would not benefit from this exception and consequently they would not be able to request the enforcement of the assets in the fiduciary patrimony.

Another mention to be made is the rule that in relation to third parties, the fiduciary is deemed to have full powers over the fiduciary property, acting as a genuine and sole holder of the rights in question, unless it is shown that third parties are aware of the limitation of those powers.

Another relevant aspect related to the opposability of the fiduciary agreement is mentioned under art. 778 of the Civil Code: “Unless otherwise stipulated, the settlor may at any time designate a third party to represent his interests in the performance of the contract and to exercise the rights arising out of the fiduciary agreement”. In terms of opposability we consider this legal provision relevant as it shows that the settlor may delegate his powers to a third party. However, in this case it is important to analyse what would be the opposability terms of this act. More precise, would this party be made aware of all the fiduciary operations and should the fiduciary make these operations opposable toward him? Considering the wording of the legal provision we consider that this agent should become aware of all the fiduciary actions that the fiduciary would have been obliged to report to the settlor.

In terms of opposability in relation to the authorities, the main aspect to be observed is the relation with the fiscal authorities, as detailed above. However, mentioned should be made that even if the Civil Code does not specifically provide this expressly depending on the nature of the fiduciary assets (shares, loans, bonds, state bonds, etc.), other formalities and registration requirements should be considered by the fiduciary (National Bank of Romania, Financial Supervision Authority, Consumer Protection Authority, etc.). It is important to mention also that lack of fulfilment of such requirements could lead to fines applied to the fiduciary.

Finally, we also consider important to analyse the impact of the opposability of certain fiduciary transactions towards the settlor and the beneficiary. More precisely, it is worth analysing if certain actions and acts made by the fiduciary exceeding its powers under the fiduciary contract can be considered made by the fiduciary in its own name and if the settlor and the beneficiary can request damages from the fiduciary. We consider the answer to these questions to be affirmative under certain conditions. Thus, the fiduciary will be considered as to conclude the corresponding acts in its own name if the third party is aware of the fact that the fiduciary exceeds its mandate under the fiduciary agreement (as stipulated under art. 784 of the Civil Code).

In terms of information obligations, the Civil Code provides the following in art. 783: “The fiduciary agreement must include the conditions in which the fiduciary gives the settlor report regarding fulfilment of his obligations. The fiduciary also has to account, at intervals specified in the fiduciary agreement, to the beneficiary and to the representative of the settlor at their request”.

Considering this legal provision, is become relevant to analyse if the acts and actions that are not reported to the settlor and beneficiary can be deemed to be concluded by the fiduciary in its own name or the fiduciary will become liable for damages that arise from these acts. In this respect, we consider that the fact that the legal act is concluded during the fiduciary relation is related more to the fact that the third party knew or should have known that the fiduciary acts in this capacity rather than related to the fact that the fiduciary has reported or not that legal act to the other parties. For non-compliance of the reporting requirements we consider that the fiduciary should be held liable, even if the acts “hidden” would prove to be beneficial for the other parties, as reporting is an essential part of his role. However, for a better protection, it is worth mentioning that reserving certain powers by the settlor or beneficiary, or limiting the fiduciary’s power are not contrary to a fiduciary report (Douglas, 2013).

Finally, we mention that this form of control (i.e. reporting requirement) must be carefully exercised in order not to breach or to affect the powers of the fiduciary (Nolan, 2009).

4. The impact of excessive publicity and formality measures in Romania

As mentioned above the fiduciary operations must ensure very formalistic and strict requirements. We have shown above the reasons of such conditions and also the content and terms of such requirements.

In this section we intend to analyse the impact of such requirements over the use of *fiducia* in Romania.

The first effect of such strict requirements is very visible and publicly accessible. Namely, the National Registry for Movable Securities shows the limited number of fiduciary operations performed in Romania since its inception in 2011.

Another effect of such formalistic approach of the Romanian legislator is the fact that even the fiduciaries as stipulated in the law, namely the credit institutions, lawyers, notary public, brokers, insurance companies, etc. are reluctant in using this type of contract in their activity, even for example in case of brokers (SSIF) the Financial Supervision Authority issued since 2015 the secondary legislation in this respect (i.e. Regulation no. 1/2015).

The formalities necessary for the implementation of the publicity requirements could lead also to higher costs to be paid by the fiduciaries and ultimately by the settlor and beneficiary. In this respect, the registration of the fiduciary agreement with the National Registry for Movable Securities is made against a fee. Also, the cost of the notary public should be taken into consideration. In addition to these costs, the costs of the fiscal registration should be taken into account as it implies several taxes to be paid, trips to the fiscal authorities, fee, etc.

Another implication of the high formality framework would be the complex process that the fiduciary must endure. In this respect, the processes mentioned above are highly formalistic and time consuming. A lot of paperwork would need to be prepared for the fiscal registration file, for the registration of the fiduciary agreement with the National Registry for Movable Securities and for the public notary. In this respect, considering the novelty of this institution in Romania the authorities and persons involved in the registration process would require clarification and additional documentation.

We consider that the nature of these formalities could generate the need of specialized assistance from the potential beneficiaries. As the formalities are quite burdensome the potential beneficiaries would not be able to perform themselves these actions, but will need to hire a lawyer or another legal professional in this respect. This could cause additional cost and time for the entire process.

Finally, we also mention that there are not express and clear procedures to register and implement the fiduciary operations in the sectorial legislation. Except with some notable exception (out of which the lawyers' statute is by far the best example of excellent secondary regulation for *fiducia*), there is no such norms or procedures to help beneficiaries of fiduciary actions to understand and implement this agreement and to register it with the relevant authorities and bodies.

The success story of the trust seems very far from the current regulation of *fiducia*. In this respect, the flexibility and very light formality requirement of the publicity and formality of the trust have been the ingredients of the development of this institution in the Anglo-Saxon jurisdictions. In this respect, the trust is not required to be signed in front of a notary public. Also, the trust is not registered with the movables securities registry or other public registry. In addition, the trust is not registered with the fiscal authorities as such but only in the normal registration procedure.

In addition, it is worth mentioning that the trust has known a rapid development in the developed countries and it is now one of the pillars of the civil and commercial law, being also a sub-branch of law. This development has been obtained even if the trust does not impose any special capacity and type for the fiduciary. Despite this *laissez-faire* attitude the success and intense use of trust is a living proof that the current regulation the *fiducia* in the Romanian Civil Code is very perfectible. As a separate note *fiducia* can be used in a wide range of operations, including the capital market in the so-called business trust listings (Ho, 2012).

However, the other European and continental jurisdiction that have implemented *fiducia* in their jurisdiction have the same problems as we have, and the implementation of *fiducia* in national jurisdictions in the EU has been quite difficult (Banakas, 2006). In this respect, also, the French version of the *fiducia*, contain registration and formalistic requirements that are similar to the Romanian version. Another reason for this status is that *fiducia* is excluded from some European regulations governing the law applicable to contracts like Roma 1 (Sitaru, 2013).

We could not discuss about the impact of the excessive requirements of the fiduciary publicity without talking about two more aspects: the replacement of the fiduciary and the termination of the fiduciary agreement.

As a supplementary argument for the excessiveness of the formalities and protection against the fiduciary abuse, as other foreign authors mentioned, the fiduciary also has an additional obligation of loyalty and care, this component underlying the fiduciary relationships (Evans, 2005).

The Civil Code provides in art. 788 the rules of the replacement of the fiduciary agreement: "If the fiduciary fails to fulfil his obligations or endangers the interests entrusted to him, his settlor, representative or beneficiary may request the replacement of the fiduciary. Until the settlement of the request for replacement, the settlor, its representative or, failing that, the beneficiary shall appoint a provisional administrator of the fiduciary property. If the settlor, its representative or the beneficiary nominates a provisional administrator at the same time, the appointment made by the constituent or by his legal representative shall prevail. The term of office of the trustee shall cease upon the replacement of the trustee or at the time of the final rejection of the replacement request. The solution to the replacement of the fiduciary is done urgently and especially. The appointment of the new fiduciary and the provisional administrator may be ordered by the court only with their consent. If the court has appointed a new fiduciary, it will have all the rights and obligations provided in the trust agreement. The settlor, his representative, the new fiduciary or the provisional administrator may register this change of fiduciary, applying accordingly the provisions of art. 780 and 781. Replacement of the fiduciary occurs only after this registration".

As mentioned above, the replacement of the fiduciary can occur in case he does not fulfil its obligations. In this respect, in terms of loyalty he should act as an employee or even similar with a family member, through the relationship of trust or social dependence that is created under these scenarios (Gelter and Helleringer, 2018). As the publicity/registration is an important part of his obligations that could lead also to annulment of the agreement it becomes apparent that the fiduciary could be replaced if he does not implement the legal requirement. The procedure above applies *mutatis mutandis* for the case where the fiduciary is replaced for this reason.

In terms of termination of the fiduciary agreement, the Civil Code provides the following in art. 790: "The fiduciary contract terminates by fulfilling the term or by achieving the intended purpose when it occurs before the deadline is reached. It also ceases if all the beneficiaries renounce the *fiducia*, and the contract has not specified how the fiduciary relations will continue in such a situation".

It is important to note that an important duty of the fiduciary is also to transfer the assets to the beneficiary upon the termination of the contract, or in the absence of it to the settlor. Thus, as some Romanian authors show, this is the "specific effect of the termination of the fiduciary contract" (Moreanu, 2017: 274).

Waiver declarations are subject to the same registration formalities as the fiduciary contract. The cessation occurs at the date of completion of the registration formalities for the last waiver declaration.

The fiduciary contract also ceases when the opening of the insolvency proceedings against the fiduciary or at the time when the legal entity's reorganization takes place, according to the law".

Considering the importance of the formal requirements and the publicity of the fiduciary operations provided by the law to this contract, we consider that the termination of the fiduciary agreement can intervene at the request of the settlor or the beneficiary in case the fiduciary does not fulfil his corresponding obligations. In this case, it is also important to analyse the scenario where the fiduciary does not fulfil his obligation to disclose its position towards third parties. Another related obligation is to inform the settlor and the beneficiary on the status of the contract. Considering the above, the termination of the fiduciary agreement can intervene if the parties such decide or if the settlor and/or beneficiary so decides based on the non-fulfilment of the fiduciary.

5. Conclusions

The Civil Code includes a legal regulation of the fiduciary operations that is not in line with the requirements of the modern law. In this respect, the publicity requirements and the overall formalistic requirements for conclusion of the fiduciary agreement is burdensome and excessive.

This strictly formalistic requirements have an important negative impact over the use of *fiducia* in Romania, as the potential beneficiaries face high costs, time consuming procedures and very complicated procedures to be accomplished in order to use *fiducia* in their business. This situation is even harder to grasp as the fiduciaries in Romania can only be authorized and supervised entities, such as credit institutions, brokers, insurance companies, lawyers and notary public.

The true potential of this institution is not yet reached as the costs and complexity of this institution are not fully understood.

In terms of opposability of the fiduciary operations, there are multi-faceted aspects to be highlighted. As such, the opposability towards third parties is gained starting with the date of the registration of the fiduciary agreement with the National Registry for Movable Securities. However, towards the other parties of the fiduciary agreement (beneficiary and settlor) there are certain actions and effects that should be considered and carefully assessed.

Considering the above, it is indeed questionable why did the legislator choose these solutions and what would be the added value of the registration of the fiduciary agreement with the National Registry for Movable Securities, registration of the fiduciary with the fiscal authorities (sanctioned with the annulment of the agreement), indication of the quality as fiduciary towards the third party, the authentic form. A reasonable answer that can be considered in line with the European and Romanian approach of the legislator is overregulation and a prudent approach by any means necessary, even if this approach would mean that could impede the development. Of course, the legislator had considered also the risk of money laundering and the hiding of the identity of the beneficial owner.
The parallel between the trust and the *fiducia* is even more obvious in relation to the publicity and opposability requirement. In this respect, while the trust (with has very light and flexible publicity and formalistic requirements) has developed in an accelerated pace in the past centuries being now one of the pillars of the modern Anglo-Saxon law, the *fiducia* institution implemented in the Civil law jurisdiction has stagnated even if the last few decades this contract has been rediscovered and new regulation has been issued in this respect.

As a final positive note, we are optimistic that the results of the rebirth of this institution and that the practice will become visible soon and will offer to the potential users the advantageous tools of this complex but unique contract.

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PS4 PERFORMANCE MANAGEMENT

Chairperson: Irena Jindrichovska, Metropolitan University in Prague, Czech Republic

Adoption and benefits of management accounting practices: A Lebanese study

Hassan Nassereddine

Adoption and benefits of management accounting practices: A Lebanese study

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Abstract

Idea: *Management oriented accounting has been the latest solution towards organizations in the improvement of performance as well as increasing the profits by raising the planning, controlling and decision making elements of the organizations. This has been brought along by skills incorporated in all accounting. This brings along the interest of studying management accounting practices with a basic objective of understanding it, the benefits of adoption as well as the impacts of implementation.*

Data: *The study will use a surveying technique of quantitative method to facilitate the study by examining the applicability of management accounting practices in Lebanese organizations. A survey will incorporate around 160 account managers' perceptions about the adoption of management accounting practices, the perceived merits, and demerits as well the barriers towards adoption.*

What's new? *The research shows that companies and sectors of the economy that have adopted management accounting are better off in realization of profits and leadership accountability.*

Tools: *The survey results will be analysed using SPSS software to show the readiness and willingness towards the adoption of management accounting practices.*

So what? *The survey findings will show the advantages, disadvantages, and barriers to implementation. This will produce a comprehensive picture of the public accounting system in Lebanon and its readiness to adopt management accounting techniques and practices.*

Contribution: *Recommendations will be formulated to facilitate a diverse adoption. The research will finally show how better off sectors that have adopted management accounting are compared to the opposite.*

Keywords: *Management accounting practices, firms, benefits of adoption, barriers towards adoption, Lebanon.*

1. Introduction

In the globalised business economy existing currently, a comparable number of small, medium-sized and even large industries are struggling for survival. This may be brought along by many reasons besides rapid expansion of the markets and market conditions. Other reasons that may be hindering growth and development of such industries and businesses include a shortage of capital which facilitates the ongoing of the business activities, poor management skills which lead to poor coordination of activities across the industries and inadequate application of vital business and management skills. Inadequate use of management skills can moreover be comprised of poor management

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accounting practices that lead to poor financial and non-financial reporting (Anh, *et al.*, 2011). To succumb the challenges encountered in running such businesses there is a need to include management accounting practices in the system.

Traditional management accounting practices, that comprises of cost variance analysis and expense reduction measures, put its focus on matters that are micro-based to the organization and are more of financially based Herschung *et al.*, 2018 maps a quantitative management accounting research based on accounting practices. On the other hand, modern management accounting techniques bring together both financial and non-financial data and assume a specific, clear and detailed strategic focus. Design of activity-based costing and modern evaluation systems in terms of performance can be used as an example (Gong & Tse, 2009)

Management accounting has a vital role that it plays in enterprises especially in financial and non-financial accounting. Management Accounting (MA) is vital in that it outlays the micro reports- reports that are within the organisation- and analyses that the managers use when making informed choices. The strategies and techniques that are used in MA are developed as per qualitative features of the information that the users require as well as the activities of the company. This is in accordance with planning, monitoring and controlling of the activities in the industries. Anthony, (1988) argued that industries require management accounting techniques that will be used to effectively manage the limited and scarce resources that are available for them and enhance them to create valuable products thus improving efficiency. Despite how simple the task of incorporating management accounting may seem, industries face complexities, uncertainties and even prone to failures of successful implementation. Majority of industries in Lebanon are yet to adopt management accounting though it presumes an important function for all levels of businesses across the country.

This article is guided by a broader objective which is to understand the innovation process of management accounting across Lebanon. This innovation process may be categorized into the steps of adoption, the challenges Lebanese enterprises face in the process of adoption and the benefits of adoption. The study will be conducted in a general form- that means the industries will not be categorized according to their sizes but rather their preferred accountants would give their stands on management accounting adoption (Azudin, and Mansor, 2018).

The research is concerned with answering and understanding what management accounting is, the challenges that industries and SMEs face in the process of adoption and the benefits that befall adoption. Other secondary objectives of the study will be to understand the accountants' perception regarding management accounting and to compare different industries or companies with different views on management accounting and the respective implication in their profitability levels.

The literature review will cover the concept of management accounting and the steps of integration of management accounting in businesses in Lebanon. Furthermore, the literature review will cover the basics of the objectives which comprises the challenges towards adoption as well as the benefits of adoption.

The research assumes a quantitative research method where a survey is used and results analysed through SPSS statistical software to group different views of accountants in Lebanon towards implementation.

2. Literature review

Critics have been developed regarding how relevant management accounting is to managerial desires and needs, more so in contemporary manufacturing, and also about the empirical reality of a niche amongst management accounting theory as illustrated in secondary sources such as textbooks and the practice of management accounting at large (Gray, 1992). The basic arguments about these allegations were that management accounting ceases to account to improvements in the technical and competitive macro environment resulting to the notion that accounting information is mostly misleading and incorrect (Jarwal, 2018). As a result, a need for an accounting practice that has minimal interference with finance arises and which acts as a guide to the managers regarding the micro and macro environment of the business. Nuhu *et al.* (2017) argue that they do not question how organizations can become sustainable, but questions how they can shape behaviour internally to reduce their impact on the micro and macro environment and to measure the gap that separates them from the sustainable conduct of their activities. The researcher further suggests that it is only through management accounting practices that companies may be able to shape their micro and macro environment.

Adoption in the research framework has been used to rotate around the meaning 'taking management accounting by choice and voluntarily'. Therefore, industries that have adopted management accounting simply means industries that have embraced management accounting by choice and wish to conform to its guidelines unless otherwise. Lebanon has been used in the study as an example of countries that are in the take-off stages of development.

The study seeks to understand the concept of management accounting, the benefits of adoption as well as the impacts of adoption and implementation in Lebanese industries. The study moreover tries to investigate the progress of the industries that practice management accounting and compares it with the industries that are yet to adopt the same in Lebanon. The major key things and their relation to the study are discussed below.

2.1. Management accounting conceptual framework

Managerial accounting, also known as cost accounting, is the process of identifying, measuring, analysing, interpreting, and disseminating information to aiming to the better reaching of organizational missions and goals. The information so communicated maybe from the macro or microenvironment of the business (Schaltegger *et al.*, 2011). Managerial accounting is also the procedure of making management statements ready and other accounts that entails disseminating accurate and updated financial and statistical information required by heads of organizations such as managers to formulate daily or short term informed choices. Management organization gives out weekly or monthly statements for an organization's micro stakeholders such as heads of department, managers and chief executive officers. The statements basically indicate the amount of cash that is available, revenue generated from sales, the number of orders that the firm has at stake, states of accounts payable and receivable, raw materials and inventory and also trend charts and other statistics (Lee, & Epstein, 2013).

Management accounting can be described to be concerned with providing information to managers, that is, to those who are inside an organization and who direct and control its operations. It can, however, be contrasted with financial accounting, which is concerned with providing information to stockholders, creditors and others who are outside an organization (Gong & Tse, 2009). Management accounting research is in most cases carried using a conventional mainstream approach that is characterized by functionalism and rationalism. Another approach entails the basis on which management accounting can be conceptualized. This is through demonstration of roles of accounting in a general social, ethical, environmental, cultural and historical context (Zyznarska-Dworczak, 2018; Tan Boon Seng, 2016). To succeed in the present dynamic business environment, companies should link their strategies to quality improvement, increased flexibility in meeting customers' individual requirements, reduced lead times, inventories and production cost (Szychta, 2018). Thus, tools or strategies such as JIT, activity-based costing (ABC), TQM, processer-engineering, life cycle assessment and target costing would greatly enhance the ability of corporations to meet their objectives. Consequently, the authors argue that it is not unreasonable to want to examine the extent to which contemporary and traditional management accounting tools are being adopted by companies in emerging economies (Van der Stede, 2017).

Laela *et al.* (2018) point out that management accounting comprises of all accounting fields but aims at informing by relating the cost of the products or services bought by the company and the budget which is used at large in a quantitative expression of business operations.

For Gray (1987), management accounting is a process of disseminating information about the social and macro/micro-environmental effects of an organization's economic actions to certain groups in society in general. According to Gray *et al.* (2000), it offers another way of accounting for significant economic entities. It has the potential to expose the tensions created by the joint pursuit of profit and social and environmental objectives. It is from this perspective of accountability for changing representations and practices that Robert Gray continues his project of defining a conceptual framework for social and environmental accounting (Gray, 2000; 2002). However, this act of accountability also has internal effects, since it requires companies to come up with an infrastructure that will enable it to collect information about their environmental and social impacts. According to Gray (2000), they can expect benefits in terms of increasing the amount of information used for decision making; more precise cost calculation for the products or services produced or rendered by the company; Identification of the areas of social responsibility of the company; Identification of development opportunities in new markets.

Management accounting takes into account five approaches; Traditional ways of approaching management accounting includes normal and standard costing. Fairly, contemporary advanced approaches comprise of ABC/M, GPK and resource consumption accounting. A vital feature of a broad management accounting approach is that they exhibit neutrality to distinct accounting of fixed costs that is they can act as absorption or a variable costing system or for both in some incidences. The complexity of this grouping is described in connection to enterprise optimization in the best way. Comprehensive management accounting approaches also serve as the basics or the enabling platform for a number of management accounting techniques and management processes (Clinton *et al.*, 2006).

2.2. Lebanese accounting and management accounting history

The management accounting system in Lebanon was established by the Accountancy Profession Act No. 364/1994. The body is the sole organization in the whole of Lebanon which represents the accountancy profession in the country. Ideally, the institute is charged with the responsibility of establishing national standards on auditing, ethics, accounting education, and accounting practices (Barth, Landsman, and Lang, 2008). It also provides training, guidance, together with professional development to ascertain the highest level of performance among the professional accountants in Lebanon.

Just like in other parts of the world, the effects of the industrial revolution in Lebanon spurred the need for a better cost accounting system. The development of corporations led to the creation of large groups which invested a lot of interest in the results of various companies in Lebanon, regardless of not taking an active part in the management of such organizations (Al-Khoury, Moubarak, Franjieh, Abboud and AlShamali, 2015). Notably, the bondholders and shareholders who give external financing to the organizations had immense interest in the economic performance of business thus calling for more transparency and accountability. Also, the fact that the international systems of accounting had succeeded in other parts of the world such as USA and UK motivated the Lebanese to follow the path as well.

The need to establish a management accounting system in Lebanon was formed by the gap that existed in its accounting job market before 2014. As such, the policymakers in the sector deemed it fit to begin by updating the curriculum of accounting since newly graduated accountants appeared not to be ready for the accounting profession. For instance, in 2015, at most 10% of the candidates for the position of new recruits in accounting passed the professional entrance examination (Al-Khoury, Moubarak, Franjieh, Abboud and AlShamali, 2015). In particular, only 245 candidates out of possible 2500 applicants passed the test. The indication was that the freshly graduated students did not have the appropriate skills needed for the profession hence inability to take part in the profession. It was thus significant to establish a system that could match the rest of the global standards.

Lebanon adopted the standards of IFRS, following Decree no.1/6252, which is dated 21st August 1996, for three years (International Accounting Standards Board, 2010). However, law no. 27 (1980) maintains that all commercial organizations in the country should adopt a unified chart of accounts, which prompts companies to file their accounting and reports following IAS in the Law no. 27 (Barth, Landsman, and Lang, 2008).

The LACPA amended its laws in 2013 to establish the mechanisms for peer review quality assurance system for all Certified public accountants in Lebanon. In the process, two new independent committees were formed: the quality control supervisory committee and the quality control technical committee. As a way of supporting the Quality Assurance review system, the LACPA performed various events and activities between 2014 and 2015 including production of an audit manual, workshops for supporting the Small and medium practices, identification of local and international partners for financial support, training and selection of external quality assurance reviewers as well as hosting of technical workshops for trainees, members and business communities. In 2016, the institution focused on continuing to implement its support efforts, ensuring that the committees remained operational and appointing technical advisors. In 2017 and 2018, then LACPA performed post-implementation reviews for their accounting system.

Table 1 shown below shows a comparison of the approaches based on the criteria.

Table 1. **Comparison of approaches based on the criteria**

Criteria	**Traditional standard costing**	**Traditional normal costing**	**Activity based costing/ management**	**Resource consumption accounting (RCA)**	**Grenzplan –kosten-rechnung (GPK)**
1. Consistent treatment of consumption and cost behaviour	low	low	low	high	high
2. Integration					
• Conceptual	low	low	medium	high	high
• Value chain	low	low	low	high	some
• Technology	low	low	low	high	high
3. Self-updating/ maintaining	low	low	low	high	high
4. Flexibility	low	low	low	high	high
5. Capacity treatment	low	low	medium	high	high
6. Ability to generate relevant decision support information	low	low	medium	high	high
7. Easy to implement	high	high	medium	low	low
8. Adaptable to existing organization	high	high	medium	low	low
9. Exposure in the U.S.	high	high	medium	low	low

(*Source*: Clinton *et al.*, 2006:4)

2.3. Benefits of adopting management accounting to Lebanese industries

Management accounting increases efficiency in Lebanese companies. Industries that have adopted and implemented management accounting in Lebanon tend to be more efficient in performing their operations. This is made possible through performance evaluation and comparison. Industries are able to get their progress from management accountants which in return motivates them and rewards of promotions arises. This at a whole motivates employees to work effectively and efficiently with the available resources (Sabou, 2014). He further argues that management accounting brings about the effective use of cash by working closely with the IT department. He narrates that the work of management accounting in the firm is to work with the IT department closely. This action ensures within budget actions and provides cost transparency to the company thus overall efficiency.

Management accounting maximizes profits. Bhimani (2006) relates a rise in the profits realized by Lebanese industries to management accounting in that, he points out management accounting to be inclusive of budgetary control and capital expenditure. Through the use of those methods, unnecessary expenses are cut off and as the expenses go low at a fixed or rising revenue, the profits increase.

Management accounting leads to more informed decisions made by managers. This makes sure that the policies formulated by the Lebanese companies are both workers or employees friendly as well as customers or consumer friendly and also conform to the organizational goals (Zawawi, 2010).

Management accounting enables the fluctuation of Lebanese monetary fund: management accounting enables control over the fluctuation of the Lebanese monetary fund through the business monetary fund. This is achieved through the maintenance of precautionary funds. Additionally, management accounting helps in eliminating any source of funds misuse within a company which later translates into accountability to the whole country.

Management accounting is flexible in nature. This ensures that reports that are prepared within the management accounting practices do not require a year, month or week for preparation. This gives the Lebanese accountants enough time to prepare perfect reports.

Additionally, Sabou (2014) argues that management accounting incorporates advanced techniques and features that are accurate, valid and reliable for future predictions considering past results. These techniques include capital budgeting, marginal costing, control accounting among others. The techniques assist Lebanese industries and government entities in laying down strategies that will not only impact the present performance, but even future performance of the economy.

3. Methodology

The study is performed in Lebanon among accountants from 40 different industries. A sample size of 160 participants is selected randomly from these industries and issued with questionnaires. The views and perceptions of the participants is noted to facilitate a wider knowledge base regarding management accounting.

Pilot tests are performed as per the industries and the accountants. Test-retest is done twice in the same group of industries and using the same participants and it gives similar results hence the information is reliable. This is because test-retest fulfils its predicted aims and objectives and also ensures that the results are due to the study and not any possible extraneous variables. A construct validity approach is used through limited questions of the questionnaire to ensure that the measure is actually the measure of what is expected. Examples of the questions of the survey are; participants should indicate whether they have an idea what management accounting is, they should indicate whether their company has adopted management accounting and what benefits management accounting has brought to the company. Other information that is collected included the size of the industries classified according to the number of workers. The degree of how management accounting is beneficial is rated as A for no benefits, B for benefits and C no idea. The respondents who fill the beneficial parts have more than one year of experience in the company.

After analysing the information, a description of the sample shows that; companies that the survey has used are grouped into six categories with their frequencies as shown in table 2 below. Respondents from each category are indicated as well in Table 2 below with the highest number in food and beverage companies. The frequencies represent the number of companies or respondents that fall in the same category. Additionally, the more the number of the accountants in a category the more the size of the industries hence food and beverages companies leads by having the highest number of accountants selected.

Table 2. **Classification of companies/ industries.**

Industry classification	Frequency (No. of companies)	Cumulative frequency of industries classes	Number of accountants from each classification	Cumulative frequency of respondents
Food and beverages	8	8	40	40
Chemical products	4	12	20	60
Textiles, printing	6	18	32	92
General construction	2	20	18	110
Non-metallic and minerals	12	32	30	140
Other companies not mentioned	8	40	20	160

(*Source*: Author's own research)

Among the 160 participants, over 80% of them acknowledges that they have an idea of what management accounting was and would stand to explain briefly what it is. 5% partially use management accounting techniques while the rest 15% have an idea but would not relate it to any specific field in the industries. Table 3 summarises the outcomes.

Table 3. **Classification of participants according to the knowledge base**

	Frequency	Percentage
Accountants with an idea and can apply it	128	80.0
Accountants with an idea but cannot relate it	24	15.0
Accountants who partially use management accounting techniques	8	5.0

(*Source*: Author's own research)

4. Results and discussions

Among the 160 accountants, over 75% have said that the companies they were working for have already adopted management accounting. 15% said that their companies were yet to adapt though they might be in the process. The remaining 10% did not have an idea of whether management accounting was practised in their companies or not. The results are as shown below. Further classification on the categories of industries has been performed to bring the results more clearly as shown in table 4 below.

Table 4. **A comprehensive classification of firms' descriptions as per adoption status, their categories, frequency and respective percentages**

Category	Total frequency	Description of companies	Frequency of respondents	Percentage
Food and beverages	40	Practising	30	75.0
		Not practising	6	15.0
		Not sure	4	10.0
Chemical products	20	Practising	15	75.0
		Not practising	3	15.0
		Not sure	2	10.0
Textiles, printing	32	Practising	24	75.0
		Not practising	5	15.6
		Not sure	3	9.4
General construction	18	Practising	13	72.2
		Not practising	3	16.7
		Not sure	2	11.1
Non-metallic and minerals	30	Practising	23	76.7
		Not practising	5	
		Not sure	2	
Other companies not mentioned	20	Practising	15	75.0
		Not practising	2	10.0
		Not sure	3	15.0

(*Source*: Author's own research)

Results from respondents in terms of the benefits were analysed and represented in table 5 below. The results have shown that over 60% believed that the companies benefited from adoption. 30% believed that there were no benefits after implementation while the rest 10% had no idea. This is in line with Sabou (2014) research work who analyses the benefits that are associated with management accounting adoption.

Table 5. **Analysis of different views on adoption**

	Frequency	Percentage
Accountants who believed adoption was beneficial (A)	96	60.0
Accountants who believed adoption was not beneficial (B)	48	30.0
Accountants with no idea	16	10.0

(*Source*: Author's own research)

The research findings in Lebanon concerning management accounting have shown that industries that have adopted management accounting are better off compared to those that are yet to. This can be clearly shown by considering the measurement of how large a firm is which determines the amount of profits each company gets, by the number of employers that it has. The food and beverage companies show quite a large number of workers taking a quarter of the total number of participants, all other factors at *ceteris Paribas.* This can, however, be deduced from the fact that the category has the highest number of companies practising management accounting.

Secondly, the research has as well shown some level of awareness needs to be created to enable some accountants to realize what management accounting clearly refers to. 5% of the accountants who responded that they had no idea regarding management accounting shows some lack of public awareness that is vital in accounting. Furthermore, companies that are not practising management accounting as well need to be made aware of the benefits for a standard economy. This is in line with Lee *et al.* (2013) in his work, who proposes that despite the advances in management accounting, the knowledge need to be vast among the people for more applicability.

Finally, the results have shown that basics regarding management accounting lack and hence hinder understandability. This can be deduced from the respondents who have an idea what management accounting is but cannot tell anything regarding it. This means that the conceptual framework is deficient and hence needs to be addressed for good management accounting practices.

5. Conclusion

The study sought to understand what management accounting is, its benefits and implementation in relation to Lebanese companies. The broader objective of the study was brought to light what management accounting is as well as its benefits.

It is interesting to note that some companies in Lebanon are yet to adopt management accounting. This can call for an immediate formulation of a policy that will help stand and advocate for management accounting. The study has as well shown that companies who have heeded to management accounting are enjoying large economies of scale and hence more profits realization.

In addition, the findings of the study revealed that although there is an awareness of the importance of management accounting, there exist some companies with accountants who have no idea of management accounting and hence the whole unit missing in those companies. This calls for government intervention through the formulation of learning curriculum to enable accounting students to gain skills early enough so that by the time they are getting to their fields of work, they can be able to relate management accounting with other types of accounts such as cost accounting.

The study, however, has not covered into details the types of management accounting that Lebanese management accountants practise. This calls for more research but after ensuring that almost 100% of the accountants gain a little knowledge of management accounting that will lower the cost of study as well as minimising the complexities of the research.

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PS5 LAW 2

Chairperson: Cristina Cojocaru, Bucharest University of Economic Studies, Romania

Termination of the employment contract during the probationary period
Raluca Dimitriu

The legal protection law of working women in international conventions and Jordanian labour
Ibrahim Al-haj-eid

Termination of the employment contract during the probationary period

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Abstract: *The protection of probationary employees and the prohibition of abusive use of this means of verifying professional skills in employment is a matter of concern for the domestic European legislator, who places a particular emphasis on the status of this category of employees as well as on their right to be informed of the duration and consequences of the probationary period. This means of recruitment is very effective, but it has to be used within the scope of its legislative purpose, and not to keep workers in a state of perpetual uncertainty. From European fundamental documents such as the European Social Rights Pillar to the draft of the forthcoming Directive on transparent and predictable working conditions in the European Union, European rules include solutions to properly protect this category of precarious work. The paper explores the most recent issues raised in the theory and practice of labour law regarding the probationary period and includes a series of lege ferenda proposals to address some of these issues. It also includes a critical examination of judicial practice, against the background of sometimes insufficiently protective, sometimes excessively protective, rules applicable to the category of early-stage employees.*

Keywords: *Labour legislation, probationary period, employment contract, termination of contract, European labour law.*

1. Introduction

The protection of employees during the probationary period is a persistent concern for labour law theory and practice because the rules for protection during this period when the worker is most vulnerable can be quite easily circumvented.

In November 2017, at the Gothenburg Social Summit for Fair Jobs and Growth, the European Parliament, the European Council and the European Commission adopted the European Pillar of Social Rights (EPSR, COM (2018) 130), in order to advance the social dimension of European integration. The EPSR sets out twenty essential principles and rights in the areas of equal opportunities and access to the labour market; fair working conditions; and social protection and inclusion. Among the 20 principles defined in the European Pillar of Social Rights, Principle no. 7 contains an express provision on the probation period, stating that "workers have the right to be informed in writing at the start of employment about their rights and obligations resulting from the employment relationship, including on probation period".

In applying this principle, the probation period is also subject to regulation in the draft European Directive on transparent and predictable working conditions in the European Union (COM (2017) 797). The issue is set out in Recital 19: “Probationary periods

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allow employers to verify that workers are suitable for the position for which they have been engaged while providing them with accompanying support and training. Such periods may be accompanied by reduced protection against dismissal. Any entry into the labour market or transition to a new position should not be subject to prolonged insecurity. As established in the European Pillar of Social Rights, probationary periods should therefore be of reasonable duration. A substantial number of Member States have established a general maximum duration of probation between three and six months, which should be considered reasonable. Probationary periods may be longer than six months where this is justified by the nature of the employment such as for managerial positions and where this is in the interest of the worker, such as in the case of long illness or in the context of specific measures promoting permanent employment notably for young workers". Consequently, according to art. 3 par. (2) lit. f) of the draft directive, the information provided to the worker on employment must also include "the duration and conditions of the probationary period, if any". The issue is worth mentioning, especially given that the current directive on information, namely Council Directive 91/533/EEC of 14 October 1991 on an employer's obligation to inform employees of the conditions applicable to the contract or employment relationship does not include the probationary period among the elements regarding witch the employer must inform on employment.

Besides, Article 7 of the draft Directive provides that "Member States shall ensure that, where an employment relationship is subject to a probationary period, that period shall not exceed six months, including any extension. Member States may provide for longer probationary periods in cases where this is justified by the nature of the employment or is in the interest of the worker."

As far as Romanian law is concerned, it should be noted that the probation period is included in the information the employee must receive since the adoption of the current Labour Code – Law no. 53/2003, published in the Official Gazette no. 345 of 18 May 2011, art. 17 par. (3) requiring the employer to inform the person selected for employment including "n) the length of the probationary period". But the keen concern of the European legislator to avoid fraud and to make workers aware of the extent to which their employment relationship is vulnerable and can be stopped at random is also a signal for the Romanian law on the need for increased protection that should be ensured to this category of workers.

In addition, the probation period is viewed at European level with caution and attention not only at the legislative level but also as jurisprudence. For example, in Lawrie Blum (Lawrie Blum v. Land Baden Wurttemberg, No. 66/85), the Court of Justice ruled on the employment status of a British citizen who had passed the first examination to become a teacher in Germany. According to German law, the status of worker was acquired only after a second examination. The Court however considered that the notion of "worker" should be defined in accordance with European law, not according to internal rules. Consequently, according to the Court, a teacher during the probation period who provides services in the form of teaching in return for which s/he is remunerated must be regarded as a 'worker', irrespective of the conditions imposed by the German national legislation.

Indeed, throughout the probation period the worker benefits from all the rights and obligations of her colleagues. The question is that any person in the probation period should be recognized as a worker so that he or she can benefit from this legal status.

From the rule of equal treatment between the probationary employee and the other employees there is only one (important) exception: at the end of the probationary period, the employment contract can be terminated immediately without notice and without any special procedure. Irrespective of whether the initiative for such termination belongs to the employer or even the employee, the provisions relating to dismissal or resignation are not applicable.

This places the employee on probation in a rather fragile situation: he or she cannot be sure of the continuation of the employment relationship. On the other hand, the employer does not have such certainty either because the employee will be able to continue looking for an alternative job, renouncing the contract performed during the probation period as soon as he or she identifies another more convenient job. Therefore, the relations between the parties are not yet clarified, although formally, the employment contract is in progress (Dimitriu, a, 2011:23).

Let us look at a series of developments of Romanian law in the field, from the perspective of the need to protect this category of workers, a necessity underlined, as we have seen, and the latest European documents.

2. Employees with execution positions

The normal duration of the probationary period of employment, against which all rules on the probationary period are exceptions, is 90 days. Thus, art. 31 par. (1) of the Labour Code provides this period as the maximum length of the probationary period, in the case of employees in execution positions, with an open-ended contract. We note that the duration is set in calendar days and that no distinction is made between full-time and part-time employees. Indeed, in the case of part-time employees, since their daily work schedule is lower than that of full-time workers, the verification of professional skills will be more difficult by means of the probationary period, given that less than 8 hours/day are available for the employer to find out if the employee meets the required standards.

The period of 90 days is shorter compared to other systems of law where it may be longer (for example, in the Nordic countries, the duration of the probation period reaches six months). The duration was judged to be consistent with constitutional norms by the Constitutional Court Decision no. 383/2011, published in the Official Gazette no. 281 of 21 April 2011, stating that its duration allows the employer to assess if the employee is professionally suitable for the job in question. However, extending the probation period from 30 calendar days (as stipulated by the Initial Labour Code) to 90 calendar days (after the change introduced by Law 40/2011) may have "the consequence of weakening the legal safeguards of the employee’s job stability" (Athanasiu and Vlăsceanu, 2017:45).

In the case of short term contracts, the length of the probationary period is differentiated based on the type of position occupied by the employee, execution position or management position, only for contracts exceeding 6 months (Ştefănescu, 2017:570).

Thus, according to art. 85, in relation to the duration of the contract, the trial period is 5 working days for contracts shorter than 3 months, 15 working days for contracts between 3 and 6 months and 30 working days for an individual employment contract longer than 6 months.

The provision in Art. 85 of the Labour Code can be criticized for at least two reasons:

- because it provides a duration of the trial period expressed in working days rather than calendar days. This is a non-correlation with the provision - rule contained in art. 31 of the Labour Code, and one which usually operates at the expense of the employee;
- because it does not take into account the possibility that the duration of the employment contract is not known from the beginning, being affected by an uncertain term. We encounter such a situation, for example, when the contract is concluded to replace an employee whose contract of employment is suspended (for example, the holder is on leave for temporary incapacity for work or on parental leave).

3. Employees with management positions

In the case of employees in management positions, the maximum probationary period is longer, which can be 120 calendar days for open ended contracts 45 working days for short term contracts longer than 6 months.

With regard to the employees who start in a management position, we need to show that they may be subject to a new probationary period. Thus, according to art. 32 of the Labour Code, during the performance of an individual employment contract only one trial period can be established. By way of exception, however, as provided in par. (2), the employee may be subjected to a new probationary period if he or she starts in a new position or profession with the same employer or is going to perform work in a workplace with severe, harmful or dangerous working conditions.

Naturally, the possibility of a new trial period is considered only if the new position is substantially different from the initial position and not just a change of names. Thus, the Bucharest Court of Appeal ruled that "the verification of the professional and personal skills of the appellant was carried out during the first trial period. The similarity of the two positions regarding the essential aspects: the level of education and training; the skills needed based on the scale and complexity of the activities that define the occupations; the degree of specialization within the same activity; the type of raw materials and equipment used, the manufacturing processes used. The fact that the two positions had particularities determined by the duties specified in the job descriptions, that the Receivables Collection Service had different objectives than the Contract Management Service are not sufficient criteria to conclude a debut of the appellant in a new position within the meaning of Art. 32 paragraph (2) Labour Code". (Bucharest Court of Appeal, Decision No. 1779/2018, Section VII for cases concerning labour disputes and social security).

However, if the change of the employment contract occurred indeed, the employee being transferred to a new position – for example, promoted – the termination of the contract during the trial period for the new position would lead to the effective termination of the employment relationship between the employee and the employer.

Therefore, we cannot agree with the decision according to which "by signing the additional act to the employment contract, the position filled by the plaintiff changed, with a trial period of 90 calendar days. After the 90-day period, the employer mistakenly considered the termination of the employment contract because we are not dealing with a new probationary contract but a contract for the change of position with a trial period for the management position. Thus, the employer was legally obliged to order the employee to resume her previous position" (Dâmbovița Tribunal – Civil Sentence No. 2481/06.12.2012).

While the employer's obligation to order the return of the employee to the initial job does not have a legal basis, it is no less true that such situations raise the issue of the abuse of rights. It is the case when the actual purpose of the employer would have been precisely to circumvent the provisions on dismissal and the mere termination of the employee's contract, who was once again probationary employee. Otherwise, the employee with seniority in the company would have their contract terminated only in accordance with the rather restrictive procedural provisions of dismissal. Therefore, in practice, sometimes the employer does not dismiss the employee, but proposes the change of the employment contract to a new position, possibly a senior position. It is only that this change – carried out with the agreement of the employee – returns the latter to the vulnerable situation of a new employee. The termination of the contract on the new position will no longer require a dismissal procedure, but it will be sufficient to terminate the contract for the trial period, without notice and without reason, if such a trial period has been established by the additional act concluded. This is because, as we have seen, if in the new position and during the new probationary period the employment contract is terminated, it will not (unless otherwise stipulated in the contract) entail a return to the original execution position but a complete cessation of the employment relationship with the company.

4. Trainees

A variant of the probation period is the traineeship. Thus, according to art. 31 par. (4) of the Labour Code, for the graduates of higher education, the first six months after the start of the profession is considered a period of traineeship. The graduates benefit from the provisions of Law no. 335/2013 regarding the performance of traineeship by higher education graduates, published in the Official Gazette no. 776 of 12 December 2013, as amended.

An employer may hire a higher education graduate, only twice for the same position, to perform a traineeship on the basis of a traineeship agreement annexed to the individual employment contract. The duration of the traineeship contract is six months, except for cases where another period is set forth by a special law. Such periods of traineeship are sometimes also provided for independent workers. Thus, for example, Law no. 184/2001 regarding the organization and exercise of the profession of architect, republished in the Official Gazette no. 771 of 23 August 2004, provides in art. 13 par. (1) that in order to acquire the power of signing, the architect shall carry out his professional activity as a trainee for a minimum period of two years or the Government Ordinance no. 65/1994 on the organization of the activity of expert accountants and licensed accountants, republished in the Official Gazette no. 13 of 8 January 2008, stipulates in art. 3 par. (1) that access to the profession of expert accountant and licensed accountant is based on an entrance examination, a three-year traineeship and an aptitude test at the end of the internship.

The rights and obligations of the parties regarding the performance of the traineeship period shall be determined by the traineeship agreement, according to the law and shall be supplemented, as the case may be, by the provisions of the applicable collective labour agreement and by the internal rules.

As the traineeship is a variety of the probation period, the contract may terminate without notice and without justification. However, unlike the other probationary employees, in the case of the trainee, the law imposes the rule of evaluation and only if the appraisal is unsatisfactory does the employer have the right to terminate the employment contract. In addition, if the employer has benefited from certain tax incentives provided by the law, they must be returned when the employers makes use of the right to terminate the contract.

It should be noted that the traineeship period is not to be confused with the internship, regulated by Law no. 176/2018, published in the Official Gazette no. 626 of 19 July 2018. The intern is not an employee, and the internship contract is not an employment contract. As a result, the provisions regarding the probationary period do not apply to interns, although the purpose of the internship is often to verify the professional skills of the intern in view of future employment.

5. Persons with disabilities

Persons with disabilities have a trial period of 45 working days.

A legal difficulty must be pointed out here. The duration of the probationary period for disabled persons was, according to the Labour Code in its previous version, 30 days. A special law, namely Law no. 448/2006 on the protection and promotion of the rights of persons with disabilities, republished in Official Gazette no. 1 of 3 January 2008, provided for a scheme derogating from the one governed by the Labour Code, namely a probationary period of 45 working days.

The amendment of the Labour Code by Law no. 40/2011 did not include the modification of the original 30-day trial period, although the article on the duration of the probationary period was changed in other respects. Under these circumstances, the question arises as to what normative act applies: The Labour Code or Law no. 448/2006? On the one hand, Law no. 448/2006 is earlier, on the other hand, it is a special law.

The problem is actually broader. The situation is as follows: the general law includes a provision "A". Subsequently, a special law, derogating with a provision "B", which shall prevail. After a while, however, the general law is changed, without any reference to the special regulation, and in its new form contains a different provision, "C". What will be the applicable text? On the one hand, the application of the *specialia generalibus derogant* rule would lead to the conclusion that the special law continues to apply, because the new law is also a general law. On the other hand, the general law has the status of a new law in relation to the special law, which indicates the legislator’s intention to apply. In addition, the legal norms are adopted for the purpose of being applied (*actus interpretandus est potius ut valeat quam ut pereat*), a rule that we disregard if we admit that the general law, in its new form, was adopted without the purpose to be applicable.

As far as we are concerned, we have argued (Dimitriu, 2011:26-27) that Law no. 448/2006 continues to apply, since its nature as a special law, derogatory from the common law, prevails in relation to the chronological criterion. In addition, the legal technique rules prohibit default abrogation.

By Decision no. 660/2018 of the Constitutional Court, published in the Official Gazette no. 70 of 29 January 2019 the exception of unconstitutionality of the provisions of art. 31 par. (3) of the Law no. 53/2003 – Labour Code was rejected. These provisions had been criticized by reference to art. 50 of the Constitution, which states that "Persons with disabilities enjoy special protection. The State shall ensure that a national policy on equal opportunities, disability and treatment of disability is in place to ensure effective participation of people with disabilities in community life, respecting the rights and duties of parents and guardians".

Thus, the Court held that the legal regime applicable to employment relationships during the probation period was expressly regulated by the legislator as being special in relation to those for which no such period is established. Therefore, in order to verify the employee's professional skills, the legislator also introduced a special condition applicable to the employment relationship thus concluded, namely the notification provided in art. 31 par. (3) of the Labour Code, a notification that does not have to be justified and which attests to the fact that the employee's professional skills do not correspond to the requirements of the job. It is a discretionary decision taken by the employer, left by law to the discretion of the employer. The Court has held that the criticized texts do not prevent employees whose individual employment contracts cease during the probationary period, according to the provisions of Art. 31 par. (3) of the Labour Code to challenge in court the notification issued by the employer and to have all the remedies and procedural guarantees provided for by civil procedural law.

It was noted that a possible abusive attitude of the employer – for example, requiring the employee to perform certain job duties that do not correspond to the description of the position held – could be challenged before the court by virtue of the principle of good faith in the conduct of labour relations, principle enshrined in art. 8 of the Labour Code, but also by Art. 57 of the Constitution.

Concerning the critique of unconstitutionality in relation to art. 50 of the Constitution, the Court considers that the author of the exception is in fact dissatisfied with the fact that the provisions of Art. 31 par. (3) of the Law no. 53/2003 do not establish a more favourable regime for people with disabilities. However, the Court notes that the provisions of Art. 31 par. (2) of the Law no. 53/2003 establishes a distinct regulation applicable to persons with disabilities, which states that "the verification of professional skills in employment of disabled persons shall be carried out exclusively by means of the probationary period of maximum 30 calendar days". Consequently, the competition/exam is excluded as a form of assessment of the professional performance on employment of people with disabilities, creating a way adapted to their situation which takes into account both the training and the physical and mental ability to deal with the specific requirements of the job and which excludes comparison with persons who do not have a disability.

We consider that art. 31 par. (2) of the Labour Code is in fact constitutional (noting that the duration of the probationary period is not 30 days, but 45 days, according to the special law, as shown above). But we further consider that the question arises: is the probation period actually an advantage for the employee compared to the other ways of checking – such as the interview? Out of all the relevant regulations a negative answer emerges; in fact, this is the reason why the probation period is also limited in time, so that the employee does not remain indefinitely in the state of vulnerability that this period of employment involves. But if the probation period is not an advantage, why can the professional skills of people with disabilities be verified only in this way? It follows from the case outlined above that, on the contrary, the person with disability in question felt disadvantaged by the fact that they could not be employed by another means of selection but only by using a probationary period, thus allowing the employer to terminate the employment contract during the period negotiated as trial period, without notice and without justification.

We believe that what the legislator intended was the exclusion of the competition so that the persons with disabilities are not put at a disadvantage against the candidates without disabilities. But in principle, the interview does not have to be removed from the means of verifying people with disabilities. In addition, the priority of the provisions of the Special Law no. 448/2006 in relation to the provisions of Labour Law is also to the detriment of the disabled employee because they impose a maximum duration of 45 days of the probation period, compared to only 30 days stipulated by the Labour Code. (Roşioru, 2017:291-292).

As a result, *de lege ferenda*, the provisions regarding the probation period in the Law no. 448/2006 should be repealed, leaving the Labour Code the only legal basis for the use of the probationary period for persons with disabilities, and instead of art. 31 par. (2) of the Labour Code, it would be preferable to provide that the verification of professional skills for the employment of persons with disabilities can be achieved by any method except competition. Also, in the case of persons with disabilities, an exception should be made to the rule that in the public sector institutions, employment can be done only through competition (Article 30 (1) of the Labour Code).

6. Prohibition of termination of the employment contract

During or at the end of the trial period, either party may terminate the contract following a simple notification without notice. Therefore, termination is not justified and is not subject to any prior procedure. If the initiative to terminate the contract belongs to the employer, there is no need to provide reasons for this cessation and or to follow the procedure for dismissal.

We consider that the real reason for termination of the contract should not be among the grounds for dismissal listed in art. 61 and 65 respectively of the Labour Code. Even less can we reduce the reasons for the termination of the contract to the professional inadequacy of the employee, as it would seem to derive from the provisions of art. 75 par. (2) of the Labour Code. Indeed, according to this text, "exceptions to the provisions of par. (1) [i.e. concerning the period of notice] are the persons dismissed pursuant to art. 61 lit. d) who are in probationary employment" (Panainte, 2017:55).

On the contrary, since the employer is not required to justify in any way the cessation, this could be attributable to other causes, such as unauthorised leave or even other reasons than those that could lead to a dismissal, such as the fact that, in the meantime, the employer has identified another candidate for employment, more qualified than the probationary employee.

The employer's right to terminate the employment contract during the probationary period, without notice and without justification, is not absolute. Also during the probation period, the employee benefits from protection against discrimination. The legal basis of this protection is Government Ordinance no. 137/2000 on the prevention and sanctioning of all forms of discrimination, republished in the Official Gazette no. 99 of 8 February 2007, as amended, which prohibits discrimination on recruitment: "The provisions of this Ordinance shall apply to all natural or legal persons, whether public or private, as well as to public institutions with attributions regarding: a) the conditions for employment, criteria and conditions for recruitment, selection and promotion, access to all forms and levels of guidance, training and professional development ...".

However, according to art. 31 par. (1) of the Labour Code, the probation period is a way of "checking the employee's skills", therefore it belongs to the recruitment stage. The employer is not obliged to motivate its decision to terminate the employment contract, but of course this does not mean that such a reason does not exist in fact. And if the employee can make preliminary evidence of discrimination, the burden of proof will be shifted to the employer, as in any dispute concerning discrimination, which will have to provide the real reason for which the employment contract ceased, reason that cannot be discriminatory.

Nevertheless, if the probationary employee communicates to the employer the state of pregnancy, it has been decided in the court practice that termination of the contract may take place. Indeed, the provisions of art. 60 par. (1) the Labour Code prohibits only the "dismissal" of the pregnant employee, not the termination of the employment contact by other means provided by law, such as the termination of the law, by agreement, by resignation or by virtue of art. 31 par. (3) of the Labour Code.

As far as we are concerned, we believe that, indeed, art. 60 par. (1) of the Labour Code is not applicable because the termination of the employment contract during the probationary period is not dismissal. But this does not mean that the employer could decide to terminate the contract because the employee is pregnant, because although in this period of maximum vulnerability in the employment relationship, however, the employer enjoys anti-discrimination provisions. Indeed, placing a pregnant person at disadvantage constitutes indirect discrimination on the basis of gender. Law no. 202/2002 stipulates in art. 9 that discrimination is prohibited by the employer's use of practices that disadvantage persons of a particular sex in relation to employment relationships concerning (inter alia) the conclusion, suspension, modification and/or termination of the employment or service relationship. Termination of an employment contract during the trial period as a result of the information that the employee is pregnant creates the supposition of a discriminatory decision. It is the employer who should, in this context, prove the real reason for terminating the contract; the decision to terminate may be maintained by the court insofar as the employer will be able to prove that the reason for that decision was independent of the pregnancy of the employee.

As we have seen, the termination of the employment contract during the probation period is a reason for termination apart from dismissal. Under these circumstances, if the employer decides to initiate disciplinary proceedings, and to follow the procedure of disciplinary dismissal under art. 61 lit. a) of the Labour Code, or if it carries out the periodic evaluation and orders the dismissal for professional inadequacy of the employee under art. 61 lit. d) of the Labour Code, the question arises whether the employer could still go back, terminating the contract even with the inadequate observance of these procedures. It could be argued that since the law allows termination of the contract during the probationary period without the observance of any procedure, the fact that the employer has followed it partially, it cannot be deprived of the right to cease the contract abruptly, under art. 31 par. (3) of the Labour Code. However, we appreciate that once the employer has opted for a dismissal, it will not be able to cover the procedural irregularities of this dismissal by invoking the right to terminate the contract without complying with any such procedure. We consider that the principle *electa una via non datur recursus ad alteram* (he who has chosen one way cannot have recourse to another) in the sense that the employer could no longer return to the way in which he chose the termination of the contract, in order to rely on art. 31 par. (3) of the Labour Code.

On the other hand, however, when carrying out the professional assessment of employees, their performance during the probation period may also be taken into account. In other words, if after one year of employment, the employee will be subject to an evaluation, the results obtained during the probation period will also be taken into consideration and, if necessary, he may be dismissed for professional inadequacy for failure to achieve performance standards during the entire period under evaluation. The employee will not be able to defend himself by showing that the probation period was just a recruitment stage, as the employment contract was already concluded. Thus, the employee enjoys all the rights arising from the quality of the employee (including, for example, the right to take account of the probationary period in determining the right to rest leave), but he also has related obligations, such as the obligation to fulfil job duties according to the performance standards imposed by the employer.

7. The employee on sick leave

An independent issue is the case when the probationer is on sick leave. Such situations are not only possible, but even frequent. Indeed, an increased risk of occupational injury during the earliest periods of employment has been observed in numerous studies spanning many decades (Huizinga *et al.*, 2019:433)

There were some views according to which the probation period would continue to run, even during the time the contract is suspended. In fact, according to art. 49 (6) of the Labour Code, the suspension of the contract suspends all terms, except in cases where the cessation of law arises. As a result, the probation period is also suspended, and it will continue after the sick-leave worker returns.

It should be noted, however, that if the contract cannot be terminated *during* the period of incapacity for work, it may cease *due* to incapacity for work. Once back from medical leave, the employee will be thus able to see the contract terminated. Indeed, the employer is not obliged to justify the termination of the contract, which creates the possibility to terminate the employment contract for any reason (or almost any reason, as we have seen), including the fact that the employee has been absent from work for medical reasons.

8. Conclusions

The probationary period is a time of most vulnerability for the employee when his/her contract (although already concluded) may be terminated at any time by simple written notice. Employees on probationary period are, in principle, the subject of precarious work because of the unpredictability of their employment relationship. The employer's ability to terminate the contract at any time removes the premise of work stability which generally characterizes the labour performed under an individual employment contract (Dimitriu, 2016:197).

The protection of probationary employees and the prohibition of abusive use of this means of verifying professional skills in employment is also a matter of concern for the European legislator, who places a particular emphasis on the status of this category of employees as well as on their right to be informed of the duration and consequences of the probationary period. This means of recruitment is very effective, but it has to be used within the scope of its legislative purpose, and not to keep workers in a state of perpetual uncertainty.

The Romanian jurisprudence concerning the termination of the contract during the probation period is generous, the practical problems that this issue (still) raises being numerous. It is therefore necessary to have a correct reading of the protective texts, especially those that prohibit discrimination, in view of the principles enshrined in the European Pillar of Social Rights, so that those that are new in a particular profession or in a particular position are not deprived of the generally recognized rights of employees.

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The legal protection law of working women in international conventions and Jordanian labour

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Abstract: *The legal protection law of working women is considered one of the important issues, which all countries are currently seeking with all their potential and degree of development, to provide all the conditions for their protection and care. The last decades have witnessed a large-scale presence of women in the labour markets, whereas that women's job with men in many of the work fields has made certain conditions regarding working women given their different nature from men. This was done by international organizations such as the International Labour Organization to develop certain controls that ensures the protection of women and provides a minimum of human conditions which must be provided so that they can reconcile their work with their female nature and their family responsibilities. The Jordanian legislator created the principles laid down by the international labour standards in order to regulate the work of women and their female nature. However, there are some things that the Jordanian legislator has failed to keep up with international legislations and some other things.*

Keywords: *Protection, women, international law, Jordan.*

1. Introduction

The role of women is no longer confined to the care of family affairs and their requirements, but the burden of other tasks has been added to them. Women's employment is, according to their origin, a right, but it has often become de facto obligatory and difficult to provide for her family women rights are an integral part of human rights. (Haitham Al Masarwa, 2013:9).

In addition to being considered an important issue that has become the focus of attention of the international community as a whole. Thus, the International Public Law has been adopted through various international conventions, both those issued by the General Assembly of the United Nations and through the recommendations of the conferences International, or through the decisions of specialized international organizations related to women's rights and equality of men. Furthermore, the field of women's rights should be granted benefits and care consistent with the nature of women, and was the attention to the rights of women at the global and national levels. It included international covenants Legal texts the rights of women working and their care are based on the principles of human rights, where the dignity of women is preserved and their life is protected from discrimination, abuse and persecution. Despite the recognition of the principle of equality between men and women adopted by international standards in the field of labour, there are some considerations that led to legal protection, especially for women workers, which requires achieving a kind of balance in the rights enjoyed by

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both men and women, in addition to the existence of some of the work that women can do and lack of physics to do the work of another kind. Whichever requires the existence of special protection for women, both in international standards, or on the scope of national legislation, whether in operation or the protection of motherhood and childhood.

2. The legal protection of working women in international conventions

The preparation of the General Assembly of the Universal Declaration of Human Rights is the main step in laying the groundwork for the law of international protection of human rights, and the common means of measuring the achievement of peoples and nations. Hence, those concerned with women's affairs are more than justified for the adoption of international standards to ensure the rights of women and to carry out an active and continuous activity to achieve this goal. For example, with regard to the protection of women from dangerous working conditions, an agreement was issued at the Berne Conference in 1906 for this purpose and it was keen to end its right to equality with men.

2.1. Working women in the international community for human rights

The Charter of the United Nations contained a number of principles of human rights. The first of these principles was the preamble to the Charter, which, as we have said, affirmed respect for fundamental human rights and equal rights for men and women. The most important texts are those contained in articles (55) and (56). Article (55) stipulates that the United Nations shall promote universal respect for human rights and fundamental freedoms for all without distinction as to race, sex, language or religion. Article (56) requires all members to achieve the objectives set forth in Article (55).

We consider that what is stated in the provisions of the Charter of the United Nations and its articles have legal value is bound to respect and protect human rights, because the compulsory character is almost legally perceived through the provisions of the articles in the Charter. As a matter of customary law, The Universal Declaration of Human Rights (1948) became one of the most important international conventions that came into being after the Second World War was declared. The declaration stated the principles of human rights which must be preserved and enshrined in the legislation of the human rights. Whereas the peoples of the United Nations have reaffirmed in the Charter their faith in human rights and the dignity and worth of the human person and for the equal rights of men and women, and since Member States have undertaken to cooperate with the United Nations to ensure the progressive observance of human rights and freedoms Basic and respectable.

The Universal Declaration of Human Rights affirms the principle of non-discrimination. Article (23) of the Universal Declaration of Human Rights states: "All human beings are born free and equal in dignity and rights and have the right to be treated in a spirit of brotherhood", advertising:

- Every person has the right to work and the right to freedom of choice under conditions of just and favourable treatment and the right to protect from unemployment.
- Each member without distinction has equal rights for payment.

- Everyone has the right to a fair and just work, which guarantees him and his family a decent standard of living with human dignity and, where necessary, other social protection guidelines.
- Every person has the right to create and join trade unions for his own benefit.

As the above text has fully equated men and women with the right to work, where the term “individuals” is not limited to men only, but also extends to women. This equality is between the genders not only in employment opportunities but in the earnings from it. The right of every person (including women) to work, and the freedom to choose work under the conditions of satisfactory work and protection from unemployment and wages, which must be just satisfactory to them and ensure them and their family decent living dignity, well-being, prosperity, vacations, and other things.

The adoption of these covenants is an important turning point in the history of the establishment of human rights and ensuring their achievement. The United Nations has adopted three important international human rights documents; the International Covenant on Civil and Political Rights (ICCPR), the two protocols thereto and the International Covenant on Economic, Social and Cultural Rights (ICESCR), as an embodiment of the international recognition of human rights, including labour rights (Magda Ali Mulla Sadek, 2013:104).

Article (53) of the International Covenant on Civil and Political Rights states: “The States Parties to the present Covenant undertake to ensure the equal right of men and women to the enjoyment of all civil and political rights, as provided for in this Covenant.”

With regard to the aspect of work in this Covenant, article (8/3/1), it states that “No one shall be compelled to perform compulsory work.”

Where the word (one) is absolute, and absolute is being launched without restriction, that includes men and women alike, not forced to work compulsory.

Since the mere enactment of a law that provides for the right to an adequate standard of living does not mean that the state fulfils its obligation. It is necessary to provide the necessary economic means in the event that some parties fail to implement their obligations in the field of economic, social and cultural rights. States Parties are obliged to implement the Convention immediately after ratification and accession (Kamran Al-Salhi, 2000:86).

Article (10 /2) of the Covenant stipulates on “special protection shall be provided to mothers within a reasonable period before and after the childbirth, and that working mothers should be granted a leave of absence or leave accompanied by adequate social security benefits during the period mentioned”.

We note that the Covenant has emphasized the right of pregnant women to work during pregnancy, because this period requires full care in all respects to take a pay during the period of complete rest, to help them during that period because of the need for more expenses, as well as the need for health care.

There are many international conventions on non-discrimination against women in the field of work, the most important of which are:

2.1.1. Declaration to eliminate all forms of discrimination against women

Adopted by the General Assembly of the United Nations on November 7, 1967, declared discrimination against the afflicted, which affirmed that discrimination does not conform to human dignity and deprives women of participation in economic, political and cultural life, in particular that the full development of any country and the welfare of the world requires its participation by women and men.

In addition to the rights referred to previously, this declaration has been lost and in order to prevent discrimination against the woman due to marriage or maternity, and to guarantee her actual right to work, States Parties shall take the appropriate measures by the following:

- Prohibition of dismissal from work due to pregnancy or maternity leave and discrimination in dismissal from work on the basis of marital status, with sanctions imposed on violators.
- The introduction of a paid maternity leave system or with the benefit of similar social benefits without losing the job title, employment, seniority or social allowances.
- Encouraging the provision of the necessary social services to enable parents to combine their family responsibilities with work responsibilities and participation in public life. In particularly by encouraging the establishment and development of a network of childcare facilities.
- Providing special protection for the pregnancy during work which it proves to be harmful.

2.1.2. Convention on the elimination of all forms of discrimination against women

The importance of this Convention comes from the fact that it has put the issues of the women within the objectives of the United Nations and its priority list, becoming part of the international human rights law, in that it emphasized the human element in the rights of the women, and addressed the issue of discrimination in a specific way and dealt with it in depth and comprehensiveness in order to bring about real change in the situation, and develop solutions and measures to be taken by States Parties to eliminate discrimination against all forms of discrimination, which were not provided for in the preceding conventions, each of which dealt with a specific aspect of the patent issue.

In the second article of the Convention, all forms of discrimination against women have been condemned and States Parties have committed themselves to the equalization of their national constitutions and all laws, to take legislative measures to prohibit all discrimination against emancipation, to recognize the legal protection of innocence through the courts, and to repeal all national penal laws which constitute discrimination against women.

The Convention has recognized the rights of women, including equal opportunities, the right to education, and the right to health and safety of working conditions, which includes reproduction. This right guaranteed by the Convention to protect women and provide security and physical and psychological safety during pregnancy. Especially those that keep them from the risk of miscarriage, infertility, or the risk of being infected by the foetus at any risk or damage to it, as well as the prohibition of all forms of violence against the workplace. Especially harassment and sexual harassment, where there are many cases where women were subjected to any type of harassment. In this form the Convention on the Elimination of All Forms of Discrimination against Women marked a difference in the history of human rights of the mirror, having the general principle of redressing gender-based discrimination and other standards relating to women that have been enshrined in human rights conventions.

2.2. The rights of women working in accordance with the provisions of the International Labour Organization

The international organization attempted to address the rights of women by observing discrimination and to establish equality, as one of the most important factors of occupational stress related to sex is the issue of gender discrimination in the workplace, unequal opportunities and inequality, which have a significant impact on working women at a higher level than the effects of occupational stressors such as, overcrowding, poor skills, or lack of full use of capacity, which is an additional burden on the balance between family and work requirements. Discrimination on the basis of sex is an impediment to professional and physical progress that may be related to psychological and physical purposes demonstrating various illnesses and frequent visits to the doctor (Rania Rushdie,2009:131).

Therefore, the International Labour Organization (ILO) has endeavoured to disseminate international labour standards and to make them available to all without distinction against the discrimination that discriminates against them in working opportunities, or depriving them of appropriate working conditions, in which there is no real equality. It was adopted in 1944 and became part of the Constitution of the Organization.

There are 188 Conventions issued by the ILO, in which there are 12 conventions relating to women, mainly or minor, of the conventions of general conventions aimed at enshrining the principle of equality and eliminating forms of discrimination in employment, including the Convention on the Equal Treatment of Women, especially when work is similar. The Convention on the Elimination of All Forms of Discrimination against Women is of great international concern because the gender inequalities in pay for employment are discriminatory, the Convention on Discrimination in Respect of Employment infringes women's rights, and the remaining conventions that deal with the specific status of women are the Convention on the Employment of Women under the Earth Mines Convention on the employment of women, as well as the Maternity Protection Convention.

The International Labour Conference has adopted numerous international conventions and recommendations aimed at combating discrimination against the working class. Among the most important of these is the International Convention No. 100 of 1951 concerning the equal payment of workers and women workers for work of equal value. This convention is considered the foremost international labour standards in this regard, where the expression of remuneration includes basic or minimum salary and all other compensation paid by the employer directly or indirectly in cash or in kind in exchange for using it. Moreover, it does not consider a violation to the principle of equal wages of workers and women workers for work with equal values. Having differences between the wage rates correspond, without regard to gender, with the differences in the work to be accomplished for objective evaluation functions.

As for motherhood, it is one of the most important issues for working mothers and society as a whole, since the increase in the number of working women and married couples, including the protection of mothers right to leave the situation, the right to family benefits and work security during pregnancy, the situation, and health insurance, which includes maternity and maternal and child care, is the most important responsibility for the protection of mothers on the responsibility of the state, since it is a recognized social function. The provisions of the international labour conventions and recommendations have affirmed the right to protect the working woman and the right to protect her child.

For the first time, the International Labour Conference set forth the legal provisions for the protection of women workers during their maternity period under International Convention No. 3 of 1919 concerning maternity, in which the United Nations Convention on the Rights of the Child gave the right to terminate work six weeks prior to the date of birth, At least six weeks from the date of the situation, and also gave women the right to leave work if they give a medical certificate proving the possibility of the situation within six weeks. In addition to granting the visa during the period of absence from work in accordance with the two previous financial support, which is sufficient for the full support of her and her child, provided that the benefit of public funds or through the system of insurance, and determine the competent authority in each country accurately the amount of this subsidy. In addition to the wage, medical care is provided free of charge by a doctor or qualified nurse, and should have no error by the doctor or the assessor in the estimation of the subject date deprive the woman of obtaining such a subsidy, and the nursing mother has the right to be absent twice a day not less than half an hour each to breastfeed her child, and is over eighteen months following the date of the situation.

The International Labour Organization (ILO) has issued a number of special provisions for the protection of women and their privacy in the workplace, such as the prohibition of night work for women, as well as the prohibition of carrying out difficult, dangerous or unhealthy work through international conventions. As well as the health damage in terms of the disturbances that occur in the organization of daily life within the home in the life of the family. For these reasons, the International Labour Organization (ILO) took care of the issue of running the night at night, as defined by Convention No. 4 of 1919 The field of application in industrial enterprises in a broad sense. However, it excludes the trade and agriculture convention from this, in addition to the convention that prohibits the employment of women at night in every industrial institution in general or private except for establishments that are exclusively owned by members of one family. This principle can be broken in two cases:

- In case of absolute power. For example, when a stop in work occurs in any installations, it cannot be expected and has no repetitive character.
- When it is needed to continue to work to avoid loss that could be attached to the first materials or perishable materials.

The International Labour Organization (ILO) Convention on the Work of Women at Night No. 41 of 1934 added two main amendments, that are:

- Allowing the competent authority, after consulting the professional bodies of workers and employers concerned with the report on the exceptional circumstances of workers engaged in its industry or a specific area by making the duration of the work of women by making the night extend from 11 pm to 6 am instead of 10 pm and 5 am.
- Exemption of women workers in administrative positions that require the responsibility of applying this policy.

According to the Convention on the Employment of Women in Industry in the Night of 1948, the Government or the competent authority may suspend the prohibition of women's work at night after consulting the employers' organizations with the organizations of the workers concerned when the national interest requires it to meet urgent and dangerous circumstances, which is promoted by the work within the ILO (Abdel Aal Derby,2013:234).

3. Legal protection of working women employed in the Jordanian Labour law

Women are the mainstay of the society and the main focus of its construction. The Jordanian legislator has given women special attention in terms of the rights granted to them and the special protection of various forms of gender-based discrimination. Nevertheless, the rate of participation of women in the Jordanian labour market remains the lowest in the world (14% for women versus 66% for men).

The Jordanian Labour Code defines the worker as a male or female person who performs work in return for remuneration and is subordinate to the employer and under his command. This includes events and those who are under experience and rehabilitation. We note that the legislator has explicitly stated the equality between male and female regarding the applicability of the labour law to them. The rights included in the Labour Code represent the minimum of rights to which a worker may not be deprived, male or female, in respect of the applicability of the law to them. Where the provisions of the Jordanian Labour Law are no different from those stated by the Jordanian project in the system of civil service, with the separation in the application of both. Thus, the civil service system did not distinguish between male and female in relation to the right to assume government functions.

We find that the appointment in the functions of civil service (government) is in accordance with the needs that have been approved to achieve better use of competencies according to the foundations of merit and the wall and achieve the principles of transparency and fairness and equal opportunities.

However, some of the works include by nature a great deal of seriousness, such as work in the fields of chemical, biological or other, including what is also difficult by nature, such as work, which requires the ability to endure and patience, such as work in Mines and underground quarries and others. Moreover, the time factor in the work plays an important role in relation to the working woman. Some businesses require permanence and continuation at times that are disproportionate to the status of women in conservative communities. There is no doubt that night work is more stressful for human beings, as well as security and moral dangers.

3.1 Special provisions for the protection of motherhood

Article (70) of the Labour Code stipulates that: “A woman has the right to receive maternity leave at full wage before the childbirth and after a total period of ten weeks, provided that the duration of the leave is not less than six weeks after the birth”. It is prohibited to work before the expiration of that period.

The period of entitlement of working women for maternity leave is to prove the status of the situation by providing a medical report of the expected date of birth accompanied by maternity leave, and this period is divided into two parts:

- Optional (pre-delivery).
- Compulsory (subsequent to birth).

With regard to the option, the working woman has the right to take a pre-natal leave of four weeks, and in order to give her that, it is necessary to submit a medical report on the date on which the child is expected to be born. The option is for the worker, and the employer cannot refuse to give her leave if she asks for it. The previous four weeks on the likely date of birth.

It is worth mentioning that the Jordanian Labour Law did not stipulate that working women should spend a certain period of time with their employer in order to qualify for maternity leave, unlike some neighbouring countries such as Saudi Arabia and some Gulf countries.

During the period of maternity leave or during the last few months of carrying out the prohibition of the Jordanian legislator to resort to some employers from the dismissal of the worker in order to evade payment of maternity allowance. Article (27 / A / 1) of the Jordanian Labour Law stipulates that:

The Employer may not terminate the service of the Employee or serve notice upon him for the termination of his service in any of the following cases:

- The pregnant working woman as of the sixth month of her pregnancy or during the maternity leave.
- The Employee who is on conscription or reserve service during such service.
- The Employee during his annual or sick leave or the leave granted to him for purpose of labour culture, pilgrimage or during his mutually agreed upon leave to serve on full time basis for the syndication work or to join a recognized institute, college or university.
- The Employer shall become non-liable to the provisions of paragraph (a) hereof if the Employee is engaged by another Employer during any of the periods provided for under such paragraph.

We note that the ban on the separation of women workers during maternity leave, with the aim of taking into consideration their physical and health condition, as the woman who is pregnant is less active at work and is not in a healthy position due to pregnancy. On the other hand, a woman working in a temporary situation must be mindful of her mental state, as she desperately needs this legal protection, and accordingly the employer may not terminate the service of the pregnant woman worker starting from the sixth month of her pregnancy or during maternity leave. In the event of such termination by the employer, the legislator considered it an unlawful termination of any arbitrary chapter, even if he had been notified to do so, except in certain cases, namely:

- If the Employee impersonates the personality or identity of another person or submits forged certificates or documents for the purpose bringing personal benefit for himself or in detriment of others.
- If the Employee does not fulfil the obligations consequent upon him under the work contract.
- If the Employee commits an error which resulted in serious material loss to the Employer provided that the Employer notifies the competent party or parties of the incident within five days from the time of his knowledge of the occurrence thereof.
- If the Employee violates the internal regulations of the Establishment including the safety conditions of work and Employees despite his warning in writing twice.
- If the Employee absents himself without legitimate reason more than twenty intermittent days during the year or more than ten consecutive days provided that the discharge is preceded by a written warning to be mailed by registered post to his address and published once in one of the local dailies.
- If the Employee discloses the secrets of work.
- If the Employee is convicted, by a court decision which has become conclusive, of a felony or misdemeanour touching on honour and public moral.
- If he is found unmistakably drunk or under the influence of narcotics or mentally influencing factor or committed an act which is improper to public morals at the place of work.
- If the Employee assaults the Employer, the Manager in charge, one of his superiors, any Employees or any other person during work or due thereto by beating or humiliating.

The Jordanian judiciary has the burden of proof on the employer in order to prove the validity of his decision to dismiss the worker without violating the validity of this decision, and by nature, the worker has the right to prove that the employer submitted, to prove the validity of the decision of the dismissal is incorrect and to prove the case of arbitrariness in his dismissal.

As for the compulsory section, the remaining part of the maternity leave includes the next six weeks of birth. The leave in this section is discriminatory to the employer and the right of the worker under the provisions of the law. The worker is not allowed to work during the next six weeks of childbirth, due to the need for a period of rest after birth. The religious holidays and seasonal holidays are calculated from the duration of the vacation if they occur during the period. It is noteworthy that under the International Convention No. (183) for the year 2000 (on the protection of maternity which has been amended only by the provisions of the International Covenant on Civil and Political Rights) The International Women’s Health Fund, has granted women workers the right to receive maternity leave paid for a period not exceeding four weeks, when providing a medical certificate showing the expected date of birth, and the Arab Convention No. (6) for the year (1976) on the levels of work granted to women working right To receive paid maternity leave for a period not less than ten weeks.

Therefore, the Jordanian legislator must amend the provisions of the Labour Law to comply with the provisions of the above mentioned international and Arab labour agreements as they give better rights to working women.

Finally, it should be pointed out that perhaps the complications of the situation may arise. We find that the international agreements dealt with this issue. The International Convention No. 183 of 2000 on maternity protection granted to women working for a special leave, either before her maternity leave or thereafter, a medical certificate, as well as in the case of a disease or a complication caused by her or the possibility of complications arising from pregnancy and child, the Jordanian legislator did not address the issue.

In the new law, women are paid full wages, but the employer is not required to pay for the treatment of the worker during pregnancy and her children, unlike the international agreements, which, according to the law, we recommend the provision of care for working mothers and their children to be cared for before, while and after childbirth, including hospital care. Therefore, we propose adding a legislative text requiring the state and the employer to provide insurance for all its workers, including working women. During pregnancy and children or part thereof, there shall be harmonized national and international legislation to reach as much protection as possible for the working woman.

The Jordanian Labour Law provided for a number of rights and guarantees in this regard, and the working woman was granted the right to care for her children in terms of granting her a period to feed her child and grant her permission to care for him.

3.1.1. Right of a woman to work in a suitable place for the custody of her children during her work

In order to maintain the reassurance of working women for their child, and help them to psychological stability, and thus increase their production, which reflected positively on the stability of the family and the interests of the employer. The Jordanian legislator cared for children of working women by obliging the employer to provide a suitable place for their care (custody).

The Jordanian legislator has obliged the employer to use at least twenty married workers to prepare the suitable place (nursery) run by qualified children’s care centres for the care of the children of workers under the age of four years, provided that the number of children is not less than ten children. Article (72) of the Labour Code stipulates that this provision is one of the most restrictive provisions in the Labour Law, since the conditions set forth by the Jordanian legislator are somewhat difficult, and these conditions may only be met in large institutions that employ workers in large numbers, which misses the opportunity to benefit from this right to many. Adding that these conditions may allow many employers to refrain from employing married workers or to circumvent the legal text so that the employer will only employ a number of working women who do not reach the limit provided for in the article. Therefore, he proposed to the Jordanian legislator to reduce the number of women working in the institution instead of twenty workers, as well as reducing the number of children required instead of ten children, and without specifying the ages of these children, so as to achieve legal protection better than the situation now, and to provide a favourable environment and working conditions enable them to do their work safely and comfortably in order to achieve a quantum leap in the development of the provisions of the legislation on women workers.

3.1.2. Breast feeding leave

Supplement for the right of women working in maternity leave, as provided in Article (71), that the working women after maternity leave, written in Article (70) of this Law shall have the right to take during the year from the date of birth period or paid period with the intention of breastfeeding her new baby does not exceed a total of one hour per day.

Note that it is a period of one hour per day paid to feed her child, which is not enough. Especially if the working woman working in the institution does not have a nursery, which necessitates leaving the institution to the location of her child for the sake of breastfeeding. Accordingly, the one hour is not enough.

3.1.3. Leave of a working mother for raising her children

Article (67) of the Labour Code for working women in an institution employing ten or more workers the right to receive a vacation without pay for a period not exceeding one year for full-time to raise her children, and is entitled to return to her work after the end of this period. On that she loses this right if paid in any other institution during that period.

The legislator gave the worker the right to return to her work after the end of the vacation, but the legislator put an exception to that so that the woman who has the vacation mentioned the right to return to her previous work if she worked in another institution in exchange for a wage during the duration of these vacations, whether she worked one day or more.

3.2. Provisions concerning conditions and conditions of employment of women

The nature of women differs from the nature of man from several aspects. Women are physically weaker than men, and are less able to bear the hardships of some work, and therefore must be treated in a way coefficient with their physical nature, and must not be equal to men in the type of work, the work should not be on the expense of her femininity and physiological nature.

Therefore, the Jordanian legislator has taken care of women's workers with guarantees and controls to ensure their health and moral protection. Health protection is achieved by preventing the employment of women in certain industries, and industries that may affect their health and achieving moral protection through the prohibition of their operation at certain times. Therefore, we will address these two points in two consecutive points:

3.2.1. Protecting women from dangerous or hard work

Article (69) of the Jordanian Labour Law stipulates that it shall be determined by a decision of the Minister of Labour after consulting with the competent official authorities:

- Industries and businesses where the employment of women is prohibited.
- The times when women are not allowed to work and the situations excluded from them.

Where it turns out that the Jordanian legislator has given the Minister of Labour the authority to determine the industries and hard work that women cannot do, or the industries and workers in which the work of women is a danger to their health. After a review of the opinion of the competent official bodies, the Minister of Labour issued the decision on work and times Which prohibits the employment of women, such as:

- Mines and quarries and all works related to the extraction of minerals and stones underground.
- Metal melting.
- Welding of metals in all its forms, and other things.

3.2.2. Prohibition of women working at night

There is no doubt that work at night is more stressful than work during the day, where research has revealed many, which dealt with the effects of work at night on the health of workers for two main causes of health risks, namely: sleep disorders and changing dietary habits, where it turns out that night work may expose women. Especially during the days of their monthly cycle, to stress overload, which makes their need for protection first and necessitated the need for men to protect.

The work at night has social and moral effects on the family, especially if the mother is working at night, and has children in need of care, in addition to the fact that the continuation of women in the performance of their domestic workers may lead to the number of hours of sleep and increase fatigue affects the health, Article (69/b) of the Jordanian Labour Law, which issued a resolution on the functions and times when women may not be employed. Article (4) states that women may not be employed between 8:00 pm and 6:00 am except in the following work.

- Work in hotels, restaurants, cafes, entertainment roles, and cinemas.
- Work in airports, airlines and tourist offices.
- Work in hospitals, sanatoriums and clinics.
- Working in transporting people and goods by water, air and land.
- Work in the IT sector and related occupations.
- Annual inventory works, preparing the budget, clearing and transferring accounts, preparing for sale at low prices, preparing for the opening of the seasons, or preventing loss of goods or any other material subject to damage or avoidance of technical work or in order to receive, deliver or transfer certain materials. To which the provisions of this paragraph apply to thirty days per year, and the actual working hours shall not exceed ten hours per day.

4. Conclusion

The work on expanding the participation of women in the labour market is not limited to enabling them to obtain jobs commensurate with the nature of their composition, where a range of guarantees must be available to enable them to participate effectively in the productive area of their work. It may be called privileges for women, for example hours of work and the nature of the work entrusted to them. However, there is an unjustified gap in the amount of wages given to women compared with those given to men. This requires the rapid intervention by the Jordanian legislator to amend article (45) of the law Frankly Li forced the employer to equality between men and women in the amount of wage confirmation on the principle of equal pay with equal values.

In order to provide legal protection for working women and ensure their practice, we propose the following:

- Enact legislation or amendments in line with international conventions related to women's issues and rights, taking into account the cultural privacy of the Jordanian society.
- The need for an international mechanism to monitor the implementation by States of conventions on women's rights and to have the authority to issue binding and deterrent decisions and measures against States Parties that violate these rights.
- The enactment of a special law for the employment of women.
- Work on establishing a department in the Ministry of Labour for legal protection in equal cases and refer them to the courts if necessary through lawyers who will be appointed for this purpose to ascertain the extent to which the application of the International Labour Conventions (100) and (11) ratified by the two equal pay equal work.
- Amend the text of Article (72) of the Jordanian Labour Law No. (8) of 1996, because the conditions set forth by the Jordanian legislator in this text are somewhat difficult.
- It is suggested that the Jordanian Labour Law shall specify the meaning of the word "night" and shall take into account the summer and winter time.

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PS6 AUDIT

Chairperson: Rania Kamla, Heriot-Watt University, UK

Impact of the auditors' characteristics and of the audited firm on the audit quality: Evidence from the Romanian regulated market

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Impact of the auditors' characteristics and of the audited firm on the audit quality: Evidence from the Romanian regulated market

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Abstract*: We have estimated the impact of some characteristics of the auditors and of the audited companies on the audit quality for the Romanian listed firms (736 observations for 2007-2016 period), using as proxy for the audit quality the level of discretionary accruals, measured following the Jones (1991) model and accruals quality, estimated through Dechow and Dichey (2002) model. These dependent variables have been related to variables that reflect both the characteristics of the audit firm (for example, Big 4 membership) and the characteristics of the audited firms (dimension, financial leverage, accounting standards applied, growth and profitability). Our results show that the auditor's Big 4 membership contributes to an increase in discretionary accruals, decreasing the quality of the audit. The transition to IFRS did not have a significant influence on the quality of the audit. The audit opinion may have an effect on the discretionary accruals, in the sense that a modified opinion leads to an increase in the quality of the audit in the following financial year(s).*

Keywords: *Audit quality, financial reporting quality, Romanian listed companies, auditor category, audited companies' characteristics.*

1. Introduction

The quality of the information presented in the financial statements is one of the most important topics in the accounting literature. There are many indicators to measure of this quality and its impact on a variety of variables, often driven by the behaviour of investors and other stakeholders. However, the financial information provided by listed entities is subject to the control of the financial auditor who, as an independent professional, is expected to confirm the conformity of the financial statements with the accounting standards applied by the audited entity. In this direction, the literature has developed strongly in the sense of analysing the quality of the financial audit, which offers additional guarantees on the quality of financial presentation.

The audit quality is the extent to which the market recognizes the ability of the auditor to detect and report breaches in the client's accounting and financial reporting system (DeAngelo, 1981); this means that the quality of the audit is a function of the auditor's competence and independence (Sirois *et al.*, 2016). Fremeaux and Noel (2009) add to this, the auditor's technical competence, the auditor's ethical competence and relational competence, as determinants of the quality of the audit. Good audit quality provides a high degree of assurance that the financial statements present fairly the financial position and performance of entities, based on the financial presentation system and the

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characteristics of the entity (DeFond and Zhang, 2014). The increase in the audit quality is related to certain variables, among which the improvement of the specific regulation (Knechel, 2016), but also the professional regulation, the size of the audit firm, the non-audit services, the length of the auditor's mandate, the corporate governance of the client, the auditor's specialization by industry, the protection of investors (Seckler *et al.*, 2017), the economic context (financial crisis: Ettredge *et al.*, 2017), the size and other characteristics of the firms audited (Comprix and Huang, 2015), the knowledge of the local market and the connections in the local business environment (Comprix and Huang 2015), the combination of the standards of audit and legal system of a country (Simunic *et al.,* 2017).

There are many variables used to measure the quality of the audit. O'Keefe *et al.* (1994) propose a model in which the level of audit quality is a function of the auditor's competence, knowledge of these clients, industry knowledge, quality of the employees, and the characteristics of the client. One of the most widely used measures is the association between audit quality and accounting conservatism. Cameran *et al.* (2016) identify many studies that take into account this association.

Beisland *et al.* (2015) warn us that the results proposed by audit quality studies in developed capital markets cannot be extended to other regions and economic contexts. Similarly, Fang *et al.* (2017) found in the literature that, in developing countries with limited investor protection, good quality audits are an important component of governance and leads to mitigating agency conflicts.

In the case of Romania - an emerging country whose financial market was created about 20 years ago - the application of international accounting, financial reporting and auditing standards is also recent. The relatively small size of the financial markets - a little more than 80 listed companies at the end of the year 2018 on the regulated market - mean that these firms are not often taken into account in studies concerning the quality of the financial statement, the audit quality or other recurring themes in international accounting research. In this context, we have mobilized a methodology often used in the literature, to try to establish a link between the quality of the audit - proxied by the *discretionary accruals* (DAC) and *accruals quality* (AQ) - and certain characteristics of the auditors (Big 4 vs. non-Big 4 and the type of opinion issued) and of the firms audited - profitability, dimension, financial leverage and growth. The study concerns a population made up of listed Romanian companies whose activities are non-financial, over a period of 10 years: 2007 - 2016. To our knowledge, there is no other study dealing in this manner with the audit quality, in the case of listed Romanian firms.

The contributions of our study relate to the confirmation of a better audit quality provided by a modified opinion expressed for de previous year, under certain conditions, by highlighting a better audit quality for large firms and the identification of a negative effect on the audit quality of firm growth (in the case of audit quality measured from level of DAC). The accounting standards and leverage have no significant effect on audit quality.

The rest of the paper includes a literature review and hypotheses development (Section 2), the methodology and data (Section 3), results and discussions (section 4), conclusions (section 5) and references.

2. Literature review

Although there are many studies that offer solutions for measuring the audit quality, the practical implementation of this measure remains difficult (Maroney, 2016), because the audit quality is difficult to observe (Beisland *et al. al.*, 2015). The level of auditor performance should be correlated with the types of entities audited, with the characteristics of audit firms (Du and Lai, 2018), with the regulatory framework (DeFond and Lennox, 2011). The literature does not provide a hierarchy of proxies for measuring audit quality because, and each one has its own limits (Fung *et al.*, 2017), but criteria for grouping these indicators into several categories are found. So, DeFond and Zhang (2014) provide *output* indicators of the audit process (significant errors, auditor communication ability, the quality of financial reporting, measures based on the perception of stakeholders) indicators on *inputs* of the audit process (auditor size, the auditor specialization by industry, audit fees). Gonthier-Besacier *et al.* (2012 and 2016) group 55 indicators in three categories: 1) the attributes of the audit engagement, 2) the characteristics of the interaction between the auditor and the representatives of a firm audited (the management, the audit committee, other corporate governance structures), the characteristics of the audit team and the audit firm and 3) the characteristics of audit regulation. In turn, Du and Lai (2018) considers that it is useful to analyse the audit quality based on the characteristics of the audited entities and audit firms, finding a better comparability of financial information between firms audited by the same auditor.

In the analysis of audit quality, the quality of the financial information presented by the firms is the main *input*. Among the most used characteristics – used as proxies for the audit quality – are the dimension of the discretionary accruals - DAC, the quality of the accruals (Fung *et al.*, 2017), the timeliness recognition of losses (DeFond and Zhang, 2014). A high level of audit quality is associated with a reduced size of the DAC (Chi *et al.*, 2017, Garcia-Blandon *et al.*, 2017), and the quality of the accruals conditions that of the audit (Mande and Son, 2015; Lambert *et al.*, 2017). Similarly, a high level of conditional conservatism - which consists of faster recognition of losses over earnings (Basu, 1997) - leads to better audit quality (Cameran *et al.*, 2016, Lobo *et al.*, 2017).

The organization and operational activity of audit firms offers a wide range of indicators that can measure the audit quality of the. It takes into account the auditor categories - generally Big N vs. non-Big N - (DeAngelo, 1981; Simons and Zein, 2016; Baskar *et al.*, 2017), specialization of the auditor by industry (DeFond and Zhang, 2014) or the international presence (Tsao *et al.*, 2017). Thus, the high concentration of the audit market can positively influence the audit quality (Francis *et al.*, 2017), as well as the proximity of the auditor's and his client's office (Choi *et al.*, 2012).

The specific contracts between the auditor and the client can indirectly determine the audit quality; audit fees are considered a proxy for the audit quality (Kausar *et al.*, 2016) and fees for non-audit services represent a factor that leads to a decrease in the independence of the auditor, that is, the decrease in the quality of the audit (Li *et al.*, 2017). In the same category, the tenure of the auditor's mandate (the rotation of the auditor and/or the partner) is related to the qualitative level of the audit (Lennox *et al.*, 2014, Garcia-Blandon *et al.*¸ 2017).

The outputs of the audit process directly reflect the audit quality by highlighting by the significant errors detected by the auditor (DeFond and Zhang, 2014; Mande and Son, 2015; Fung *et al.*, 2017) and this through the audit opinion (modified vs. unmodified) and/or through the emphasis of matters paragraph.

Audit quality studies use proxies found in the two categories previously described (inputs or outputs), highlighting the correlations between these proxies and other indicators (financial and/or non-financial). Thus, for example, the audit quality measured by the auditor category (Big N vs non-Big N) is often analysed in relation to the type of opinion: modified or unmodified (Chen *et al.*, 2017), with the dimension of the DACs (Comprix and Huang, 2015), with the identification of certain contracts violations, with the financial distress of the firms analysed (Bhaskar *et al.*, 2017) or with corporate governance indicators (Beisland *et al.*, 2015).

Mande and Son (2015) link the quality of accruals with the fees payed to the auditor for both audit and non-audit services. Yuan *et al.* (2016) find that the audit quality is influenced by the auditor's expertise by industry and by the client's business strategy, while the discretionary accruals dimension is correlated with the level of bonuses (Bryan and Mason 2017), with the tenure of the auditor contracts (Garcia-Blandon *et al.*, 2017), respectively, with the phase of the mandate of the auditor (Cameran *et al.*, 2016). The accruals (the Dechow and Dichev model, 2002) are used by Lambert *et al.* (2017) to identify the negative effects of the pressure on auditors by authorities that decrease the period of preparation of financial statements.

Fung *et al.* (2017) warn us that there are limits to all the indicators used to assess the audit quality - this is why authors are asked to take into account, at the same time, several indicators belonging to all categories, to overcome these limitations.

Creditors take into account, in the risk analysis they conduct, elements associated with the audit quality. Cano-Rodriguez and Alegria (2012) find, for Spanish companies, that entities audited by quality auditors bear lower costs of credit. Similarly, Fernando *et al.* (2010) identify an inverse dependence between the cost of equity and elements that allow the estimation of the quality of the audit: auditor's category, auditor's specialization, auditor's tenure. In the same sense, Robin *et al.* (2017) consider that good audit quality is negatively associated with the degree of violation of credit contracts, with positive effects on the cost of debt.

Other indicators used in the literature to estimate the financial audit quality:

- Lobo *et al.* (2018) estimate the audit quality using three proxies: Big 4 membership, auditor specialization by industry and audit effort measured by abnormal audit fees; they find that a good audit quality can mitigate the negative effects of innovations carried out by a company on the quality of the financial information it publishes;
- Lobo *et al.* (2017) use the goodwill depreciation to proxy the audit quality, because of the possibilities that management have to influence the accounting measurement and treatment of this depreciation; in the specific context of the French financial market – the mandatory joint audit system – they find a better audit quality is provided by the pairs of Big 4 + non-Big 4 auditors; to verify their results, Lobo *et al.* (2017) use consecrated measures of audit quality

(abnormal commitments and conditional conservatism) that confirm their conclusions;

- Smith and Emerson (2017) propose to identify low quality audits through certain auditors' behaviour who, for example, accept unconvincing explanations from their clients, who do not check how the audited company has applied one or more accounting principles, which made a superficial verification of documents, which do not respect entirely the procedures of an audit or whose volume of work is below what is considered reasonable; of course, information about this type of behaviour is not directly available, and the authors had to send questionnaires to auditors to identify and measure them;
- Chi *et al.* (2017) use discretionary accruals and interest rate spreads as proxies for "real" audit quality (measured by the DACs) and for the perception of this quality (measured by the interest rate spreads); the cost of debt as a proxy for creditors' perception of the audit quality is also used by Mansi *et al.* (2004);
- Mande *et al.* (2017) take into consideration the following proxies to measure the efforts of the auditors and audit quality: opinions including going concern observations, the closing date that may be in the high season (for example, 31.12) and the auditor category (Big N vs. others);
- Zhang *et al.* (2017) adds to the absolute value of discretionary accruals, the median by industry of non-recurring adjusted items[i], as proxies for the audit quality;
- Fang (2017) appreciate the influence of the auditor on the quality of financial information, using three proxies: the absolute value of discretionary accruals, the impact of restatements of financial statements after their publication and the percentage of sales to related parties, in accordance with the disclosure of pricing conditions;
- Robin *et al.* (2017) use the auditor category and the auditor's specialization as proxies for audit quality and found that higher quality audits contribute to better terms in credit agreements;
- Cameran *et al.* (2016) find that, in the case of Italy, the mandatory rotation of audit partners has a positive effect - under certain conditions - on the audit quality, but they do not find a similar relationship with respect to the rotation of the audit firm; the measurement of the audit quality is done through the modified audit opinion;
- Maroney (2016) analyses several studies that on the auditors' rotation and its effects on audit quality and find that the results of these studies are not necessarily convergent: there are some who find that rotation leads to an increase in quality, but there are others who do not find consequences of the auditor's rotation on the quality of the audit;
- Tsao *et al.* (2016) use three proxies to measure the audit quality: belonging to a Big 4, the specialization of the auditor and the internationalization of the auditor's activity;
- Păunescu (2015) analyses the audit quality by a proxy that takes into account how auditors apply the auditing standards in writing their reports;
- Mansi *et al.* (2004) find that the literature identifies very little evidence on the impact of the auditor's change on stock prices; the audit quality measures adopted by Mansi *et al.* (2004) are category of auditor and tenure of auditor.

The literature on the audit topics for the Romanian listed companies is not very rich and, in general, does not relate directly to the audit quality. Thus, Dănescu and Spătăcean (2018) analyse audit opinions for a limited sample of listed firms (32 firms for 9 years: 2009-2017), trying to identify the reaction of investors to modified opinions - this reaction can be described, according to the authors, as rational, in 48% of cases and irrational in 45% of cases. Istrate (2017) analyses the modified opinions received by the Romanian listed companies and identifies the main explanations offered by the auditors to justify these opinions. Robu *et al.* (2016) find that the rotation of auditors of Romanian listed firms makes a significant contribution to increasing the degree of relevance of the financial information provided. Dobre (2016) relates audit fees to certain governance indicators for Romanian listed firms and finds, for example, that the auditor's characteristics do not affect audit fees. In the analysis of audit quality in the case of Romanian listed companies, Păunescu (2015) groups auditors into three categories - Big 4 and other auditors internationally affiliated, non-Big 4 auditors working as individuals and other non- Big 4 local auditors – and analyses the audit quality by studying how auditors meet the requirements of auditing standards and finds that small local auditors are not always able to write good ISA compliant audit reports.

Considering the relationships identified in the literature, we aim to test the following working hypotheses:
H1: The auditor's reputation and client firm characteristics significantly influence the quality of the audit.
H2: The audit opinion expressed for the previous year and client firm characteristics significantly influence the quality of the audit.

3. Methodology and data

Our goal is to test the relationship between certain characteristics of the auditors (Big 4 vs. non-Big 4 and the type of opinion issued) and the specific of the audited firm, on the one hand, and quality of audit express by the level of discretionary accruals (DAC) and the quality of accruals (AQ), on the other hand.

Chen *et al.* (2017) consider that auditors - especially Big N - are more likely to provide modified opinions for clients in areas with a lower level of communication and significant DACs. Comprix and Hung (2015) find that firms that rely on small auditors have a higher probability of manipulating income through DACs. Simons and Zein (2016) find that, in general, the literature associates the auditor's dimensions with a high quality of the audit.

The dimensions of the DACs are significantly influenced by the auditor tenure; Garcia-Blandon *et al.* (2017) find a decrease in the audit quality (indicated by the increase in the DACs) for contracts exceeding 10 years. The quality of the accruals is influenced by the size of the audit fees as an exponent of the high effort made in the audit mission. (Mande and Son, 2015).

3.1. Population

The population we analyse in our study is formed by Romanian companies listed on the regulated market of the Bucharest Stock Exchange (BSE), after the elimination of financial intermediaries. The data concern the period 2007-2016 and were collected manually from the individual financial statements of the listed firms. In Table 1, we present some details on the firms analysed. There are two sub-periods, depending on the accounting standards applied: 2007-2011, with the application of Romanian accounting standards (RAS), in line with European directives and 2012-2016, with the application of IFRS. In the case of outliers, we proceeded to replace them with the nearest values in the distribution, as suggested by Hoaglin & Iglewicz[ii] (1987).

Table 1. **The population analysed in the study**

Year	*Accounting standards applied*	*Number of observations*	*Auditor category*			
			Big N		*Non-Big N*	
			N	*%*	*N*	*%*
2016	IFRS	68	22	32.35	46	67.65
2015	IFRS	70	24	34.29	46	65.71
2014	IFRS	69	23	33.33	46	66.67
2013	IFRS	71	25	35.21	46	64.79
2012	IFRS	68	22	32,35	46	67.65
2011	RAS	79	25	31.65	54	68.35
2010	RAS	78	23	29.49	55	70.51
2009	RAS	77	22	28.57	55	71.43
2008	RAS	79	20	25.32	59	74.68
2007	RAS	77	19	24.68	58	75.32
Total	**-**	**736**	**225**	**30.57**	**511**	**69.43**

(*Source:* Own processing)

The variables used in the statistical treatments are presented in Table 2.

Table 2. **Variables**

Variable	*Abbreviation*	*Description*
Discretionary accruals	DAC	This variable reflects the size of discretionary accruals
Accruals quality	AQ	Accruals quality measured with Dechow and Dichey (2002) model
Auditor category	Big 4	Dummy variable that takes the value 1 if the auditor is a Big 4 and 0 otherwise
Opinion	OP	Dummy variable that takes the value 1 if the audit opinion is unmodified and 0 for the modified opinions
Dimension	SIZE	Log of total assets
Leverage	FL	Total liabilities / equity
Operational profitability	ROA	Operating income / total assets
Sales growth	SalesGr	$(sales_{i,t} - sales_{i,t-1}) / sales_{i,t-1}$
Accounting standards	IFRS	Dummy variable which takes the value 1 if the financial statements are in conformity with the IFRS and 0 in the case of the application of the Romanian accounting standards (RAS)

(*Source:* Own processing)

Based on the origin of the accruals - the difference between cash accounting and accrual accounting - we calculated total accruals (TA) by following Pelucio-Grecco *et al.* (2014): the difference between net income (NI) and total net cash flow (CF). To estimate discretionary accruals (DAC), we used the Jones model (1991) - well known in the literature (Martinez-Ferrero *et al.*, 2017; Chi *et al.*, 2017; Garcia-Blandon *et al.* 2017; Heese, 2018) - whose relation is presented in equation no. 1.

$$\frac{TA_t}{A_{t-1}} = \boldsymbol{\beta_0} * \frac{1}{A_{t-1}} + \boldsymbol{\beta_1} * \frac{\Delta REV_t}{A_{t-1}} + \boldsymbol{\beta_2} * \frac{PPE_t}{A_{t-1}} + \boldsymbol{\varepsilon} \qquad (1)$$

where TA is the total ACCRUALS for year *t*, ΔREV is the change in sales in year *t* compared to year *t-1*, PPE represents the gross value of tangible fixed assets in year *t,* ε is the error term. DAC represents the absolute value of the residual component (the error).

In order to assess the quality of the accruals, we used Dechow and Dichev (2002) model, represented in equation no. 2.

$$\boldsymbol{TCA_t = \alpha_0 + \alpha_1 * CFO_{t-1} + \alpha_2 * CFO_t + \alpha_3 * CFO_{t+1} + \varepsilon} \qquad (2)$$

where TCA are the total current accruals of year *t*, calculated as the difference between the operating income (OI) and the operating cash flow (CFO); CFO represents the current year's cash flow from operating activities, the previous one *t-1* and the next year *t+1*. The quality of the accruals is measured by the standard deviation of the error. A reduction of standard deviation shows an increase in the quality of the accruals.

3.2. Method

The assessment of the audit quality by identifying a set of factors that reflect both the characteristics of the auditor and the characteristics of the auditee, is achieved by multiple regression analysis, with alternative variables (quantitative and dummy). The models we propose individualize the indicator associated with accruals, by correlating it with the characteristics of the auditor and the client. Thus, equations 3 and 4 present the relationships developed for the purpose of assessing the audit quality by the DAC level dimension.

$$\boldsymbol{DAC_{i,t} = \alpha_0 + \alpha_1 * BIG4_{i,t} + \alpha_2 * CLIENT\_LEV_{i,t} + \alpha_3 * IFRS_{i,t} + \varepsilon_{i,t}} \qquad (3)$$

Where DAC is the discretionary accruals of the firm *i* at the moment *t* (a reduced dimension of the DAC shows a high quality of the income, respectively of the audit), BIG4 shows the auditor category (Big4 or non-Big4) for the firm *i*, at the moment *t*, CLIENT_LEV expresses the variables specific to the customers, i.e. the dimension (SIZE), the financial leverage (FL), the profitability (ROA) and growth (SalesRG); IFRS shows the category of accounting standards applied by firm *i* in the year *t*, $\alpha_{0}, \ldots, \alpha_{i}$ are the parameters of the variables of the model, while $\varepsilon_{i,t}$ represents the error term.

$$\boldsymbol{DAC_{i,t} = \alpha_0 + \alpha_1 * Lag\_Opinion_{i,t-1} + \alpha_2 * CLIENT\_LEV_{i,t} + \alpha_3 * IFRS_{i,t} + \varepsilon_{i,t}} \qquad (4)$$

Lag_Opinion represents the type of audit opinion (modified or unmodified) for firm *i* and year *t-1*.

In order to assess the quality of the audit by using as proxies the accruals quality, models 5 and 6 were used.

$$\boldsymbol{TCA_{i,t} = \alpha_0 + \alpha_1 * CFO_{i,t-1} + \alpha_2 * CFO_{i,t} + \alpha_3 * CFO_{i,t+1} + \alpha_4 * BIG4_{i,t} + \alpha_5 * CLIENT\_LEV_{i,t} + \alpha_6 * IFRS_{i,t} + \varepsilon_{i,t}} \qquad (5)$$

where TCA are the total current accruals of year *t*, at the moment *t;* CFO represents the current year's cash flow from operating activities, for the firm *i*, at the moment *t, t-1* and *t+1*.

$$\boldsymbol{TCA_{i,t} = \alpha_0 + \alpha_1 * CFO_{i,t-1} + \alpha_2 * CFO_{i,t} + \alpha_3 * CFO_{i,t+1} + \alpha_4 * Lag\_Opinion_{i,t} + \alpha_5 * CLIENT\_LEV_{i,t} + \alpha_6 * IFRS_{i,t} + \varepsilon_{i,t}} \quad (6)$$

The quality is revealed by the size of the standard deviation of the error term. A drop in standard deviation shows an increase in accruals quality, so a higher audit quality.

4. Results and discussions

The results that we will present take into account both the descriptive analysis of the variables used, and the relationships between these variables, as they were proposed in the hypotheses.

4.1. Descriptive statistics

In Table 3, we have synthesized the distributions of the values of the variables used in the research. The analysis is first done at the level of the sample as a whole and, subsequently, taking into account the accounting standards applied (IFRS vs RAS).

Table 3. **Descriptive statistics of the analysed variables**

Elements	***N***	***Total sample***			***IFRS, 2012-2016***			***RAS, 2007-2011***		
		Mean	*Std. dev.*	*Median*	*Mean*	*Std. dev.*	*Median*	*Mean*	*Std. dev.*	*Median*
DAC	736	0.067	0.065	0.039	0.069	0.067	0.045	0.064	0.063	0.036
TCA	736	-0.014	0.078	-0.007	-0.023	0.076	-0.016	-0.007	0.080	0.000
ROA	736	0.029	0.075	0.030	0.022	0.077	0.023	0.035	0.072	0.037
CFO	736	0.038	0.078	0.025	0.046	0.075	0.032	0.032	0.080	0.019
FL	684	0.793	0.839	0.468	0.769	0.820	0.435	0.812	0.855	0.499
SalesGr	736	0.020	0.260	0.000	0.006	0.265	0.015	0.032	0.256	0.000
SIZE	736	19.01	1.5486	18.88	19.17	1.583	18.07	18.87	1.504	18.81

(*Source:* Own processing)

The descriptive analysis allows us to identify reduced values of the DACs, with a limited dispersion around the mean (Std.dev = 0.065), for all the observations as well as for the two categories of standards applied. Total current accruals (TCAs) are, on average, negative, but more pronounced in the IFRS period than in the RAS period. The firms analysed have reduced returns (ROA_{total} = 0.029), but relatively different per period (ROA_{IFRS} = 0.022 < ROA_{RAS} = 0.035), which can be explained by the standards applied, but also by the different economic context. Operating cash flows (relative to total assets) are higher in the IFRS period, which, correlated with the situation of the ROA, explains the decrease of the TCA by the reduction of the frequency of the appearance of the accounting choices generating accruals.

Business activity growth was significantly different between the two periods ($SalesGr_{IFRS}$ = 0.006 < $SalesGr_{RAS}$ = 0.032). This situation can be explained by the accounting standards applied, but we must not forget that the first period experienced the crisis started in 2008, with a decrease in revenues, but which was followed by the recovery which more than offset the effects of the crisis. As regards the leverage and size, there are no significant differences between the two periods, but the distribution of values shows a significant dispersion around the average, a situation specific to emerging countries.

Table 4 presents the associations between the variables studied. There are significant links between the dependent variable DAC, on one side, and the independent variables, on the other hand. These correlations generally follow the structure of the proposed econometric models. At the same time, there is no strong link between the independent variables, which eliminates the risk of collinearity.

Table 4. **Correlation matrix between the variables**

Variables	***DAC***	***TCA***	***BIG4***	***OP***	***ROA***	***LF***	***CFO***	***SIZE***	***Salesgr***	***IFRS***
DAC	1	-.107**	.050	.092*	-.095**	.067	.033	-.045	.056	.038
TCA		1	-.006	.009	.500**	.053	-.529**	-.065	.185**	-.099**
BIG4			1	-.016	.100**	.055	.098**	.511**	.058	.060
OP				1	.099**	-.117**	.219**	.074*	.030	.203**
ROA					1	-.212**	.355**	.102**	.249**	-.084*
LF						1	-.216**	.030	.125**	-.025
CFO							1	.174**	.035	.091*
SIZE								1	.061	.097**
SalesGr									1	-.050
IFRS										1

(*Source:* Own processing)

4.2. Empirical results

The audit quality is estimated through a single proxy - the dimensions of the DACs - in relation to the influences of several factors specific to both auditors and audited firms. The influences of the auditor category[iii] and the characteristics of the auditee are summarized in Table 5. Following the sequential test of the correlation, a significant influence of the type of auditor is identified, but only after the introduction into the analysis of the characteristics of the firms audited. Thus, we observe a negative impact of the auditor's affiliation to the Big 4 ($\alpha_{BIG4} = 0.015$), the dimension of the DAC being bigger in the case where the auditor belongs to the Big 4 group.

The size of the firms audited has a positive influence on the audit quality, by the decrease of the DAC. On the other hand, the growth of firms has a negative influence on the audit quality, probably because of the association of such growth with some techniques of manipulation of accounting numbers. Accounting standards, leverage and profitability have no influence on the level of DAC.

Table 5. **Influence of the Big 4 membership and of the characteristics of the audited companies on the DAC**

Independent variable	***Dependent variable - DAC***			
	1	2	3	4
Constant	0.065 (0.000)	0.114 (0.000)	0.152 (0.000)	0.153 (0.000)
BIG4 $_t$	0.007 (0.175)		0.015 (0.009)	0.015 (0.010)
SIZE		-0.003 (0.046)	-0.005 (0.003)	-0.005 (0.002)

Independent variable	*Dependent variable - DAC*			
	1	2	3	4
FL		0.005 (0.108)	0.004 (0.144)	0.004 (0.139)
ROA		0.042 (0.255)	0.036 (0.320)	0.037 (0.308)
SalesGr		0.028 (0.003)	0.028 (0.003)	0.028 (0.003)
IFRS				0.003 (0.593)
N	734	678	677	676
R^2	0.003	0.027	0.037	0.037
Sig F change	0.175	0.001	0.000	0.000

Note: Values of significance coefficients are presented between parentheses, with the study considering a 5% risk.

(*Source:* Own processing)

Table 6. **Influence of the audit opinion and of the characteristics of the audited companies on the DAC quality**

Independent variables	*Dependant variable - DAC*			
	1	2	3	4
Constant	0.059 (0.000)	0.114 (0.000)	0.109 (0.000)	0.109 (0.000)
OP	0.012 (0.013)		0.019 (0.000)	0.019 (0.000)
SIZE		-0.003 (0.046)	-0.003 (0.021)	-0.003 (0.024)
FL		0.005 (0.108)	0.006 (0.039)	0.006 (0.040
ROA		0.042 (0.255)	0.039 (0.285)	0.038 (0.295)
SalesGr		0.028 (0.003)	0.028 (0.003)	0.028 (0.003)
IFRS				-0.002 (0.728)
N	734	678	677	676
R^2	0.008	0.027	0.049	0.049
Sig F change	0.013	0.001	0.000	0.000

Note: Values of significance coefficients are presented between parentheses, with the study considering a 5% risk.

(*Source:* Own processing)

In Table 6 we present the results obtained after having tested the correspondences between the audit quality (measured by the size of the DAC) and the audit opinion for the previous year, taking into account the characteristics of the firms audited. A significant and positive influence of the audit opinion on the dimension of the DCAs is observed. As a result, a modified opinion for the previous year contributes to an increase in the audit quality. The direction of the influences of the variables specific to the firms audited is the same as in the relation which involves the type of the auditor. The size of the firm has a positive effect on the audit quality, while the sales growth can incorporate manipulative actions that contribute to the increase of the DAC. Profitability and the accounting standards applied does not exert significant influence.

Table 7 captures the variation in the quality of accruals, as proxies of audit quality, under the influence of the same mix of factors. Measured through standard deviation of the residual, the quality of the audit is influenced by the independent variables ($Std.dev._{model1.2}$> $Std.dev._{model\ 3.4.5}$). It is identified a significant influence only in case of ROA, while the auditor's membership of a particular group (BIG4 or non-BIG4) and the use of a particular accounting standards do not have significant influence.

Table 7. **Impact of the Big 4 membership and of the characteristics of the audited companies on the AQ**

Independent Variables	***Dependent variable - TCA***				
	1	2	3	4	5
Constant	-0.007	-0.009	0.013	0.015	0.015
	(0.053)	(0.019)	(0.295)	(0.303)	(0.304)
CFO_{t-1}	0.130	0.125	0.017	0.017	0.017
	(0.000)	(0.000)	(0.178)	(0.181)	(0.179)
CFO_t	-0.623	-0.626	-0.908	-0.908	-0.908
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
CFO_{t+1}	0.213	0.211	0.029	0.029	0.029
	(0.000)	(0.000)	(0.037)	(0.037)	(0.038)
BIG4		0.008		0.001	0.001
		(0.167)		(0.835)	(0.835)
SIZE			-0.001	-0.001	-0.001
			(0.237)	(0.256)	(0.268)
FL			7.731	6.075	4.802
			(0.951)	(0.961)	(0.969)
ROA			0.889	0.887	0.889
			(0.000)	(0.000)	(0.000)
SalesGr			-0.003	-0.003	-0.003
			(0.471)	(0.468)	(0.474)
IFRS					-0.001
					(0.778)
Std dev. eror	***0.0667***	***0.0666***	***0.0221***	***0.0221***	***0.0221***
N	516	516	516	516	516
R^2	0.322	0.324	0.914	0.914	0.914
Sig F change	0.000	0.000	0.000	0.000	0.000

Note: Values of significance coefficients are presented between parentheses, with the study considering a 5% risk.

(*Source:* Own processing)

The quality of audit, measured by the quality of the accruals, is significantly influenced by the audit opinion (according to the data presented in Table 8) only if it acts singularly ($Std.dev_{\ model\text{-}1}$ < $Std.dev._{\ model\text{-}2}$ and regression coefficient α is statistically significant).

In the case of the concurrent action of the audit opinion and of client characteristics, the influence of the expressed opinion is significant only by assuming a higher risk (9% and 10%), and ROA remains the only descriptive variable of the entity's activity with significant impact ($Std.\ dev._{\ model\ 1.2}$ > $Std.\ dev._{\ model\ 3.4.5}$).

Table 8. **Impact of the audit opinion and of the characteristics of the audited companies on the AQ**

Independent Variables	***Dependent variable - TCA***				
	1	2	3	4	5
Constant	-0.007	-0.021	0.013	0.011	0.011
	(0.053)	(0.000)	(0.295)	(0.401)	(0.405)
CFO_{t-1}	0.130	0.115	0.017	0.016	0.016
	(0.000)	(0.001)	(0.178)	(0.210)	(0.207)
CFO_t	-0.623	-0.640	-0.908	-0.910	-0.909
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)

Independent Variables	Dependent variable - TCA				
	1	2	3	4	5
CFO_{t+1}	0.213	0.211	0.029	0.030	0.030
	(0.000)	(0.000)	(0.037)	(0.030)	(0.032)
OP		0.023		0.004	0.004
		(0.000)		(0.103)	(0.094)
SIZE			-0.001	-0.001	-0.001
			(0.237)	(0.232)	(0.251)
LF			7.731	0.000	0.000
			(0.951)	(0.788)	(0.796)
ROA			0.889	0.887	0.887
			(0.000)	(0.000)	(0.000)
SalesGr			-0.003	-0.003	-0.003
			(0.471)	(0.485)	(0.496)
IFRS					-0.001
					(0.633)
Std dev. eror	***0.0667***	***0.0660***	***0.0221***	***0.0220***	***0.0220***
N	566	566	566	566	566
R^2	0.322	0.337	0.914	0.915	0.915
Sig F change	0.000	0.000	0.000	0.000	0.000

Note: Values of significance coefficients are presented between parentheses, with the study considering a 5% risk.

(*Source:* Own processing)

5. Conclusions

The purpose of this paper is to highlight how a measure of audit quality is influenced by variables specific to audit firms, on the one hand, and by variables specific to firms audited, on the other. We analyse companies listed on the Romanian financial market, which allowed us to obtain data on a little more than 700 observations, for a period of ten years, from 2007 (year of accession of Romania to the EU) to 2016.

Among the proxies presented in the literature and used to measure the audit quality, we have chosen the level of discretionary accruals and accruals quality. These dependent variables have been linked to variables such as the category of auditor, the audit opinion, certain financial characteristics of the firms audited (size, leverage, accounting standards applied). The Jones model (1991) for the estimation of DAC and Dechow and Dichey (2002) for measured of AQ are well known in the literature and we tried to apply them as such in the case of Romanian listed companies.

There are authors who warn us that the audit quality is not necessarily measurable in the same way in all contexts. Most studies analyse the Western financial markets and Romania is an emerging country with a recent financial market: in this context, we have not made any assumptions about the sense of the influence of the independent variables on the dependent variable.

Our results show that the auditors' Big 4 membership contributes to an increasing of DAC, i.e. a decrease in the audit quality. There is a positive effect on the audit quality, in the sense of a decrease in DACs, in the case of big companies. When we take into account the growth of firms, we find that a higher growth rate leads to more DAC, and therefore to a decrease in the audit quality. Romanian firms have been obliged to apply IFRS in their individual accounts since 2012. The transition to IFRS could have been expected to have a significant impact on DCA: this is not the case, according to the results of our model. The audit opinion may have an effect on the DACs and the AQ in the sense that a modified opinion leads to an increase in the audit quality in the following financial years.

The limitations of our study consist in the low size of the population analysed; we have not taken into account the explanations provided by the auditors in the justification of the modified opinions or in the emphasis of matters paragraph. All these limitations can represent as much future direction of research. To these directions, we can add a more in-depth analysis of the situation of firms that have received a modified opinion, by identifying the reasons given by the auditors to justify these modified opinions.

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[i] This median is calculated as follows: (net income - operating result + the result of other operations) / total assets, all adjusted by the median value of the industry.

[ii] Hoaglin and Iglewicz (1987) propose the use of a multiplier (whose value is 2.2), applied to the difference between quartile 3 (Q3) and the quartile 1 (Q1) of the analysed data series. The value thus obtained is used to adjust Q1 and Q3, so that the values which lie outside the interval [Q3 + n, Q1 - n] are considered extreme values and are replaced by the closest value in the distribution.

[iii] Beisland et al. (2015) consider that the use of the services of a Big N and the presence of the internal audit are indicators of the quality of the audit and test their relevance in correspondence with the mechanisms of corporate governance for 70 countries: they find a direct relation between the elements analysed. Big N auditors seem more concerned about offering quality services to protect their reputation and to limit the cost of potential litigation (Bhaskar et al., 2017).

PS7 ACCOUNTING AND FINANCE 1

Chairperson: Robert Faff, University of Queensland, Australia

Effects of West Texas Intermediate crude oil on stock markets (Romania, Austria, Hungary, Bulgaria, The Czech Republic and Poland)

Ștefan Daniel Armeanu
Camelia Cătălina Joldeș

Effects of West Texas Intermediate crude oil on stock markets in Central and Eastern Europe

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Abstract: *In this research, we analysed the link between WTI (West Texas Intermediate) crude oil and six indices of CEE (Central and Eastern Europe) stock markets (Romania, Austria, Hungary, Bulgaria, The Czech Republic and Poland) during October 2000-March 2019 to determine the specific nature of the linear connection between them. We also wanted to investigate the causality between oil price and capital market applying the Granger Causality test. According to our results, oil prices present a positive relationship with the stock markets and the Granger causality test confirmed the presence of a one-way causality from WTI crude oil to capital market.*

Keywords: *Oil price, CEE stock markets, linear regression, Granger causality.*

1. Introduction

There is a growing volume of research into the relationship between oil prices and share prices, most of which is focused on developed economies rather than on emerging economies. Oil prices play an extremely important role in the development of economies across the globe.

The main objective of this study is to investigate whether there is any influence from the price oil on the capital market. In this analyse, we undertook six CEE countries: Romania, Austria, Poland, Czech Republic, Bulgaria and Hungary. The variable chosen to represent the price oil is WTI crude oil and BET index (for Romania), ATX (Austria), BUX (Hungary), PX (Czech Republic), SOFIX (Bulgaria) and WIG (Poland) were used as a proxy for the capital market. Our data sample is monthly (October 2000 – March 2019).

The paper is organized as follows. Section 2 a brief research of the literature that tackled the study of the relationship between oil and the capital market. Section 3 describes the data source and methodology. Section 4 presents the results of the empirical study on the relationship between WTI crude oil and the six stock market indexes. Section 5 conclusions.

2. Literature review

The evolution of the oil price is a topic of interest due to the geopolitical tensions that have occurred in recent years.

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A significant number of countries were subjected to analysis by Nandha and Faff (2008) which studied the effect of oil price on stock market returns for 35 global industry indices between 1983-2005 period. The empirical findings suggest that the impact of oil price is negative on equity returns.

Also, Maghyereh (2004) selected 22 emerging economies and applied a VAR model to study the relationship between oil price and market return, during 1998-2004 period. The author demonstrated that oil shocks had no significant impact on stock index returns in emerging economies, contrary with prior research.

Fowowe (2013) investigated the relationship between oil prices and returns on the Nigerian Stock Exchange through GARCH models. The results showed a negative and small effect of oil prices on stock exchange due too high concentration of banking sector.

Adam, Rianse, Cahyono and Rahim (2015) applied a LVAR (liquidity adjusted value at risk) causal model to examine the relationship between WTI crude oil and Indonesian stock market between 2004-2013 period. It was identified a long-term and short-term positive relationship between oil price and stock market.

Kang, Ratti and Yoon (2015) investigated the impact of oil price shocks on US stock market applying a SVAR model. They discovered that oil price shocks contain information for forecasting the between stock return and stock volatility.

Mohanty, Nandha and Bota (2010) analysed the relationship between oil price and equity price of some oil and gas firms that are doing business in CEE countries (Czech Republic, Hungary, Poland, Romania, and Slovenia) through 1998-2010. The study results show that oil price shocks have no significant impact on oil and gas industry returns.

A probit-model to forecast the impact of oil prices on stock market indices for developed economies and Russia was used by Mikhaylov (2018). The empirical findings of the research show that the effect of oil prices on the stock markets is generally asymmetrical, but with exception of the Russian and Canadian stock markets, because depend on oil export.

Turhana, Hacihasanoglua and Soytasb (2012) analysed the relationship between oil price and exchange rates of 13 selected EMBI applying a VAR model and impulse-response function. They demonstrated that oil shocks have a stronger impact on the emerging economies in the present compared to the past.

A number of studies have been conducted for Romania as well by Ștefãnescu and Dumitriu (2013). They conducted a study regarding the influence of Brent oil price on the Bucharest Stock Exchange (BETC) using a GARCH model, during 2000-2013 period. During 2000-2006 and 2008-2013 was found a positive influence of oil price over stock market returns. Another study on Romania was led by Panait and Lupu (2009) in which employed a study of the Romanian capital market during 2007-2009 period. The empirical findings revealed a negative effect of the financial crisis toward Romanian capital market with a much stronger impact than other countries from the region. That’s probably due to lack of maturity of capital market.

Rai and Palash (2014) examined the effects of Brent oil changes on Indian stock market returns for the period 2003-2012 through correlation analysis and regression. The study confirmed a weak relationship between oil price changes and returns on Indian stock market.

Khan (2010) assessed the influence of the impact of Brent oil on the stock market for BRIC countries applying VECM. The empirical findings revealed that the oil price and stock market return are co-integrated, meaning that between oil price and stock market exist a bidirectional, long-run relationship.

3. Data and methodology

We have selected a number of six CEE countries to analyse the effect of the WTI crude oil price on capital markets. As a proxy for the evolution of the capital markets, we decided to use stock indices such as ATX, BET, BUX, PX, SOFIX and WIG. In the study, we will use daily data from October 2000 to March 2019, and the source of the database is Thomson Reuters Eikon.

Table 1. **Description of variables**

Variables	Description	Period	Source
ATX	The ATX is the most important stock market index of the Wiener Börse and like most European indices is defined as a price index and currently consists of 20 stocks.	10/20/2000 -3/12/2019	Thomson Reuters Eikon
BET	BET is the first index developed by Bucharest Stock Exchange (BSE) and is the reference index of the local capital market. BET reflects the evolution of the most traded companies on the regulated market of BSE, excluding financial investment companies.	10/20/2000 -3/12/2019	Thomson Reuters Eikon
BUX	The BUX is a blue chip stock market index consisting up to 25 major Hungarian companies trading on the Budapest Stock Exchange.	10/20/2000 -3/12/2019	Thomson Reuters Eikon
PX	The PX index is the official price index of the Prague Stock Exchange and is made up of the most liquid stocks.	10/20/2000 -3/12/2019	Thomson Reuters Eikon
SOFIX	The SOFIX is the first official stock market index of the Bulgarian Stock Exchange, which tracks the performance of the most liquid companies listed.	10/20/2000 -3/12/2019	Thomson Reuters Eikon
WIG	WIG is the oldest index of the Warsaw Stock Exchange and comprises all companies listed at WSE Main List that meet base eligibility criteria.	10/20/2000 -3/12/2019	Thomson Reuters Eikon
WTI	West Texas Intermediate (WTI) is a grade of crude oil used as a benchmark in oil pricing	10/20/2000 -3/12/2019	Thomson Reuters Eikon

(*Source*: http://www.bvb.ro/, https://www.wienerborse.at/, https://www.bse.hu/, https://www.pse.cz/, https://www.bse-sofia.bg/bg/, https://www.gpw.pl/)

In this article, we intend to analyse the effect of WTI crude oil on capital markets in six CEE countries. We will estimate the equations for each of the six countries to see how the oil price affects the evolution of the stock market index. We will also apply the Granger Causality test to determine the presence of causality from the oil price to the capital market, if it exists or not.

In analysing the link between two statistical variables, it is to determine the specific nature of the linear connection between them, which is described by a mathematical equation.

This approach is the prognosis of the values of one of the variables based on the values of the other, predicted on the basis of the equation describing the link between the two data sets. The way of presenting the linear link between two variables when it exists, is called linear regression. For this, one variable is considered as an independent variable or variable predictor, and the other variable as a dependent variable or variable response.

We will have the following equation:

$$x_t = \alpha_t + \beta_t WTI + \varepsilon_t$$

Where t=1,…6 and x_t represent the stock indices for Romania, Austria, Hungary, Bulgaria, the Czech Republic and Poland, respectively.

In estimating the equations, we will use stationary data series (the first difference is used to get a stationary series). For example, over the BET series, we applied the first difference and the first difference series will be called dBET.

The evolution of the six stock indices and WTI crude oil are presented below:

Graph 1. **The evolution of stock market indices and WTI**

(*Source*: Thomson Reuters)

According to graphical representations, the data series are non-stationary but this observation must be confirmed by the Augmented Dickey-Fuller stationarity test. In addition, from the graphs it can be observed the positive correlation between stock indices and WTI crude oil.

4. Results and interpretation

For both stock indices and WTI crude oil, we used closing prices. Table 2 presents descriptive statistics of the variables analysed.

Table 2. **Descriptive statistics**

	ATX	BET	BUX	PX	SOFIX	WIG	WTI
Mean	2532.601	5351.307	19939.72	1007.602	554.055	40138.01	63.33391
Median	2454.955	5672.27	19361.04	994.38	460.86	43570.13	60.335
Maximum	4981.87	10813.59	41516.41	1936.1	1952.4	67568.5	145.31
Minimum	1003.72	501.18	5670.98	320.1	70.54	11564.6	17.5
Std. Dev.	939.939	2518.441	8718.223	348.6932	349.4272	15312.25	26.44478
Skewness	0.468433	-0.406841	0.454139	0.245632	1.439273	-0.374025	0.316444
Kurtosis	2.752208	2.181601	2.814629	3.004426	5.400781	1.987655	2.225925
Jarque-Bera	187.7453	266.2602	171.7948	48.25172	2808.783	316.7522	199.8645
Probability JB	0	0	0	0	0	0	0

(*Source*: Own calculations)

The variables that presents a negative Skewness values reflect an asymmetric distribution to the left, and the ones with positive values presents a distribution with asymmetry to the right. The kurtosis of PX and SOFIX exceeds 3, so the distribution is leptokurtic and for the rest of the series the kurtosis is less than 3, the distribution is flat relative to the normal.

The Jarque-Bera test statistic is used for testing whether the series is normally distributed. In all cases, the null hypothesis of a normal distribution is rejected at the 5% significance level.

The next step in our research is choosing the number of lags. The simplest, the choice of lags is made using the information criteria. The information criteria quantify the part of the endogenous variable that is not explained by the model.

Table 3. **Lag-order selection**

	LR	FPE	AIC	SC	HQ	Lag.
ATX	6	6	6	2	2	6
BET	6	6	6	2	2	6
BUX	6	7	7	1	3	7
PX	6	7	7	2	3	7
SOFIX	9	9	9	2	8	9
WIG	6	2	2	2	2	2

(*Source*: Own calculations)

Checking the time series stationarity was achieved by applying the Augmented Dickey-Fuller test (ADF). The test results can be found in Table 4.

Table 4. **The ADF unit root test results**

		Level		**1st difference**	
	Test critical values	**t-Statistic**	**Prob.***	**t-Statistic**	**Prob.***
ATX-ADF test statistic		-1.73208	0.4149	-66.6694	0.0001
	1% level	-3.43153		-3.43153	
	5% level	-2.86195		-2.86195	
	10% level	-2.56703		-2.56703	
BET- ADF unit root test		-1.70776	0.4273	-64.0176	0.0001
	1% level	-3.43153		-3.43153	
	5% level	-2.86195		-2.86195	
	10% level	-2.56703		-2.56703	
BUX- ADF unit root test		-0.15158	0.942	-50.8845	0.0001
	1% level	-3.43153		-3.43153	
	5% level	-2.86195		-2.86195	
	10% level	-2.56703		-2.56703	
PX- ADF unit root test		-1.69522	0.4337	-50.2262	0.0001
	1% level	-3.43153		-3.43153	
	5% level	-2.86195		-2.86195	
	10% level	-2.56703		-2.56703	
SOFIX- ADF unit root test		-1.55715	0.5045	-20.0766	0
	1% level	-3.43153		-3.43153	
	5% level	-2.86195		-2.86195	
	10% level	-2.56703		-2.56703	
WIG- ADF unit root test		-1.30441	0.6298	-64.9171	0.0001
	1% level	-3.43153		-3.43153	

	5% level	-2.86195		-2.86195	
	10% level	-2.56703		-2.56703	
WIT- ADF unit root test		-1.93098	0.3182	-73.0514	0.0001
	1% level	-3.43153		-3.43153	
	5% level	-2.86195		-2.86195	
	10% level	-2.56703		-2.56703	

(*Source*: Own calculations)

If the test value is greater than the critical value, the null hypothesis is not rejected - the series has a single root (non-stationary). In this case, the null hypothesis is not rejected - the series is non-stationary. All variables are non-stationary (I (1)).

In estimating the equations, we have to use stationary data series so over all the variables we applied the first difference.

Table 5. **Estimated equations**

Dependent Variable: **DATX**				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
DWTI	**6.428198**	0.350735	18.32781	**0**
C	0.357043	0.501755	0.711588	0.4768
Dependent Variable: **DBET**				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
DWTI	**7.790463**	0.758278	10.27388	**0**
C	1.507853	1.08478	1.390008	0.1646
Dependent Variable: **DBUX**				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
DWTI	**37.10424**	2.73021	13.59025	**0**
C	6.643941	3.905792	1.701048	0.089
Dependent Variable: **DPX**				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Variable**
DWTI	**2.12735**	0.131882	16.13066	**0**
C	0.105224	0.188669	0.557716	0.5771
Dependent Variable: **DSOFIX**				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
DWTI	**0.432386**	0.079414	5.444721	**0**
C	0.098814	0.113608	0.869779	0.3845
Dependent Variable: **DWIG**				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
DWTI	**73.55343**	4.543146	16.18998	**0**
C	8.6668	6.499347	1.333488	0.1824

(*Source*: Own calculations)

In table 5 contain for each independent variable, the standard error, the t-Statistic test and the associated probability. We will appreciate a 5 percent relevancy level, with probabilities attached to the t-statistical test being inferior to this level, therefore independent variables are considered statistically significant.

In all cases, the WTI crude oil coefficient is positive, meaning that there is a positive relationship between oil and stock market indices, so a unit widening of WTI crude oil will cause an increase on capital market by about 6.42 units (in the case of the Vienna Stock Exchange).

There is a more pronounced impact of WTI crude oil on the Polish and Bulgarian capital markets, oil causes a significant change in the indexes of these countries (73.55 respectively 37.10).

To identify the existence of a one-way relationship from one sense to another or the existence of a bidirectional connection between two or more macroeconomic variables, the most common methods are Granger causality. This test indicates which variables are useful for forecasting other variables. More precisely, we can say that WTI crude oil causes Granger on ATX if an ATX forecast made on the basis of a set of information that includes the history of WTI crude oil is better than a forecast that ignores the history of WTI crude oil.

Table 6. **The Granger causality test**

Null Hypothesis:	**F-Statistic**	**Prob.**
DWTI does not Granger Cause DATX	2.18542	0.0415
DWTI does not Granger Cause DBET	4.2062	0.0003
DWTI does not Granger Cause DBUX	1.64669	0.1175
DWTI does not Granger Cause DPX	2.6425	0.01
DWTI does not Granger Cause DSOFIX	2.72975	0.0035
DWTI does not Granger Cause DWIG	3.83483	0.0217

(*Source*: Own calculations)

As we expected, the capital markets (except Bulgaria) are influenced by the evolution of WTI crude oil. According to the results of the Granger causality test WTI crude oil the presence of a one-way causality is confirmed.

5. Conclusions

The main objective of this research was to determine whether there is any influence from the price oil on the capital market. In this analyse, we undertook six CEE countries: Romania, Austria, Poland, Czech Republic, Bulgaria and Hungary. The variable chosen to represent the price oil is WTI crude oil and BET index (for Romania), ATX (Austria), BUX (Hungary), PX (Czech Republic), SOFIX (Bulgaria) and WIG (Poland) were used as a proxy for the capital market. Our data sample is monthly (October 2000 – March 2019).

The empirical results confirmed the presence of a positive relationship between WTI crude oil and capital market indices. We observed a more pronounced impact of WTI crude oil on the Polish and Bulgarian capital markets, oil causes a significant change in the indexes of these countries (an increase of a unit of WTI crude oil will cause an increase on capital market by about 73.55 respectively 37.10 units).

All CEE stock markets, with the exception of Bulgaria, presented a causal relationship with the price oil. According to the results of the Granger causality test it can be affirmed the presence of a one-way causality. Consequently, the forecast of the stock indices made on the basis of a set of information that includes the history of WTI crude oil is better than a forecast that ignores the history of WTI crude oil.

This paper investigated the relationship between oil price evolution and several CEE stock markets. We strongly believe that our findings should be of interest to researchers, investors and regulators.

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PS8 FINANCIAL STRUCTURE AND INTANGIBLES

Chairperson: Allan Hodgson, University of Queensland, Australia

The financial structure influence on the cost of capital

Rodica Baciu

Petre Brezeanu

The financial structure influence on the cost of capital

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Abstract: *The goal of any business is to maximize assets and minimize costs. In this regard, it is necessary to analyze the weight of each financing state (own funds or debts) in the share of total financing. In other words, all companies are looking to optimize their financial structure and to maximize its value. Thus, this paper intends to analyze the neutrality of the financing policy against the average cost of capital, using the model of Moglidiani and Miller. The neutrality of the relationsheep between financing policy and average cost of capital is analyzed using a linear regression model, where the dependent variable is the weighted average cost of capital (WACC), and the independent variable is considered the financial structure, represented by the financial leverage. The model will be applied to all companies active in the wholesale of motor vehicle parts and accessories (NACE 4531), with extended financial statements. The results obtained using the Eviews software demonstrate the initial hypothesis.*

Keywords: *Financial structure, weighted average cost of capital, neutrality of the financing policy, financial leverage, panel data regression.*

1. Introduction

The research by Modigliani and Miller in 1958 has drawn attention to the fact that the value of a company is independent of its finishing structure taking into account certain assumptions: "In conditions in which there is no profit tax, the total market value of the firm is independent by the capital structure. The total market value is the expected future operating profits flow, updated with an appropriate rate of the risk class of the business in which the enterprise act.

According to Modigliani and Miller's conclusion, internal and external financing can be considered substitutable under an efficient financial market where there are no trading, bankruptcy, and no tax costs, and production activity is independent of the method of finalizing it. The capital structure becomes relevant in the absence of these effective market assumptions. In addition, companies may be faced with restrictions on access to finance from external sources and the cost of external funding varies according to sources.

The Modigliani-Miller theorem is a key pillar in modern finance. The theory has revolutionized corporate finance since it was introduced and it represents the starting point for elaborating the modern theories of capital structure. Over time, a series of theories about capital structure have emerged, such as: Trade-off theory (Myers,1984), Theory of the Firm (Jensen & Meckling, 1976) and Market timing hypothesis (Baker & Wurgler, 2002). All these theories are based on the M & M model, but in contrast to this model, these theories show a number of major drawbacks: Theory of the Firm leads

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to some controversial results that cannot explain the capital structure of enterprises and does not provide practical recommendations. Market timing hypothesis does not define an optimal capital structure and there are not enough empirical studies validating the hypotheses of this theory. These disadvantages are an essential reason for using the Modigliani-Miller model in this paper. Strengths, weaknesses and theoretical implications are presented in **Table 1**:

Table 1. **Strengths, weaknesses and theoretical implications of Modigliani and Miller's theorem**

Theoretical implications	Strengths	Weaknesses
The indebtedness of an enterprise does not influence its market value.	Is the most important example of business financing theory (Ross *et al.*, 1993).	Does not consider taxes, bankruptcy costs and other agent costs (Stiglitz, 1969).
The weighted average cost of an enterprise's capital is not influenced by the degree of indebtedness.	Represents the starting point for elaborating the modern theories of capital structure	Does not differentiate between individuals and legal entities in terms of indebtedness.

(*Source*: Compiled by the authors)

The **financial structure** of the enterprise is represented by a complex and coordinated ensemble of the different sources of finance that the financial manager uses to meet financing needs. In other words, the financial structure can also express the existing ratio between short-term and long-term funding. At enterprise level, the term of financial structure reflects the composition of the capital or the totality of capital components. For this reason, it is called the structure of the capital of the enterprise. Accordingly, the financial structure or the capital structure of the enterprise is the sum of the sources of financing involved in forming the capital invested in enterprises. The main criteria that characterize the choice of an optimal financial structure are as follows:

- The leverage effect;
- Financial profitability;
- Lending capacity.

Weighted average cost of capital (WACC) represents a calculation of the company's cost of capital, in which each category of capital is proportionately weighted. In WACC calculation are included all sources of capital, including common stock, bonds, preferred stock and any other long-term debt.

2. Literature review and previous studies

The creation of shareholder represents the essence of financial management. According to Ehrhard and Bringham (2003), the value of the business based on business continuity expectations is the present value of all expected future cash flows to be generated by the assets weighted at the weighted average cost of capital (WACC). Thus, the direct impact that WACC has on the value of a business can be observed (Johannes and Dhanraj, 2007). To find the right capital structure that will maximized stockholder wealth it is necessary to choose between debt and equity. WACC is used to define a firm's value by discounting future cash flows. Minimizing WACC of any firm will maximize value of the firm (Messbacher, 2004). Ross's (1977) model suggests that the values of firms will rise with leverage, since increasing the market's perception of value.

In their second paper on corporate capital structure, Modigliani and Mill (1963) show that firm value is an increasing function of leverage due to the tax deductibility of interest payments at the corporate level. A negative correlation between leverage and performance, described by the ratio of earnings before interest and tax to total assets, was found in the Chinese firms (Huang and Song, 2006; Chakraborty, 2010). There are also studies such as Ebaid's (2009), where no significant impact was found between capital structure choices and performance. Studies analysing the impact of financing decisions on performance and profitability usually employ some of the most relevant capital structure determinants.

The trade-off theory as established by Myers (1984) states that the decision on the source of capital for a firm is evaluated based on the various costs and benefits associated with different sources of financing in their quest to obtain an optimal capital structure. The firm is exposed to bankruptcy costs, agency costs and the benefits associated with debt when evaluating the best source of financing. Bankruptcy costs are costs incurred by the firm when the probability of default on financing is greater than zero (Chen, Jung, & Chen, 2011).

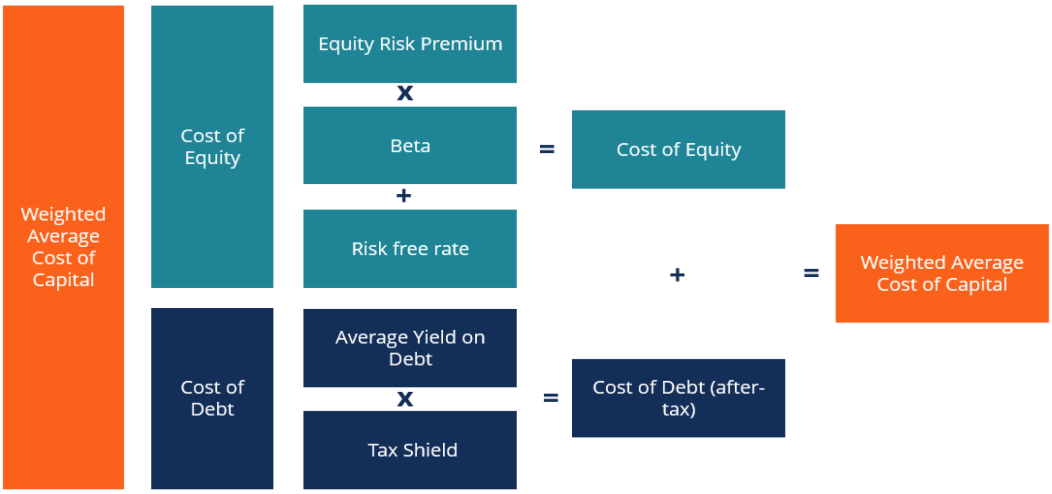
The pecking order theory originated by Myers and Majiluf (1984) suggests that firms have a preference for internal funds before sourcing for external funds. The firm will prefer retained earnings to short-term debt, short-term debt to long-term debt and long-term debt to equity. This is because firms will look for ways to minimize additional costs of raising capital when sourcing for external finance.

3. Data and methodology

Modigliani's and Miller's theorem are the basis of two main propositions. The first sentence refers to the irrelevance of the capital structure, while the second relates to the influence of the capital structure on the cost of equity. According to the second proposition, the authors have shown that the market value of a company is independent of the capital structure. Thus, the market value is considered to be constant regardless of the share of debt and equity. The hypotheses that the authors have left regarding the lack of bankruptcy costs, namely the costs of liquidity shortages, the fact that all enterprises should be in the same class of risk and that the capital market is free of oscillations, etc.

As can be seen in **Figure 1**, the financing and capital of the company consist of two main components: debt and equity. Lenders and shareholders are expected to receive some income from the funds or capital they have provided. Due to the fact that the cost of capital is the return that the owners (or shareholders) or the equity holders will expect, WACC indicates the return that both types of stakeholders (equity owners and creditors) can expect to receive.

Figure 1. **Calculation of weighted average cost of capital**



(*Source:* https://corporatefinanceinstitute.com)

2.1. Sample

The used model is applied to all the companies active in the wholesale of motor vehicle parts and accessories, NACE 4531, with extended financial statements submitted for the entire appraised period were taken into consideration (to eliminate the survivorship effect). Since we need extended format of the financial statements, only companies with turnover above 1 mil. EUR have been included.

Table 2. **Number distribution of companies**

Year/Number	1 - 2,5 MIL EUR	2,5 - 5 MIL	5 - 10 MIL	10 - 50 MIL	+ 50 MIL	Total
2008	79	45	17	19	7	167
2009	100	47	21	20	8	196
2010	106	48	20	21	8	203
2011	109	48	24	20	8	209
2012	117	50	25	21	8	221
2013	120	53	26	21	8	228
2014	127	53	27	22	8	237
2015	130	55	28	22	8	243
2016	131	55	29	22	8	245
2017	130	55	29	22	8	244

(*Source*: Compiled by the authors)

2.2. Mode of analysis

WACC is calculated according to the following formula:

$$\mathbf{WACC} = \frac{\mathbf{E}}{\mathbf{V}} * \mathbf{R_e} + \frac{\mathbf{D}}{\mathbf{V}} * \mathbf{R_d} * (\mathbf{1} - \mathbf{T_c}), \text{ where:}$$

- **Re** = cost of equity
- **Rd** = cost of debt
- **E** = market value of the firm’s equity
- **D** = market value of the firm’s debt

- **V = E +** D = total market value of the firm's financing (equity and debt)
- **E/** = percentage of financing that is equity
- **D/V** = percentage of financing that is debt
- **Tc** = corporate tax rate

Leverage is calculated according to the following formula:

$$\textbf{Lev} = \frac{\textit{Total Liabilities}}{\textit{Total Shareholder's Equity}}$$

2.3. Data source

The following table illustrates the results of the calculation of the weighted average cost of capital and of the calculation of the financial leverage applied to a sample of companies active in the wholesale of motor vehicle parts and accessories (NACE 4531) for the entire period considered (2008-2017). In the absence of tax, the values for WACC are quite close in value. In the case of the calculation of the financial leverage, the lowest value is recorded in 2017. These results from the higher interest on debt than the investment return. High leverage for 2015 indicates that companies are using debt to fund its assets and operations. For example, a WACC of 11.38% in 2008 means that companies must pay an average of $ 0.113 to an average investor for any $ 1 additional funding. A high weighted average cost of capital, or WACC, is typically a signal of the higher risk associated with a firm's operations. Investors tend to require an additional return to neutralize the additional risk.

Table 3. **WACC and leverage distribution**

Year	WACC	Leverange
2008	0.11387105	6.56456968
2009	0.11373471	2.95937614
2010	0.11764993	0.58994726
2011	0.11718299	3.09834259
2012	0.11339586	4.49172058
2013	0.11751038	3.10748432
2014	0.11733999	5.71851524
2015	0.11438901	14.2208203
2016	0.1172533	-1.94621014
2017	0.11787051	-22.4320418

(*Source*: Compiled by the authors)

Shareholders' equity, which is listed on the balance sheet, is used by investors to determine the financial health of a company. Shareholders' equity represents the amount that would be returned to shareholders if all the company's assets were liquidated and all its debts repaid. In short, shareholders' equity measures the company's net worth (Investopedia).

The leverage is negative in some situation because the shareholders' equity is negative based on the poor profitability in curent year or in previos years, also the high debt ratio has an infuence, as can be seen in table 4.

For the companies active in this sector, the commercial debts are very important and have a high accesability, the produces of car parts support the distribuitors with longer payments time, to help them to create sufficient inventory and to extend the availability rate of the products.

Table 4. **Evolution of companies in the sector of wholesale trade of parts and accessories for motor vehicles (NACE: 4531)**

Indicator (mil. RON)	**2017**	**2016**	**2015**	**2014**	**2013**	**2012**	**2011**	**2010**	**2009**	**2008**
No. of active companies	2,137	2,115	2,138	2,120	2,173	2,201	2,119	2,309	2,440	2,861
Total revenues	10,338	10,328	9,047	8,138	7,428	7,260	7,198	7,157	6,084	6,128
Income index %	0.	14.1	11.17	9.56	2.31	0.86	0.57	17.64	-0.72	
Average turnover	4.87	4.83	4.23	3.84	3.42	3.30	3.40	3.10	2.49	2.14
Net result (%)	**3.57%**	**1.1%**	**2.36%**	**1.50%**	**0.50%**	**0.43%**	**2.80%**	**2.28%**	**2.62%**	**3.23%**
ROE (%)	12.5	5.2	10.36	6.10	2.05	1.70	10.61	8.59	8.41	13.72
ROA (%)	5.1	1.15	3.47	2.10	0.68	0.58	3.92	3.07	3.26	4.56
Debt ratio (%)	**61.2**	**64.8**	**66.8**	**65.4**	**66.8**	**65.3**	**62.2**	**63.4**	**60.4**	**58.1**
Market share companies turnover > EUR 50 mil. (%)	34.7	34.1	33.7	29.9	27.4	19.4	22.6	25.1	19.9	7.1

(Source: Ministry of Public Finance, National Trade Register Office, data processed by the authors)

2.4. Empirical model

To analyse the influence of an enterprise's financial structure on its capital, we use a linear regression model of the form:

Y=α+β*X+e

Table 5. **The analysis of model variables**

Y	$\frac{\boldsymbol{E}}{\boldsymbol{V}} * \boldsymbol{R_e} + \frac{\boldsymbol{D}}{\boldsymbol{V}} * \boldsymbol{R_d} * (\boldsymbol{1} - \boldsymbol{T_c})$	The endogenous variable reflects **weighted average cost of capital.** It's an internal calculation of firm's cost of capital.
X	$\frac{\boldsymbol{Total\ Liabilities}}{\boldsymbol{Total\ Shareholder's\ Equity}}$	The exogenous variable reflects **leverage ratio** for evaluating financial structure. A high debt/equity ratio generally indicates that a company has been aggressive in financing its growth with debt. Typically, a D/E ratio greater than 2.0 indicates a risky scenario for an investor. Negative leverage occurs when a company purchases an investment using borrowed funds, and the borrowed money has a greater cost, or higher interest rate, than the return made on the investment

(*Source*: Compiled by the authors)

3. Results and discussions

Applying the regression equation previously described on the data panel in E-Views, we obtain the following result on which interpretations will be made:

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LEV	-0.000103	6.07E-05	-1.695808	0.1284
C	0.116188	0.000554	209.7293	0.0000
R-squared	0.264420	Mean dependent var		0.116020
Adjusted R-squared	0.172472	S.D. dependent var		0.001895
S.E. of regression	0.001723	Akaike info criterion		-9.712092
Sum squared resid	2.38E-05	Schwarz criterion		-9.651575
Log likelihood	50.56046	Hannan-Quinn criter.		-9.778479
F-statistic	2.875765	Durbin-Watson stat		2.138562
Prob(F-statistic)	0.128365			

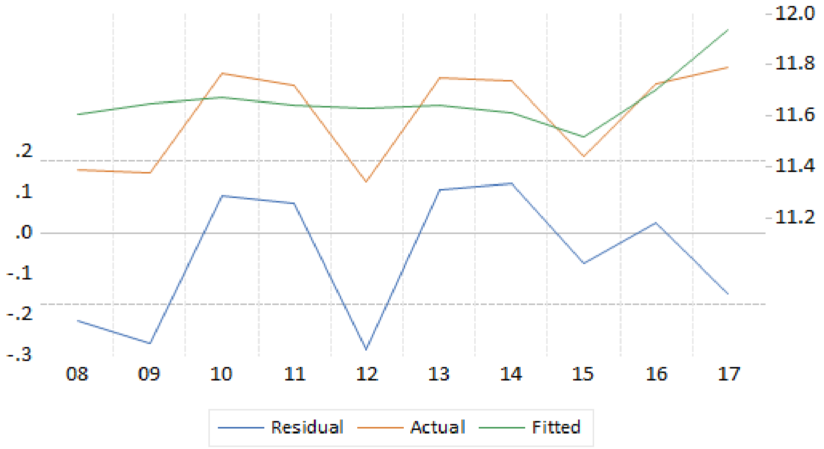
(*Source*: Compiled by the authors)

Interpretations: The intercept is significantly different from zero to a confidence level of 1%. Instead, the slope of the regression curve is no different than 0 because of its p-value that is at a level of 12%, well above the maximum risk level of 5%. In this case, we accepted the null hypothesis that leads to the conclusion that all slope coefficients are zero. Coefficient of independent variable indicates an inverse relationship between the financial leverage and the WACC, but its influence on the dependency variable is very low due to the value of the coefficient approaching 0. A very important indicator that shows if the model is well-specified is R-squared. In our case, we notice a very low value for R-squared. The value of the coefficient indicates that only 26% of the changes in the endogenous variable can be explained by the other variables that compose the regression model. The low value of R-squared is normal given the very low value of the coefficient of the independent variable. The results obtained can also be influenced by the rather small number of observations. This is due to the fact that the values for the financial leverage and the WACC for the studied period were selected as average values. We then analyse the results obtained using panel data.

In iterative terms, a series of econometric estimates will be applied to analyse how the errors evolve. Initially, the intercept was set at the average of the sample (WACC), and by restricting the value of intercept we determined the Beta value. Thus, the following results were obtained:

	Coefficient	Std. Error	t-Statistic	Prob.
C(1)	-0.011492	0.004702	-2.444058	0.0371
R-squared	0.152298	Mean dependent var		11.60198
Adjusted R-squared	0.152298	S.D. dependent var		0.189458
S.E. of regression	0.174436	Akaike info criterion		-0.559882
Sum squared resid	0.273850	Schwarz criterion		-0.529624
Log likelihood	3.799412	Hannan-Quinn criter.		-0.593076
Durbin-Watson stat	1.838596			

(*Source*: Compiled by the authors)



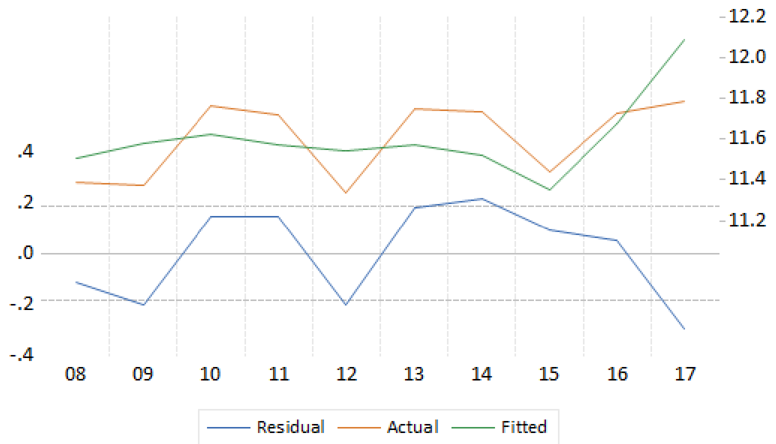
(*Source*: Compiled by the authors)

Interpretation: On the basis of the results obtained in the case of Intercept's restriction, Prob. indicates a value of 0.0371. Considering that the probability associated with the lowest relevant level (5%), then the null hypothesis is rejected and the coefficient is considered to be statistically significant. The value of the coefficient is very low (-0.011), influencing the endogenous variable negatively. Analysing the graph above, we notice that the residual comes out of the base of error. This is due to the limited registration number.

Next, Beta is restricted to determine the value of Intercept. The following results were obtained:

	Coefficient	Std. Error	t-Statistic	Prob.
C(1)	11.63472	0.059038	197.0720	0.0000
R-squared	0.028966	Mean dependent var		11.60198
Adjusted R-squared	0.028966	S.D. dependent var		0.189458
S.E. of regression	0.186694	Akaike info criterion		-0.424049
Sum squared resid	0.313693	Schwarz criterion		-0.393791
Log likelihood	3.120246	Hannan-Quinn criter.		-0.457243
Durbin-Watson stat	1.707083			

(*Source*: Compiled by the authors)



(*Source*: Compiled by the authors)

Interpretation: In this case, we see how residual evolves closer to the error band. The value of the coefficient indicates that, if the financial leverage is 0, the WACC is 11.63.

The last econometric technique is the use of **Panel data regression**. In statistics and econometrics, panel data or longitudinal data are multi-dimensional data involving measurements over time. By combining data in two dimensions, panel data gives more data variation, less collinearity and more degrees of freedom. Given the overall concentration of revenues among the largest companies in the overall business environment and the selected list of companies, the sample is divided in five different groups by turnover level that will further represent the cross-sectional series in the panel data model. The obtained results indicate a very low value for the F test and the t test. This indicates that the coefficient is not significant. The same conclusion is reached if we observe that the associated probability is superior to the level of relevance to which it is being worked (5%). The values for R Squared and the coefficient of the independent variable tend to 0. This leads to the conclusion that there is no relationship between the financial structure and the WACC. If we initially considered that a larger number of observations could lead to different results, using panel data we obtained results that lead to the same conclusion.

Dependent Variable: WACC
Method: Panel Least Squares
Date: 04/18/19 Time: 20:54
Sample (adjusted): 2008 2017
Periods included: 10
Cross-sections included: 254
Total panel (unbalanced) observations: 2193

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LEVERANGE	3.53E-07	4.76E-06	0.074134	0.9409
C	0.116109	0.000850	136.6040	0.0000

R-squared	0.000003	Mean dependent var	0.116110
Adjusted R-squared	-0.000454	S.D. dependent var	0.039794
S.E. of regression	0.039803	Akaike info criterion	-3.608860
Sum squared resid	3.471075	Schwarz criterion	-3.603668
Log likelihood	3959.115	Hannan-Quinn criter.	-3.606963
F-statistic	0.005496	Durbin-Watson stat	0.653191
Prob(F-statistic)	0.940911		

(*Source*: Compiled by the authors)

4. Conclusions

The goal of any business is to maximize assets and minimize costs. In this regard, it is necessary to analyse the weight of each financing state (own funds or debts) in the share of total financing. In this paper, we analysed the neutrality of the financing policy against the average cost of capital, using the model of Moglidiani and Miller. The model will be applied to all companies active in the wholesale of motor vehicle parts and accessories (NACE 4531), with extended financial statements. We used several econometric estimates to test the model hypothesis.

In the first phase we tested the Modigliani Miller hypothesis using a linear regression simple model with 10 observations for the period 2008-2017. The results generated by EViews show that in the context in which we worked, Moglidiani and Miller's hypothesis is accepted, concluding that the financial structure does not affect the weighted average cost of capital.

For the second estimate, we set the value for Intercept as the long-term average of the WACC and we estimated it in a restricted manner. According to the obtained results, the Modigliani Miller hypothesis is accepted, but the financial structure insignificantly influences the weighted average cost of capital.

Finally, we used a panel regression model with 50 observations in total (10-time series for the period 2008-2017 and 5 cross-section data with different groups depending on revenues: 1-2.5 mil EUR, 2.5-5 mil EUR, 5-10 mil EUR, 10-50 mil EUR +50 mil EUR). The results generated by EViews show that the Modigliani Miller hypothesis is rejected in this context of data usage.

In conclusion, we can state that in the context in which we worked, the weighted average cost of capital is not influenced by the changes in the financial structure. Because the calculation is complex, other analyses could lead to different results depending on the calculation method.

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PS9 ACCOUNTING EDUCATION 1

Chairperson: Alina Almăşan, West University of Timişoara, Romania

Students' perception of the current economic environment: Case of Romania

George-Aurelian I. Tudor

Ioan Codruț E. Țurlea

Student perceptions of varying methods in the accounting classroom

Jonathan Lyons

Students' perception of the current economic environment. The case of Romania

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Abstract: *This paper seeks to analyse how students of an accounting faculty in an emerging country located in Central and Eastern Europe (CEE) perceive the use of leasing in developing the company's strategy by mobilizing our own understanding. The use of the IAS/IFRS has improved the method of reporting information, and the development of new instruments (CSR-Corporate Social Responsibility) used in current businesses. The authors have tried to analyse the perception of students enrolled for bachelor and master courses. Thus, we consider that student's perception is a good proxy in the elaboration of this article because our faculty students are familiar with IAS/IFRS knowledge and interpretation, and the experience of professors helps to identify the potential directions of development of the current economic environment in Romania, an emerging CEE country. Based on the institutional context, the authors analysed various specialized literature papers and then tried to compare the sources read with those elaborated by them, plus a small professional experience, and then we will express an opinion based on the research conducted. Our research provides evidence regarding the perception of the students in Bucharest, the capital of Romania on the evolution and perception of the IAS/IFRS in developing strategies appropriate for the current economic environment. This highlights the fact that despite the changes in the economic field, practitioners continue to use the fiscal approach as an element of prudence. Considering the above, the authors suggest for future research in the economic field that triangulation of data is very important in elaborating students' perception.*

Keywords: *IAS/IFRS, accounting policies, perception, student, Romania.*

1. Introduction

Globalization significantly influences the academic environment worldwide. The most obvious examples are the increasing mobility of students and faculties, the systems by which the academic environment is administered or by which the academic research is conducted.

Thus, the answer of universities to these challenges is related to the development of the number of partnerships with the business environment, by creating tools for the presentation and integration of students on the labour market. At the same time, universities are trying to develop both theoretical and practical skills to develop the link between education, research and business. By introducing "Internship" programs, the aim is to facilitate the transition from school to active life (Albu *et al.*, 2016).

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The results of the research activities have a real impact on the student's assessment regarding the granting of scholarships, regardless of the field and the university. Typically, these forms are used to encourage research, but using them in the wrong way can cause negative effects for the student (Albu *et al.*, 2015).

This paper intends to study how the students of the accounting faculty perceive the use of leasing in the development of the company's strategy, given that in Romania the economic environment had numerous reforms, from an orientation towards a centralized economy in the communist period, to a French accounting model (1990-2000), followed by the Anglo-Saxon accounting system to leave its mark on the accounting system in Romania (after 2000). The studies conducted by Ionașcu *et al.* (2007) have highlighted Tang's hypothesis (1994) i.e. the fact that the IAS/IFRS regulations will be assimilated only if they exceed the implementation costs.

Thus, the authors have as their starting point the following research question: "Is or is not the students' perception similar to the institutional context?"

The purpose of this study is to track students' perceptions of changes to the current economic environment. The students' perception is important, because their answers can add extra objectivity, compared to a company representative. We considered that the representative of a company can present the reality from the point of view of the company where he/she works, which can distort the perception of the repeated changes of the current economic environment.

Thus, among the economic benefits brought by the IAS/IFRS implementation, we can mention: a high degree of transparency, it diminishes informational asymmetry and the risks as well as a lowering the cost of capital (Mihai *et al.*, 2012).

This has led to the emergence of new types of business activity (accounting styles) that presented the action or inaction of people in various situations by translating from theory to practice and from practice to theory, having the main objective of presenting a true image of the company over a financial year.

The accurate picture represents one of the main analysis benchmarks of the evolution of a company and is followed by the company as well as by clients, suppliers, employees as well as any other third parties directly or indirectly interested in the company (Feleagă and Feleagă, 2007).

An interview on the application of the IAS/IFRS by Ionașcu *et al.* (2006) with a representative of the Ministry of Finance highlights his answer:

> *"I received [before] this program together with international bodies … agreements with IMF and WB… which condition the granting of loans [with the implementation of the IAS/IFRS] for large entities, those subject to privatization… We took responsibility… by the [imposed] conditions…we could not continue a financing agreement with the IMF or WB unless we follow these steps…"*

These changes in the economic environment in Romania have influenced the way practitioners are organized and also the academic environment in the Central and

Eastern European countries through the regional perspective. Thus, the subjects proposed for the analysis include: the academic environment and the consequences of accounting research; building academic accountancy identity and the relationship between accounting education, research and practice; and accounting education (Albu and Albu, 2015).

Considering that we are locals, we believe that it is necessary to address these tensions generated by the difference between local culture and history as well as that of the CEE which traditionally focuses on preparing teaching materials and teaching and less on research.

In Romania we see a limited, CEE specific interest in research, but there is an increase in the research carried out on the accounting profession through studies on the economic and social impact on education and the accounting profession (Albu *et al.*, 2011).

The remaining part of this study is organized as follows. The state of knowledge section summarizes the findings of national and international accounting educational research on the consequences of accounting traineeships. The methodology section highlights how data is collected and then interpreted. At the end we have the study's conclusion, presenting the main findings, limitations and future opportunities to develop.

2. State of knowledge

Following the review of the relevant literature Albu *et al.* (2016) we have identified the fact that the role of traineeships has positive benefits for stakeholders, such as: students, universities, and host companies. After consultation with the business environment, universities are able to increase their insertion capacity on the labour market. At the same time, companies can increase students' skills by translating the theory into practice as well as reducing staff costs or the cost of training. Thus, the authors believe that through this form of training we identify positive aspects for all the stakeholders, such as: the development of the future employees' abilities, the orientation of the actors towards the current trends, as well as a reduction of the costs incurred by the host company.

In the research carried out by Albu *et al.* (2015), we mention the European Accounting Association's newsletter, which presents information from the 2010-2012 period, on the academic and professional environment in some countries: Croatia, Estonia, Romania, Slovenia. In addition, there are some local studies on the academic environment in the region.

Thus, we note the fact that the academic environment from the CEE countries has undergone substantial changes, through the passage from the publication of the materials in the local language to the publishing of the materials, in English, in international journals. Through the experience of Albu *et al.* (2015) some of the characteristics of the academic environment in CEE countries that have an impact on the way in which research is carried out have been identified.

Firstly, state universities in CEE countries seem to be much more sought by students and companies compared to Western countries where the vast majority of students are looking for universities with private funding.

Also, the number of teachers is approximately 40 in Croatia, approximately 20 in Slovenia and approximately 350 in Romania. Teacher salaries are fairly uniform for the same position or seniority in public universities, thus greatly limiting the possibility of migrating to another public university.

In Romania there is no possibility to receive an incentive for the mobility of lecturers (from one city to another), given the rather difficult period that we have gone through (the financial crisis). We can also identify a low percentage in terms of obtaining donations, and the use of money is exclusively aimed at organizing conferences without allocating money for funding research or improving teaching skills. Therefore, teachers who work in public universities in CEE countries are affected by government policies.

Another aspect to be considered is that many academic accounting teachers in public universities also have other fractions of norms as accountants, auditors, management positions within the professional bodies in the field in their home country. In their opinion, this is explained by the increased influence of some lecturers on the orientation towards the practice and less towards the theory.

We can also identify a rather low mobility of teachers. In many situations, they practice at the institution where they obtained their PhD.

Another aspect is the organization and evolution of the doctoral school in the state universities in the CEE countries, but these efforts are still far from the Western practices.

Our study aims to address students' perceptions regarding the challenges of the current economic environment by implementing the IFRS in emerging economies with the desire to have a single set of financial statements that respond to all the needs of the users.

In many cases, the CEE transition to a market economy has been considered a real success, despite the fact that there are also unfavourable elements such as corruption or limited government performance, generating an unstable economic environment with predominant bank financing and limited corporate governance (Albu *et al.*, 2014).

Albu *et al.* (2014) highlights that obtaining benefits is about how the IAS/IFRS are transposed into national regulations, but the relationship between accounting and taxation is a major impediment for the implementation of the IAS/IFRS in emerging countries. Even if there is limited experience and resources regarding the application of the IAS/IFRS, CEE countries have applied the IAS/IFRS with the aim to present the clearest financial information and to attract external investors.

Although the main purpose of the financial reports is to present high-quality financial information, the measurement of the way of application is subjective and difficult to evaluate. In a study carried out by Albu *et al.* (2014), the research of Van Beest *et al.* (2009) was presented, by which they highlighted an analysis of accounting quality studies that have been categorized into four categories: commitment models, value relevance studies, assessment of specific elements in the annual report and evaluation of qualitative characteristics. This objective considered a more general presentation of accounting practices. Thus, countries and entities adopting the IAS/IFRS have a real advantage by removing cross-border investment barriers, increasing transparency, comparability of financial reports, and reducing capital costs (Albu and Albu, 2012).

After the fall of communism in Romania, we can identify two major reforms to improve financial reporting. In the first phase, we mention the implementation of the Fourth European Directive, followed by a "joint effort" of the academic environment, professionals, practitioners and large audit firms to implement the IAS/IFRS.

Subsequently, this "joint effort" has influenced the application of the IAS/IFRS, when the World Bank and the International Monetary Fund imposed it to obtain transparency of reporting and financial statements.

We also have to mention the costs for the IAS/IRFS implementation, and Albu and Albu (2012) presented a Romanian study that was carried out in 2005 by Ionașcu *et al.* (2017), through which the entities listed on the Bucharest Stock Exchange (BSE) were questioned. Thus, among the elements presented in that questionnaire, we mention:

- training costs (97% of the surveyed companies checked this item);
- adjustment of computer systems (71.1%);
- consultant fees (65.8%);
- preparation of financial statements (23.7%).

Considering the above, the estimated average cost for the IAS/IFRS implementation is estimated at EUR 30,000, representing 0.035% of the average operating cost of the analysed entities. Albu and Albu (2012) highlights that this cost, with the IAS/IFRS implementation in Romania, is lower compared to other countries as a result of partial implementation.

This cost is also analysed by Ionașcu *et al.* (2007), and efforts to implement the IAS/IFRS are considerable. In the UK, the average cost of implementing the IAS/IFRS amounts to 360,000 pounds, and the cost varies depending on the size of the company.

In the same article by Ionașcu et.al, (2007), other surveys were also highlighted, conducted by Mazars and Atos Consulting, and these surveys targeted countries such as Poland, Great Britain, France, Germany, Belgium, the Netherlands and Luxembourg.

Mazars's survey on listed companies in 12 European countries revealed that 60% of the companies in Poland considered that applying the IAS/IFRS would mean higher costs for the company, and 30% consider that the benefits of applying the IAS/IFRS are higher than costs. This is also the case for companies in Belgium and Luxembourg, but the percentage is more optimistic, namely 55%. An unexpected evolution is found in the Czech Republic, where only 20% of companies consider that the application of the IAS/IFRS will generate significant costs. Instead, 64% of these companies consider that the benefits of applying the IAS/IFRS exceed the costs.

With regards to the survey carried out by Atos Consulting at the beginning of 2014, on 200 top companies in the UK, France, Germany and the Netherlands, it highlights a cost of applying the IAS/IFRS of over EUR 1 million. This approach is pessimistic because 71% of the companies surveyed in the final implementation phase consider that this amount is too high and only 19% of the interviewed companies believe that the 1-million-euro threshold will be exceeded.

The studies carried out by Albu *et al.* (2011) show a positive relationship between the CSR activities and company performance through shareholder profitability, profit or marketing. It is important to use CSR within the companies because it is based on cost reduction and obtaining marketing advantages.

Thus, CSR identifies the following benefits:
- a more efficient management of direct costs;
- increasing motivation for worker productivity;
- reducing the risk of administration;
- developing a competitive image of the company.

Despite the fact that the subject has been analysed by several authors, this topic has not been considerably expanded. Lungu *et al.* (2009) have conducted research on social and environmental reporting across Europe and the world in order to generate a new reporting perspective such as social and environmental reporting for companies. Also, the research conducted by Albu *et al.* (2011) highlights that the potential implementation within the Romanian companies of the Environmental Management Accounting (EMA) may be beneficial. This was also noticed in the case of some companies that were privatized and especially how the management of the company began to respond to social responsibility issues.

In the studies conducted by Albu *et al.* (2016), it is highlighted the fact that the accounting education in Romania is developing especially in recent years. The Romanian labour offer offers many opportunities for students. Additionally, recruitment consultants point out that students face difficulties when searching a job, according to their level of professional training.

The authors also discuss the emergence of the new standard (IFRS 16), which applies starting with 2019. IFRS 16 will modify the analysis and presentation method of the leasing in the statement of financial position (balance sheet). Thus, lessees classify the leasing in two categories: short-term leasing (up to 12 months) and long-term leasing (over 12 months). This approach highlights the company's situation more clearly and, for the implementation of future strategies, the authors consider that it is no longer necessary to carry out additional costs in order to analyse the company's situation when it is intended to implement new company development strategies. Regarding the registration of the lease agreement, in the case of the lessors, IFRS 16 does not change the way it is recorded in the financial statements.

In a study carried out by Săcărin (2017) on IFRS 16, the conclusions of the presentation method (for the lessee) highlighted that the statement of financial position will increase, by the increase of assets and liabilities. It also highlights that these agreements no longer have a linear approach in terms of revenue and expenditure allocation. The impact on the treasury cash-flows is also presented, that do not record a difference as a whole, but an increase will be registered in the operating activities, followed by the financing activity, where there will be a decrease. Also, following the above, he has identified an increase in the indebtedness, current liquidity and asset rotation speeds, as well as a decrease in the profitability indicators such as EBITDA and EBIT.

3. Research methodology

To answer the research question, the authors prepared a study made of 9 questions, to which the respondents – 120 students, have to answer in writing by filling in a questionnaire with only one answer. Also, the authors used the Likert Scale, where 1 represents a minor impact and 5 represents a major impact, in order to analyse in the detail perception of students. In the first part of the study we have the presentation questions by which we can identify the respondents in the two analysed categories: bachelor and master level. In the second part of the study we have the specialized questions, on the basis of which the authors formulate the current perception of students regarding the economic environment in Romania, an emerging country located in CEE.

Overwhelmed by the completion of the study, we set the date on which we must distribute the questionnaire, but as the holiday period approaches, we talked with teachers about the possibility of allowing us a few minutes for the survey. Emotions were growing, but with the understanding of the teachers we have succeeded in finalizing the study.

We remember well how we walked into the classroom, fearful but confident in getting results. We also remember with pleasure the students' availability to fill in these questionnaires. We will also keep in mind the moments when students did not understand what would happen to them, the elbows given to each other, the smiles in the room and the little break needed to fill in the questionnaire.

We also remember the small discussions regarding how to fill in the right answer, tick an "X" or to fill the circle, which brought us even closer to the students and also to the possibility of fragmenting the lecture as much as possible.

We had a pleasant surprise from student #29, who wanted to help us search new respondents. Thus, with the help of this student we went to the student dormitories, where we met welcoming students, eager to answer our questions, and also situations in which they did not wish to participate in our study.

4. Results and discussions

Thus, below we can identify respondents' answers as follows:

Q1. "Your category of age is:"

Table 1. **Age category**

Age category	Number of respondents	Percentage (%)
Under 20 years	18	15%
20-22 years	77	64.16%
23-25 years	23	19.16%
Over 25 years	2	1.68%
Total	120	100%

(*Source*: Compiled by the authors)

In the first table we can identify a majority age segment between 20-22 years (64.16%), which points to a higher availability of filling in our questionnaire. In the same table we identify master level respondents, aged over 23 (20.84%). In the interval between 20-22 years we identify both students enrolled for bachelor studies, and students enrolled for master studies, which shows a close allocation on the two categories of studies.

Q2. "Your gender is:"

Table 2. **Gender category**

Gender	Number of respondents	Percentage (%)
Male	44	36.66%
Female	76	63.34%
Total	120	100%

(*Source*: Compiled by the authors)

In Table 2 we can identify a significant proportion of girls (63.34%), which confirms our expectations, given that this profession does not require too much physical effort. We also remember the situations in which the female students wanted to bring the questionnaires to us, without the need of us going to each row of desks.

Q3. "Did you study at economic high school?"

Table 3. **Students' origin**

Economic high school	Number of respondents	Percentage (%)
Yes	52	43.33%
No	68	56.67%
Total	120	100%

(*Source*: Compiled by the authors)

In Table 3 we can identify a balanced relationship between students who have attended an economics high school (43.33%) and students with other specializations (56.67%). Thus, we can state that, following the study carried out by Albu *et al.* (2015), it is confirmed that mobility is increasing, by the high percentage of students who did not attend an economics high school and who attend / attended an economically-oriented university, but also a situation where students are conservative, and they are pursuing a faculty with an economic profile.

Q4. "Did you debate at faculty regarding International Accounting Standards?"

Table 4. ***Strategy***

Strategy	Number of respondents	Percentage (%)
Yes	53	44.16%
No	46	38.33%
I do not know	21	17.51%
Total	120	100%

(*Source*: Compiled by the authors)

In Table 4 we can identify the number of students who believed that IAS/IFRS may represent an integral part in developing the strategy (44.16%). Authors draw attention on the fact that some of the students are not familiar with the IAS/IFRS, which means that students' answers are objective.

Q5. "Do you consider that the information highlighted by big companies (listed at the Stock Exchange) are?"

Table 5. **Information type**

Information type	Number of respondents	Percentage (%)
Qualitative	48	40%
Quantitative	43	35.83%
Optional	29	24.17%
Total	120	100%

(*Source*: Compiled by the authors)

In Table 5, authors evaluate the answers – students considered that the use of the IAS/IFRS highlights both the quality of the reporting of the financial statements, and the quantity through financial and non-financial information. Thus, we can say financial statements are much more transparent and comprehensive (75.83%) (Mihai *et al.*,2012; Ionașcu *et al.*, 2007; Albu *et al.*, 2011; Ionașcu *et al.*, 2007).

Q6. "Can leasing be a component part in the elaboration of the development strategy of the company?"

Table 6. **Leasing strategy**

Strategy	Number of respondents	Percentage (%)
Yes	71	59.16%
No	12	10%
Don't know	37	30.84%
Total	120	100%

(*Source*: Compiled by the authors)

Within this question, the vast majority of respondents believe that leasing can be part of the development strategy of the company (59.15%).

Q7. "On a scale of 1 to 5, when 1 means a minor impact, and 5 means major impact on liquidity indicators, are you consider that the operating leasing shall be influence the liquidity indicators?"

Table 7. **Leasing impact**

Likert scale	Number of respondents	Percentage (%)
1	17	14.16%
2	22	18.33%
3	55	45.83%
4	19	15.83%
5	7	5.85%
Total	120	100%

(*Source*: Compiled by the authors)

According to our survey, students considered that the impact on liquidity indicators is medium (45.83%). Considering the research carried out by Săcărin (2017), we can discuss an increase in liquidity indicators as well as a decrease in profitability indicators. By registering the operational leasing in the statement of financial position (balance sheet), we also identify a small influence, within the activities, of the treasury cash flow picture.

Q8. “Taking into account the new changes on the implementation of IFRS 16, do you consider it to be a clearer emphasis of leasing by the classification thereof in short-term leasing and long-term leasing?”

Table 8. **Leasing classification**

Leasing classification	Number of respondents	Percentage (%)
Yes	56	46.66%
No	24	20%
Optional	40	33.34%
Total	120	100%

(*Source*: Compiled by the authors)

Table 8 highlights students’ perception on how leasing is registered according to the new regulations (46.66%). A significant share of respondents considers it important to classify the lease (lessee) in the two categories: short-term and long-term. We also have a percentage of students who did not share an opinion. In this regard, the authors consider that the students’ answer can be positive when benefits exceed the costs of IFRS16 implementation (80%).

Q9. “On a scale of 1 to 5, when 1 means a minor impact, and 5 means major impact on additional cost, that one single reporting system will generate an additional cost with impact also on leasing.”

Table 9. **Cost of implementation**

Likert scale	Number of respondents	Percentage (%)
1	21	17.5%
2	22	18.33%
3	49	40.83%
4	21	17.5%
5	7	5.84%
Total	120	100%

(*Source*: Compiled by the authors)

Table 9 shows a general perception of the respondents on the implementation cost for a single reporting system. Students consider an average cost of implementing the IAS/IFRS (40.83%), which confirms the study conducted by Albu and Albu (2012) and Ionașcu *et al.* (2007).

5. Conclusions

This article responds to the requests to present students’ perceptions of the current economic environment in Romania, an emerging CEE country. We also identified a development of the reporting mode as a result of the IAS/IFRS use, of financial and non-financial information. Thus, we can mention the fact that the level of transparency is high and customized for each user. In the evolution of emerging countries, institutional investors have an important role, by creating a safe business environment together with corporate governance.

This evolution of the Romanian economic environment was based on the desire to attract foreign investors, by increasing the transparency level and also different institutional actors such as the World Bank and the International Monetary Fund who imposed the use of the IAS/IFRS.

The purpose of this article is to present an overview of the challenges of the current economic environment in Romania, an emerging country, based on our own understanding and experience.

Thus, students' perception on the current economic environment is similar to the institutional context, taking into account the changes to the economic and university environment, by familiarizing with the IAS/IFRS, and also with the "Internship" programs. Students also believe that the IFRS 16 addresses more objectively how the leasing is registered in the statement of financial position and the impact on the main valuation indicators, thus presenting a much clearer situation on the future implementation strategies within the companies.

The authors do not consider that this paper presents a complete picture because they also identified limitations regarding the research carried out by the fact that the students interviewed were only from our faculty. A more complex study requires a multi-region analysis so that we can disseminate our results much closer to reality.

Given the fact that we can identify a part of subjectivism, the authors consider that it is necessary to perform the triangulation of data by completing this study with some interviews with practitioners, teachers, representatives of professional bodies, so that we can obtain a much more grounded information, mobilizing a much wider experience.

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Student perceptions of varying teaching methods in the accounting classroom

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Abstract:
Idea: *Varying teaching methods in the classroom to engage generation Z students.*
Data: *A longitudinal study of student experience and perceptions of the effectiveness of different teaching methods.*
Tools: *A paper-based survey completed by students studying an introductory financial accounting course at the commencement and finish of a semester.*
What's new? *Responding to the digital native generation to enable them to learn essential knowledge and gain competence is using the concepts learnt in and out of the classroom.*
So what? *Didactic teaching is appropriate some of the time, but various methods of teaching can improve engagement in learning.*
Contribution: *To stimulate thought about how to engage a new generation of students in learning about accounting.*

Keywords: *Accounting education, generation Z, teaching methods, student perception.*

1. Introduction

A recent report into accounting education sponsored by the American Accounting Association (AAA) (Behn *et al.*, 2012) concludes that the subject is taught in a traditional didactic fashion and argues that this does not prepare student sufficiently for the workplace. This is at a time when generation Z students (Seemiller and Grace, 2016) are going to university. This generation have always lived in a technology-enabled world. The website of the American Institute of Chartered Public Accountants (AICPA, 2017) recommends that teaching methods become more varied and AICPA suggest a variety of ways to keep students engaged with the materials being taught. This can also have other positive results, as some critics argue that accounting is taught by many in a didactic fashion (Mladenovic, 2000) and this can lead to negative preconceptions of the subject. Active and varied teaching methods can also encourage students to develop a surface learning style (Lucas, 2000). This is based upon the classic deep and surface learning style theory (Marton and Säljö, 1976), which proposes that students are more likely to retain knowledge if an active approach to learning is facilitated by the professor. Several studies in accounting education (Lucas, 2000; Boyce, 2004; Duxbury *et al.*, 2016; Paz, 2016) support this approach to teaching.

Employer representatives such as the World Economic Forum (World Economic Forum, 2016a) are encouraging universities to develop not only student knowledge of key concepts, but how to use such concepts in real world situations. By adopting a more

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varied teaching approach, accounting educators can encourage a more active learning approach, which can facilitate and raise awareness of students of the need to develop practical, as well as knowledge-based skills. A review of the literature from employer representatives (CBI/Pearson, 2016a), accounting bodies such as the AAA and university teaching of generation Z (Povah and Vaukins, 2017), indicates a need to study students' perception of learning, and what helps them engage. This study will report upon the exposure of year 2 level students to different methods of teaching, such as traditional talk and chalk, on-line quizzes and student presentations when studying an introductory accounting course. A survey at the commencement of the fall 2018 semester established if participants had experienced a variety of teaching methods and their perception of the effectiveness of the different methods the students had experienced. The same survey was conducted at the end of the fall semester to establish is student perception of the effectiveness of the teaching methods used had changed. The longitudinal nature of the study provides an indication of students' perceived effectiveness of a range of teaching methods, some of which they had experienced prior to studying accounting, and others they had not.

This report will review current literature concerning different methods of teaching accounting to generation Z students. This is followed by an explanation of how the research question emerged and a description of the study. This is followed by a description of the survey method and methodology. The results and limitations are then discussed, and the implications considered.

2. Literature review

2.1. Introduction

Professional accounting bodies such as the AAA are aware of the limitations and difficulties of teaching the discipline at university level. Frequent sponsored reviews (e.g. Apostolou *et al.*, 2015) and papers (Boyce, 2004) are published in accounting education journals such as 'Issues in Accounting Education' and 'Accounting Education: an international Journal'. Some reviews (Apostolou *et al.*, 2017) critique the current state of accounting education research and suggest future research agendas for accounting education, which include a review of the effectiveness of different teaching methods.

The current focus in accounting education research is on several key issues including effective teaching practice (Wygal and Stout, 2015), and the development of the so-called flipped classroom (e.g. Weisenfeld, 2017). Another field of research concerns the development of key competences to complement subject knowledge (Lawson *et al.*, 2015). There are also issues with overarching changes in higher education which will influence accounting education (Pincus *et al.*, 2017), including how to engage generation Z in learning.

2.2. Effective teaching practice

Financial accounting is traditionally taught in a didactic fashion. However, since the increase of use of information technology (IT) in schools and in the workplace, several reports sponsored by the professions (Behn *et al.*, 2012) indicate that this method in no longer suitable for generation Y or Z. It is not suitable as it does not engage students in learning the subject and does not help them to develop the concepts and competences appropriate for the modern world of accounting. The concepts refer to the knowledge being learnt, and the competences the ability to use such knowledge (Arum *et al.*, 2016). Competences include communication, analytical thinking, problem solving and use of technology (Lawson *et al.*, 2015). However, accounting is not taught in isolation (Smith, 2011) and is a subject taught on many business related degrees. Whilst didactic teaching may increase student knowledge of theory, it is not an effective way of developing competences although it is sometimes is the best way of learning the facts (Race, 2014). With different demands from the new economy and a new generation of students, this form of teaching can only provide part of what is required to prepare students for the workplace (World Economic Forum, 2016b).

Some professional accounting bodies accredited university accounting courses so that students can seek exemption subsequent exams (e.g. CIMA, 2018). This can influence the way in which accounting is taught at universities who seek such exemptions (Helliar, 2013). Educators also need to consider how learners use the concepts they are acquiring knowledge of.

Students can gain such knowledge in class, but they can also learn outside of the classroom from the web, texts videos and so forth. This is the basis of the concept of 'flipping the classroom' which has developed alongside the internet in higher education (Lage *et al*., 2000). However, flipping the duration of an entire class may no longer be appropriate as the new generation of students have permanent access to the internet. Generation X, Generation Y or Millennials have now left college and the next generation to emerge into the university classroom is generation Z or digital natives. Information Technology has always been around them (Seemiller and Grace, 2016). Generation Z students have unique characteristics. In the classroom they prefer intrapersonal learning, and it is stated that:

> *"They do not like to be lectured at. They view their instructors as facilitators of learning as opposed to talking heads"* (Seemiller and Grace, 2016:179)

Now that generation Z has entered the classroom, accounting educators need to consider how to develop their knowledge to prepare them for the new workplace identified by the World Economic Forum. The classroom should be the place when such knowledge is used in a practical fashion, and not merely a place where concepts is dictated in a didactic fashion.

> *"Instead of going to class to gain baseline knowledge they can access foundational information from a few websites and videos, allowing them to learn on their own before coming to the group"* (Wall, 2017).

Students prior experience of different teaching methods needs to be considered when flipping the classroom. A study at a large Southwest US university business school (Downen and Hyde, 2016) flipped a managerial accounting classroom. The results indicated that students perceived a slight reduction in instructor respect for students and a negative effect on attendance. They conclude that:

> *"Accounting courses seem like a particularly good candidate for flipping, given the application nature of many accounting topics"* (Downen and Hyde, 2016:79).

The authors state that the technology available makes it easier to provide material to students, which includes recording lectures. However, it could be argued that this is precisely what accounting educators should avoid when developing knowledge with generation Z as it still represents a didactic approach to teaching accounting and does not involve active learning. Methods criticized by the Pathways Commission Report (Behn *et al.*, 2012). The study concludes that there is a need for further research in the area.

It is questionable that small sample sizes (in the case of the Dowden and Hyde study, n=99) require extensive statistical analysis (Abelson, 2012) as it is difficult extrapolate the findings to other classes, due to the use of a convenience sample (Smith, 2011). But such exploratory research can indicate possible areas of further research with more robust samples.

There is also an issue of faculty engagement with technology required to prepare for a flipped classroom (Watty *et al.*, 2016). A study in Australia, sponsored by the CPA Australia, was based upon interviews with 13 academics and the study had the objective of using IT to improve teaching practice and to recognize:

> *"The need for business schools and accounting faculty to embrace the opportunity to harness new and emerging technologies that provide a tailored, anywhere, anytime experience for students"* (Watty *et al.*, 2016:2).

The authors identify several barriers to the adoption of technology, including: resistance to change, time demands, preference for traditional teaching methods, age profile, lack of support, and a culture of resistance. The study also reports that the uptake of technology in accounting education was slow. The recommendations made include: the need to generate interest, raising awareness, understanding the benefits of the adoption of such technology and to provide educators with adequate funding and research. The conclusion states:

> *"The technological shift sweeping through society and higher education institutions necessitate and demand that accounting educators reimagine what the future might hold for accounting education"* (Watty *et al.*, 2016:12).

Flipping the classroom can lead to less positive feedback, as some student may just expect to be taught, as they are used to this form of content delivery. There might also be time conflicts with other subjects, and unless explained properly, students may not understand the objectives of a flipped classroom. Flipped classrooms using videos and pre reading have, to some extent been superseded by the concept of BYOD (Bring Your Own Device). Which enables students to access the web in-class to engage in learning on-line and active research (Gillies, 2016). Flipping the classroom is only a small part of what the modern educator needs to do to engage generation Z in learning financial accounting. Other teaching methods need to be explored to engage students in learning and also developing key concepts and competences.

2.3. Integration of key competences

There is currently a demand from employers to integrate key competences in all forms of higher education to prepare them for the work place in what the World Economic Forum describe as the 4th Industrial revolution (WEF, 2016). In addition, other employee representative groups report on the limited competences that graduates have when they enter the workplace (e.g. Buckley, 2015; CBI/Pearson, 2016b; CIPD, 2015). Accounting bodies such as the AAA and the Institute of Chartered Accountants in England and Wales (ICAEW, 2018) are aware of the need to develop concepts and competences, but there appears to be a divide between what the bodies want and what higher education institutes currently provide (Annisette and Kirkham, 2007).

A report sponsored by the management accounting section of the AAA (Lawson *et al.*, 2014) proposes integrating learning objectives into the accounting and business studies curriculum. This is part of a growing tend to teach students both knowledge and skills across all university disciplines. Educators need to consider how this can be achieved across the curriculum, and how such competencies can be assessed. Introducing a variety of teaching methods can help to achieve this, for example group presentations can improve communication skills. So not only can varying teaching methods help to engage generation Z students, it may also help to develop key competences for the workplace.

2.4. Forces for change in higher education

With the demand on the provision of accounting education by universities, such institutes need to be aware of, and understand the current changes occurring in higher education worldwide. This will enable them to provide students for the new workplace, who are skilled and competent. This currently appears to be a problem (Hart Research Associates, 2015). Pincus *et al.* (2017) discuss what they term "forces for change" and the resultant implications for accounting educators in the US. One of the forces identified is technology and the authors state:

> *"Today technology forces and technology enable globalization and are producing far reaching disruptive effects, including a growing skills gap (i.e. gap between demonstrated and needed workplace skills)"* (Pincus *et al.*, 2017:6).

The technological changes are also changing professions, including accounting. It is more difficult to recruit employees with the requisite skills, and to keep up with the pace of change with increasing automation of jobs in the accounting and finance sector. This is emphasized by a recent article in one of the profession's leading magazines "Accounting Today" which states:

> *"As the accounting profession works to re-invent itself, the staffing shortage will be a major hindrance, as will the need to teach new accountants an entirely new set of skills. Worse yet, that reinvention and the process of learning new skills sets will most likely need to be permanent"* (Hood, 2015).

One of Pincus *et al.*'s (2017) observations is that whilst online courses and the use of blended learning are increasing, this is not occurring in curriculum development. They state:

> *"Information technology has been adapted to familiar ways of teaching, but has not yet made a significant difference in what is being taught (curriculum) or how material is being taught (pedagogy)"* (Pincus *et al.*, 2017:7).

Whilst IT is being used in the class, it is being used to supplement traditional ways of teaching, not to change them significantly. Information technology presents an opportunity for student to develop new skills for the workplace, for example networking in groups, but little research has been done in this area.

A response (Fogarty, 2018) to Pincus *et al.*'s (2017) paper concerning forces for change, challenges several of the conclusions. In terms of technology, Fogarty argues that it is not necessarily a good thing that accounting is being computerized, as "its main objective is to permanently displace human input" (Fogarty, 2018:41). This will lead to new types of employment, which may de-skill people, which does not bode well for higher education. He furthers this standpoint by arguing that there is little evidence that the use of IT in higher education has improved educational outcomes and states:

> *"Educational technology seduces us to believe that efficiency and effectiveness can both be attained, perhaps to the point where for forget how much we have paid for it"* (Fogarty, 2018, p.41).

There are also resource issues to consider for both students and universities, however with the ubiquity of smartphones and tablets in the class, such resources need to be harnessed and developed by educators. A recent review of trends (Apostolou *et al.*, 2017) in research in accounting education has indicated a need for research in the area of the student development of competences. Following the critiques of Pincus et al (2017), that technology in the classroom is not altering teaching, Apostolou et al (2017) ask:

> *"An unanswered question, though, is whether articles published by accounting education journals have addressed important issues or topics and have contributed a knowledge base that can help changes in the accounting education"* (Apostolou *et al.*, 2017:2).

One of the reasons for the research is the finding that:

> *"Papers describing best practice are welcome additions to the literature but only if they consider and augment prior work in the context of professional initiative to improve education practice"* (Apostolou *et al.*, 2017:14).

This paper is inspired by the Pathways Commission Report (AAA, 2012), that criticizes accounting education for being too didactic which the report considers is not a suitable way of learning knowledge and skills. But it must be remembered that generation Z will be studying more than just accounting, and that the encouragement of ACIPA to consider who they are teaching applies to all subjects and not just accounting.

Educators also need to engage is designing accounting courses which engage and develop students' knowledge of key concepts and encourage competence of understanding how to use the skills taught. A good starting point is to research what, in the students' perception, is effective or ineffective as classroom teaching methods. The following section describes the study.

3. Research purpose and design considerations

For any research project to contribute to knowledge in the area, the research must be designed and conducted in a manner which ensures that the outcomes are valid and reliable so that the claims contribute to the research field.

The underlying research theory is that students, in particular, generation Z students are more likely to engage in deep learning if teaching methods used in the classroom are active, and can lead the student to connect knowledge learnt outside the class with its application in the classroom.

The study has been developed from two other streams of research. Firstly, a review of general education at a liberal arts university showed that employers are becoming increasingly worried about the ability of the students to apply knowledge in the workplace. Secondly another study (Lyons, 2018), which adopted a semi-reversed classroom approach to teaching by using Poll Everywhere, led to positive feedback from students.

There is also an emergence in the accounting education literature of the changing nature of the skills needed to practice accounting (Brewer *et al.*, 2014). There is a need to consider how this can be achieved with teaching methods in the classroom.

The research question emerged: Do students perceive that using a variety of teaching methods in the accounting classroom is an effective way of learning the discipline. However, the word effective may have different interpretations to the students, for example, does it mean they adopted a deep learning approach and could successfully remember the knowledge learned in the future, or does it mean they all achieved A grades?

4. The study

The study took pace at a liberal arts university in southern Europe. It consisted of two phases of data collection. During phase one, in September 2018, surveys were handed out to three 2nd year level classes (n = 75) studying introductory financial accounting. The surveys were distributed in class the first class of the semester before teaching commenced. Ethical approval has been previously granted by the University's ethics committee. The survey consisted of six questions concerning teaching methods, and four questions about the use of smartphones in class. The questions concerning teaching methods were in two parts. The first part asked if students had experienced a particular teaching method before, and the second part asked if they perceived the method to be effective. The answers were given on a five-point Likert scale that ranges from never (0) to frequently (4).

The selection of teaching methods was arbitrary, but the categories reflected method used by the professors who taught the classes: the methods are categorized into traditional methods, methods assisted by IT and flipped classroom approaches. The methods are listed below, with category in brackets.

1. The teacher/professor writes of the board and I take notes (traditional).
2. The teacher/professor uses a presentation package such as PowerPoint and students take notes) (IT assisted).
3. The teacher/professor uses examples on the board and I take notes (traditional).
4. Students prepare the class; some do a presentation (flipped class).
5. The class starts with a package of questions and we use our smart phones to answer them (IT assisted).
6. The class is held in a computer lab (IT assisted).

Following each category was the question: “As a way of learning I perceive this method of in-class learning to be” and a Likert scale (0 to 4) with the responses: Not effective; Effective sometimes; Neither not effective or effective; Effective most of the time; Always effective.

A second part of the survey asked student opinion about the use of smartphones in class. The question was: Please respond to the following questions about smartphones in class, on a scale of 1-5 where 1 is “Strongly disagree” to 5 which is “Strongly agree”.

1. Phones should be banned in all classes.
2. Phones can be used for personal issues if the professor is informed.
3. Phones can be used for teaching and learning.
4. There should be free use of phones in class.

Questions about phone use were asked to gather data concerning the acceptability of the practice of BYOD. There appear to be polarized views in the teaching community concerning this issue. Some (Katz and Lambert, 2016) have the opinion that smartphones should be banned, while others (Paz, 2016) encourage the use of smartphones in class. Mobile and ubiquitous learning are increasingly attracting academic and public interest, especially in relation to their application in higher education settings. The systematic analysis of 36 empirical papers (Pimmer *et al.*, 2016) supports a view that students gain knowledge from learning designs, which are helped by instructors varying their teaching techniques. Such activities help students to adopt an active learning approach during classroom lectures. They can also help to enrich and extend more traditional forms of teaching in higher education. The omnipresence of mobile technology in the classroom can be an opportunity to engage generation Z in learning using freeware such as Poll Everywhere.

The second phase of data collection occurred at the end of the semester in December 2018, when the same survey, excluding the section on phone use, was distributed and completed by participants during the final class of the semester.

The surveys were collected and analysed. The weighted averages from the commencement and end of the semester were compared to establish if there were any differences in student perception of the teaching methods used.

5. Findings

The data collected from participants of the survey was coded. The Likert scale responses to student experiences of a particular way of learning were coded 0 for the response “never” to 4 for the response “all the time”. Student perception of the effectiveness of methods of teaching. The Likert scale responses were coded 0 for “not effective” to 4 for “always effective”. The total responses for each point on the scale were multiplied by the number of responses at each point. The total was converted into a percentage to enable comparison of student perceptions between the start and end of the semester. For example, if all respondents had perceived a teaching method to be excellent, the score would be 100%. The results are shown in Table 1.

Table 1. **Comparison of student experience and perception of teaching method at commencement and completion of semester**

Survey Question	**Start of the semester**	**End of the semester**	**Increase or decrease in effectiveness**
1. The teacher/professor writes of the board and I take notes (traditional)	78%	81%	4%
Student perception of teaching method 1	62%	79%	18%
2. The teacher/professor uses a presentation package such as PowerPoint and students take notes) (IT assisted)	74%	83%	12%
Student perception of teaching method 2	55%	73%	32%
3. The teacher/professor uses examples on the board and I take notes (traditional)	62%	77%	25%
Student perception of teaching method 3	81%	84%	3%
4. Students prepare the class, some do a presentation (flipped class)	40%	64%	58%
Student perception of teaching method 4	48%	68%	43%
5. The class starts with a package of questions and we use our smart phones to answer them (IT assisted)	30%	55%	82%
Student perception of teaching method 5	53%	70%	33%
6. The class is held in a computer lab (flipped class)	45%	50%	11%
Student perception of teaching method 6	58%	68%	17%

(*Source*: Compiled by the author)

The findings are preliminary and indicative of ways in which generation Z students perceive the best ways of learning accounting to be. They are also some peculiarities that indicate possible limitations to the research design.

All the teaching methods have higher ratings at the end of semester than at the start. This could be for several reasons; the breaking down of negative preconceptions of the subject identified by Wilcoxon (2000), and subsequent student engagement with learning. The confidential university feedback received form students indicated that they enjoyed the classes, as they were a little bit different from more traditional classes that the students are accustomed to.

ACIPA (2018) recommend that when teaching generation Z students, instructors need to use a variety of teaching methods to ensure maximum engagement of the class. The results support this recommendation.

The question ‘have you experienced this method of learning’ elicited responses that might be indicative of the teaching methods students experience at school and during the first year at university. The majority of students at the commencement of the semester responded that they had experienced traditional methods, such as presentations of material, examples using a pen and whiteboard and methods assisted by technology such as PowerPoint. The majority of students, 79% for the whiteboard and 73% for PowerPoint also perceived this to be an effective way of learning at the end of the semester. Although it is interesting to note that the retro style of teaching with a pen and board was as popular than PowerPoint. This perhaps reflects the overuse of PowerPoint at University. There are also potentially issues of acculturalization to particular teaching methods and a student perception that as they had made it to university the methods of teaching they were used to must be good.

The perceived increase in the effectiveness of presenting material is 17% for board work and 18% for the use PowerPoint. This could reflect the instructor using a combination of diagrams and text on the board and using PowerPoint which students might not have expected. The increase of the student perception of the effectiveness of worked examples on the board was 3%. This could be due to the student expectation that accounting in solely numbers based, like mathematics. Student might expect to be taught numerical subjects by example, so the teaching method meets expectations.

Experience of less traditional teaching methods used such as student group presentations, an on-line question package, Poll Everywhere (30%), and a computer room (45%) had been experienced by a minority of students at the start of the semester, which could indicate that such methods are used less than traditional methods at school and first year level.

The findings from the four questions regarding the use of smartphones in class confirmed that all students had phones and expected to be able to use them. The majority (64 out of 75) (85%) of students disagreed or strongly disagreed that phones should be banned; however, they also did not expect free use. Only two of the sample responded agree or strongly agree to the statement. “there should be free use of phones in class”. Occasional personal use with the agreement of the professor was regarded by students as acceptable, with 64 out of 75 (85%) agreeing or strongly agreeing to the statement “phones can be used for personal issues if the professor is informed. The idea of using phones for teaching and learning was also very popular with 70 (93%) of the sample agreeing or strongly agreeing to the statement “phones can be used for teaching and learning”.

The perceived effectiveness of teaching methods such as student group presentations increased significantly (23%) between the start and end of the semester. On line methods such as the use of freeware such as Poll Everywhere had been experienced by 30% of the sample at the start of the semester. However, such methods were also perceived to be effective ways of learning by the end of the semester.

One peculiarity of the findings is the percentage of students experiencing the teaching methods used at the end of semester should be 100%, but is not, this could be due that the perception of the student is not that they experience such a teaching method, but how often such methods were used in class. An example of this in the computer-based class, as there was only one held during the semester. Whist the method had been experienced by students, the answer “all the time” is possibly inappropriate.

6. Conclusions/implications

The study indicates that there is not necessarily one best way of teaching, but more of an emphasis on variety, which students appear to perceive to be a positive learning experience. This approach could be assisted by the instructor explaining to students at the start of the semester that various different teaching methods will be used, and this could also be explained in the syllabus. In some cultures, students might not be used to instructors using a variety of teaching methods and this may influence engagement and subsequent feedback. Didactic teaching in schools appears to be common in some cultures, and students may have been conditioned to think that this is the only way of learning. Perhaps introductory level classes at university should introduce students to learning theory and encourage students to develop different ways of learning and emphasize the difference between school and university education.

Different ways of teaching should also lead to different ways of assessing student knowledge of subject knowledge and competences such as group work and presentation, and it should be made clear to students that they are being assessed on more than merely reproduction of knowledge.

It is important to consider what other teaching methods students are being exposed to during the semester. For example if all classes are PowerPoint, students may experience what some commentators describe as death by PowerPoint (White, 2015). The finding that PowerPoint is considered to be not as effective as on-board solution reflects Pincus *et al.*’s (2017) opinion that, whilst adaptive technology is available for the class, many students perceive it to be equally valid as the white board.

The use of freeware might have resource implications, including the need to purchase software licenses. There are also issues to consider in the training of teaching staff, which is not mandatory in many European countries (European University Association, 2018).

If student perceive a particular method of learning, good practice should be shared amongst colleagues with regular discussion groups, blogs and informal discussion.

Sometimes through trial and error, new methods of teaching can be established and shared.

Control of phones needs to be established at the start of the course. This can be done by introducing rules or discussion with students about the potential of using smartphones for education, but also the potential problems if the rules are ignored. The results indicate that students perceive that reasonable use of phones in the class is acceptable and appear to welcome the idea of using them for teaching and learning.

Student interpretation of the survey questions asked might have varied, future surveys should be more explicit and ask where, and when they have experienced a variety of teaching methods. Further research could also include interviews and qualitative analysis of the data. Only a limited number of teaching methods were explored and there are other methods, which could to be investigated in future studies. The sample was small, and extensive statistical analysis was not considered necessary. There is also an issue of how to measure a student's perception of good ways of teaching, if students think a method is better, is it better? There may also be acculturalization issues to consider, students might perceive a teaching method to be good as that is what they are used to. Now that generation Z students have entered the university classroom, instructors will need to continue to develop teaching methods to engage them in learning.

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PS10 ACCOUNTING EDUCATION 2

Chairperson: Keryn Chalmers, Swinburne University of Technology, Australia

New coordinates of accounting academic education. A Romanian insight

Victoria Stanciu
Irina Bogdana Pugna
Mirela Gheorghe

Exploring the entrepreneurship perception of accounting master students

Cristina Lidia Manea
Elena-Mirela Nichita
Alina Mihaela Irimescu

New coordinates of accounting academic education. A Romanian insight

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Abstract:
Research question: *Are accounting graduates prepared to face IT developments in their profession?*
Motivation: *The accounting profession is facing a rapid transformation involving digital technology that implies significant changes. "Modern accountants are expected to have a high level of IT knowledge and skills and towards that direction the curriculum in accounting education have to adopt a wide range of modules in order to provide accounting students with the required competencies" (El-Damarleh, 2017:202). Today's students are digital natives and they "think and process information fundamentally differently from their predecessors" (Prensky, 2001:1). Academic education needs to adapt to the language of digital natives and provide them with new skills and the knowledge required by the profession.*
Idea: *We aim to investigate the awareness of bachelor students in accounting regarding the impact of IT on accounting processes and their preparedness in this regard.*
Tools: *Data was collected using a multiple-choice questionnaire distributed to third-year and master's accounting students at the Bucharest University of Economic Studies. Data was analysed using Excel.*
Findings: *The students are aware of the importance of the new technologies and applications relevant to the profession but their knowledge needs to be improved. The current curriculum does not include important aspects of the new digital technology that are already embedded or being assimilated within the accounting profession.*
Contribution: *The paper provides recommendations regarding accounting academic education, providing arguments for developing IT-related competencies for accounting students aiming to align their knowledge and skills to current and future professional requirements.*

Keywords: *Accounting graduates, future of accounting profession, digital accounting, IT knowledge and skills*.

1. Introduction

All companies face a digital transformation that impacts their business models and, as a result, their areas of operation. At the same time, this digital transformation is visible throughout the entire value-added chain. Accounting is facing the same dynamic change. There is a huge potential for accounting to develop through digitalization and this has several components: accounting new approach and understanding; cost reduction; and a strongly IT-oriented job profile for professional accountants.

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The digitalization of accounting processes is present in all companies at different stages: robots have already replaced "classical" accounting data-input jobs; accounting processes are optimized; data processing is integrated; and data quality and consistency is ensured. Moreover, the work of auditors in a digital environment becomes more efficient, effective and proves increased quality.

Accounting continues to remain the "business language". As business has changed dramatically, as a result of IT, accounting has had to adapt rapidly to new business requirements. Of course, accounting principles remain the same, but accountants are nevertheless leveraging the knowledge and huge advantages offered by information technology. Mobile devices (including smartphones), social media, and Apps are part of this move to digitalization, which also includes cloud computing, eXtensible Business Reporting Language (XBRL), Big data and data analytics, and artificial intelligence, along with other IoT developments. "Real-time reporting, cloud computing and complex big data analyses do not, as yet, play a large role for most companies" (KPMG, 2017:6). The pressures of business competition impose rapid changes in companies' decision-making processes that will propel IT developments in the accounting landscape, as accounting provides the needed information.

In this increasingly IT-based environment, for (re)defining the accounting function it is important to investigate the professional technical skills needed by accountants. This study investigates the developmental trends of digitalisation in accounting and the new professional profile of accountants. In this regard, we address the main issues relating to the technology skills, as their aim is to investigate the impact of disruptive technologies on accounting education. The foundation of the accounting professional is ensured through academic education. We discuss the need for a new approach in the accounting academic education starting from the new profile of the accounting student. "Our students today are all 'native speakers' of the digital language of computers" (Prensky, 2001) and the entire training process has to be re-thought from this perspective. It is also important to emphasize the other side of the coin: the academic staff is, largely, formed by so called "digital immigrants". In this context not only should we review the academic curricula but also the academic training process itself? Is the academic staff properly prepared to teach *digital natives*? Has the academic staff the instruments required to align academic education with their students' needs, styles and ways of thinking? These questions provide a broad field for discussion and need urgent responses, followed by appropriate changes to academic education.

The objective of this paper is to assess final-year accounting students' awareness and coverage of the new technology skills required by the profession. We aim to respond to the following research question: *Are accounting graduates prepared to face IT developments in their profession?*

The reminder of this paper is divided into 4 sections. We begin with a review of both the scientific and business literature covering subjects relating to our research: new technologies impacting accounting profession; new skills for accounting; and an overview of reactions in accounting education. The main sections of the paper cover our research methodology and the results of our research. The last section includes some conclusions, comments on the limitations of the current study, and directions for further investigation.

2. Literature review

We structure our review of the literature in three subsections. In the first two we provide a survey of the relevant background and the context of our investigation. This covers, in turn, the areas of the main new technologies that impact accounting and the new skills required for accounting professionals. Our final subsection covers research most directly linked to our investigation: the way accounting education addresses new technologies impacting the profession.

2.1. The current technology landscape

The business landscape is constantly challenged by technological innovation. New information technologies have reshaped existing business models and encourage the emergence of new ones. These changes impact all industries and business areas and require new sets of skills for both the present and the next generation of managers and professional employees. As noted in a survey undertaken by the American Institute of CPAs and the Chartered Professional Accountants of Canada, "*technology is a crucial key to success, in the accounting profession and elsewhere*" (CPA Survey, 2015:4).

The main technologies impacting accounting and audit areas are:

Analytics

Analytics are data driven processes that creates insight. They are quantitative rather than qualitative techniques and are largely based on data and less on opinion. The Institute for Operations Research and Management Science (INFORMS) proposes three levels of analytics: descriptive, predictive and prescriptive.

Descriptive analytics refers to understanding the past (***what has happened***) and knowing ***what is happening*** in the organization. They are largely based on multidimensional analyses of historical data. Data warehousing, OLAP and Data Visualisation are key technologies in this area. Descriptive analytics are critical for monitoring the organization's performance. Therefore, their most common applications are in the areas of business reporting and performance management – Business Performance Management Systems, dashboards, and scorecards. This category is generally identified with Business Intelligence (BI).

Predictive analytics are used to predict events (***what will happen***), explain when and why (***why will it happen***) they might occur. This type of analysis is based on statistical techniques and on Mining technologies (Data Mining, Text Mining, Web Mining).

Going forward, there is a shift towards ***prescriptive analytics*** - using simulation, optimization, decision modelling and rules to prescribe the most effective path to maximise opportunities (***what should we do***).

In the context of computerised decision support, the term Business Intelligence (BI) is increasingly replaced by Business Analytics (BA). Many academics and practitioners consider BI, addressing mostly descriptive analytics, as being only a component of BA, together with advanced analytics, information management, change management, business strategy, and organizational design.

Big Data

The concept of Big Data (BD) refers to sources, variety, velocity and volumes of data. The term itself is a misnomer, as it includes, beside volume, other important dimensions (Turban, 2018):

- Variety – refers to data types and data sources. Big Data includes everything - from structured (traditional databases, historical data stores) to semi-structured and unstructured data (text documents, e-mail, audio and video data, sensor-captured data, and stock ticker data).
- Velocity – refers to the speed at which data is produced and the necessary speed of processing it to meet a particular need.
- Veracity – refers to the data conformity to facts (accuracy, quality, truthfulness).
- Variability – refers to the consistency of data generation in time.
- Value – Big Data has a greater potential to contain more valuable information (patterns, outliers) than small data.

BD by itself has only a hypothetical value. Business users have to explore and analyse it in order to access its potentially valuable insight. This is done with advanced analytics in a systematic approach (Business Analytics). BD analytics include Hadoop, Map Reduce and NoSQL.

BD and BD Analytics are changing the way companies use sophisticated information technologies to gain insight from data in order to support effective decision making. The availability of all this data means that *"virtually every business or organizational activity can be viewed as a BD problem or initiative*" (Davenport, 2014: ix). BD and its analytics initially disrupted customer-facing industries, as the levels of both variety and velocity of customer data are extremely high. Even if accounting and audit use mostly structured data, the value of BD can't be ignored in these fields. Business reporting, performance management, risk management, and regulatory compliance are only some of the areas that can be addressed using BD Analytics.

Artificial Intelligence

Artificial Intelligence (AI), the philosophy of creating intelligent machines, has become a prominent business slogan. In its brief history, AI experienced both periods of enthusiasm and of disappointment (so-called "AI winters"). Without doubt, AI is flourishing today, and its technologies are considered to be "*critical in bringing about innovation, providing new business models, and reshaping the way businesses operate*" (Akerar, 2019: 5).

AI encompasses many areas, each with different approaches and technologies. Currently, the most influential for accounting and auditing are:

- Machine Learning (ML) – involving the development of computational approaches to make automatic sense of data. A machine can learn from its own experience and become "smarter" over time. Learning algorithms and ML technologies are used in Data Mining and advanced analytics to extract valuable insight from huge quantities of data.

- Knowledge based systems. Designed in a cognitive approach, they represent one of the most successful practical areas of AI. Knowledge Representation and Artificial Reasoning are the main pillars of knowledge-based systems. Rule-based knowledge bases, heuristic reasoning, uncertainty, capacity to justify a solution and to explain the logic of applying knowledge in a particular context, are all features of pragmatic systems that are capable of storing human expertise and using it to solve difficult and complex problems. These systems (called Expert Systems) are largely used as Automated Decision Systems. Accounting is one area that can be, at least partially, automated. As accounting software programs are becoming more automated, the role of the accountant is changing to that of a business advisor (Roger CPA Review, 2018).
- Natural Language Processing – used for information retrieval in the process of text mining. This can be extremely useful for auditing - using advanced machine learning techniques, auditors can rapidly process, highlight, and extract, key information from electronic documents (ICAEW, 2019). With the repetitive and low judgment areas of information extraction being automated, auditors can focus their effort on more important cognitive aspects.

Blockchain

Blockchain is a transformative and relatively early-stage information technology, with a significant disruptive potential. Some consider it as a broad ecosystem of digital automation opportunities, expecting it to be as revolutionary as the Internet (Jun Dai and Vasarhelyi, 2017: 5).

Originally developed as a method for documenting cryptocurrency transactions, blockchain's functionality has evolved into a large number of applications - such as banking, financial markets and insurance. Many organizations are currently recognizing the potential of blockchain technology, and some of them are investing in this area. Its application to accounting and auditing practices is still underexplored. However, its potential to enable a real-time, verifiable, and transparent accounting ecosystem is largely acknowledged both by researchers and practitioners.

Some have suggested *"the future possibility of triple entry accounting where every accounting transaction recorded by an entity also has a corresponding posting onto a public blockchain"* (Tyron, 2018:12*).* The concepts of smart contracts and triple-entry accounting can have an important impact on audit. As all transactions are verified by an independent source and a complete history of all transactions available on the blockchain, the audit focus will move to the terms of the smart contract itself. Auditing can then change from being an annual event (looking back at "historical data") to a real-time process - and this will have an important effect on corporate reporting.

"Blockchain could enable a real-time, verifiable, and transparent accounting ecosystem. Additionally, blockchain has the potential to transform current auditing practices, resulting in a more precise and timely automatic assurance system." (Jun Dai and Vasarhelyi, 2017: 5).

2.2. New technology skills for accounting

The new business model is predominantly data-driven, with (big) data analytics being one of the main processes for management and value creation. Therefore, organizations are struggling to become data-driven and to increase their IQ by strategically using the valuable insights provided by advanced analytics. Business leaders are searching for cognitive, soft, and technological high-level skills in their effort to create competitive advantages from the opportunities offered by technology. According to one of the latest surveys that investigated 60 banks, insurance and asset management firms, 48.5% of the executives identify people challenges as the greatest barrier to become data-driven, while the technology issue was cited only by 19.1% (Bean, 2018).

These new technologies will rapidly and significantly affect the workplace. An estimate is that at least 50% of the work is automatable through currently available technology, and an additional 15% is automatable through forthcoming technologies (Manyka *et al.*, 2017). New workplaces, with high levels of automation, AI, and with deep analytical insights, will need employees with novel knowledge and skills, eager to learn continuously and to treat change as a constant in their professional life.

Both the accounting and audit professions are challenged by all these trends. To succeed in the current global market, skills like problem-solving, critical thinking, continuous learning and ability to engage with new technological developments are required (McKinney *et al.*, 2017). Employers ask for generic skills (personal and soft skills), accounting-specific skills (such as accounting principles, accounting standards) and technology skills. The last are changing dynamically, and businesses expect their talent to adapt to these changes.

The Big Four are searching for people having, besides accounting and auditing knowledge, analytical skills and computer programming experience (Cooper *et al.*, 2018). Ernst & Young defined the "*accounting plus*" skills framework, including knowledge of techniques such as: analytic modelling; data visualization; intelligent process automation; Watson and deep learning methodology; blockchain and smart contracts; and cybersecurity (Ernst & Young, 2018). PwC recognize skills in data analytics, information management, and programming languages as more valuable than ever (PwC, 2015). The Association of Accountants and Financial professionals in business (IMA) includes in its Management Accounting Competency Framework skills like: the ability to analyse data using business intelligence software; use data analytics and data mining techniques to discover key and relevant trends; and synthetize and interpret data from multiple sources (IMA, 2017). Some other large and midsized firms have expressed similar views. Analytical capabilities and the ability to work with data analytics are the main skills required by the employers.

Based on this literature review and on our own experiences, the technical skills needed by the accountants are synthetized in the Table 1.

Table 1. **Technical skills recommended to the accountants**

Information Management	**Analytics**			**AI Disruption Understanding**
	Descriptive	**Predictive**	**Prescriptive**	
Advanced Excel skills	Business Intelligence technologies	Data mining ML	Analytic modelling Optimization Simulation	Cognitive computing tools

Information Management	Analytics			AI Disruption Understanding
	Descriptive	**Predictive**	**Prescriptive**	
	Data Warehouse OLAP			
Programming logic	ETL (Extract, Transform and Load) Tools	Text Mining NLP	Automated decision making (Expert Systems)	Intelligent process automation
Data models	Data visualization Business Reporting (dashboards, scorecards)	Forecasting		Blockchain and smart contracts
Databases and DBMS ERP systems Cloud Computing Audit software Legacy systems	Big Data Analytics NoSQL, MapReduce, Hadoop			Cybercurrencies Cybersecurity

(Source: Authors' analysis*)*

It is reasonable to conclude that the accounting profession will need people having accounting skills but who are also extremely literate. Also, the need for soft skills - professional scepticism, judgment, and critical thinking - will remain a constant for accounting and audit professionals.

2.3. The impact of disruptive technologies on accounting education

Technology disruption is already happening, and education providers should prepare current and future generations accordingly. The lack of skills – both technology and technology-related – is one of the most important constraints acknowledged by business leaders in their effort to respond to the challenges raised by the ongoing technological revolution. According to Davenport, these changes in skills and analytical orientations may require "*a generational change in company leadership*" (Davenport, 2017). The idea that analytics should be a distinct business discipline and that universities should prepare students to become "*citizens of data science*" (Schwarzo, 2018) is itself a measure of this need for people with appropriate skills and attitudes in the contemporary business landscape.

Accounting, "*a profession that is stepped in tradition and surrounded by frameworks and concern for regulatory challenge, it is going to take a concerted effort to embrace and proactively respond to the opportunities and challenges that the digital and technological revolution will bring*" (Zhang *et al.*, 2018:4). The profession needs to embrace these changes in order to remain relevant. Today's accounting curriculum should be updated to equip students with new skills, especially in technology and data analytics.

Accounting curricula and education in most countries have not substantially changed (Zhang *et al.*, 2018). However, there are some universities that are trying to introduce new courses and new interdisciplinary programs to fill the gap. Some examples are:

- Queen Mary University (UK), whose undergraduate program includes courses on how to discover patterns in finance and accounting domains.
- The University of Waterloo (Canada) integrates a basic curriculum of analytics within its undergraduate and graduate programs.
- The Southern University of Finance and Economics in Chendu, China offers an undergraduate program for business analytics in accounting, including disciplines like databases, data mining, data analytics and machine learning together with disciplines of core accounting knowledge.
- Singapore Management University has established a master's degree in accounting data and analytics.
- The USC Marshall School of Business offers a Master of Accounting with Data and Analytics.
- St. Mary University (Texas, USA) offers a program in Accounting and Data Analytics, including courses such as accounting, data analytics, information systems management and quantitative management.
- The University of Pittsburgh has established a master's in Accounting and Business Analytics.

There are also initiatives that integrate accounting courses in programs aiming to prepare data scientists. For example, the University of Pennsylvania, which includes a course on Accounting Analytics in its program covering Business Analytics.

Along with these innovations within higher education, major employers are increasingly involved in the accounting education process. For example, one of the Big Four auditing firms (KPMG) has established partnerships with a number of schools (9 universities in the USA in January 2018) to sponsor master's programs focused on data analytics in accounting. These programs include courses that combine accounting with big data analytics: Auditing through Information Systems, Data Analysis and Visualization, Probability, Uncertainty, and Statistical Decision Making and Data Mining for Business Intelligence.

Educators need to be aware that new technologies continue to develop, and that dynamic sociotechnical change creates volatility for accounting education (Al-Htbayat *et al.*, 2018). Therefore, it is important to keep a proper balance between innovation and stability in the development of curricula, assuming that continuous learning and the ability to engage with new developments and data are essential skills for their graduates. Educators should encourage a philosophy of lifelong learning.

The accounting context needs to be considered for future curriculum development and the accounting and audit professions need to respond proactively to the technology challenge in order to remain relevant.

3. Methodology

Aiming at addressing our objective, we undertook a qualitative investigation. The process of reviewing the literature emphasized the major IT challenges for the accounting profession, and helped us state the main coordinates for the empirical study.

This qualitative investigation was followed by an empirical investigation, our objective being to investigate the awareness of new-entry accounting professionals of the impact of IT on accounting processes, and their preparedness in this regard. The study's target group were accounting students at the Bucharest University of Economic Studies (the last year of bachelor degree and master students). The criteria used in establishing the target group took into consideration that [i] the students belong to Gen Y which is more receptive to new technologies; and [ii] they are new entries into the profession; their perceptions are relevant to this study, regarding IT developments in the accounting profession and their related knowledge and skills.

Data was collected using a multiple-choice questionnaire distributed randomly to third-year bachelors and accounting master students. The questionnaire, containing 18 questions, was structured in two parts: the first part includes demographic questions aiming to gather the respondents' field, level of study, and gender. The second part includes questions focusing on students' awareness of IT developments in the profession, and their perceptions regarding their knowledge in the field. The questionnaire includes multiple-choice and rating scale questions (a Likert scale, with five degrees, was used) aiming to assess the students' in-depth knowledge and preferences regarding new information technologies impacting the accounting field. The data collection took place between December 2018 and January 2019; we collected 102 questionnaires, none of them being rejected. The collected data was analysed using Excel, applying descriptive statistical methods to determine mean values, standard deviations, and percentages.

It is important to articulate the researcher's relationships to this study. We are all faculty members, teaching Management Information Systems courses. Therefore, we have the position of active and informed observers of the phenomenon under study. Moreover, we had an initial assumption regarding the necessary technology skills of accounting professionals – assumptions based on the scientific literature, the business literature, and our academic experiences (Table 1).

4. Results and discussion

We conducted the data analysis based on the following questions:

1. What are the students' perceptions regarding their academic formation for the profession?
2. What are the most important study domains for accounting students?
3. How important are IT courses for their professional accounting academic training?
4. What are the main technologies impacting the accounting profession?
5. How well prepared are they regarding these technologies?

The structure of the analysed sample includes 102 subjects, of which 80% are bachelors in accounting (3rd year) and 20% master students in accounting and banking. From the entire sample, 20% of the respondents are male and 80% female, which corresponds to the overall gender distribution at the Bucharest University of Economic Studies.

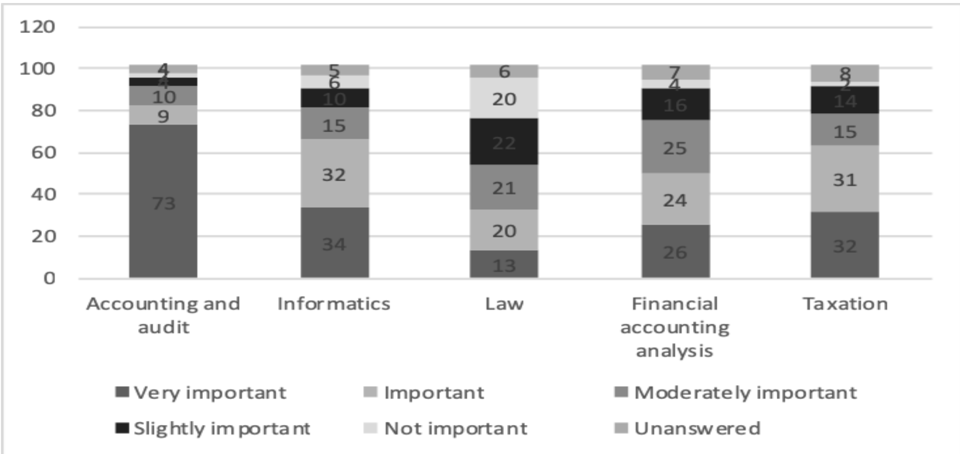
We question what skills and competencies are considered necessary for the future accounting profession. The five domains nominated in the predefined answers were: accounting and audit, computing, law, financial analysis, and taxation. The respondents appreciated that knowledge and abilities in computing are essential, after accounting and auditing.

Table 2. **Respondents' perception in regard with the importance of the five education domains**

	Very important	Important	Moderately important	Slightly important	Not important	Unanswered
Accounting and audit	72%	9%	10%	4%	2%	4%
Informatics	33%	31%	15%	10%	6%	5%
Law	13%	20%	21%	22%	20%	6%
Financial analysis	25%	24%	25%	16%	4%	7%
Taxation	31%	30%	15%	14%	2%	8%

(*Source*: Authors' analysis)

Figure 1. **Skills and competences need in the future accounting profession**

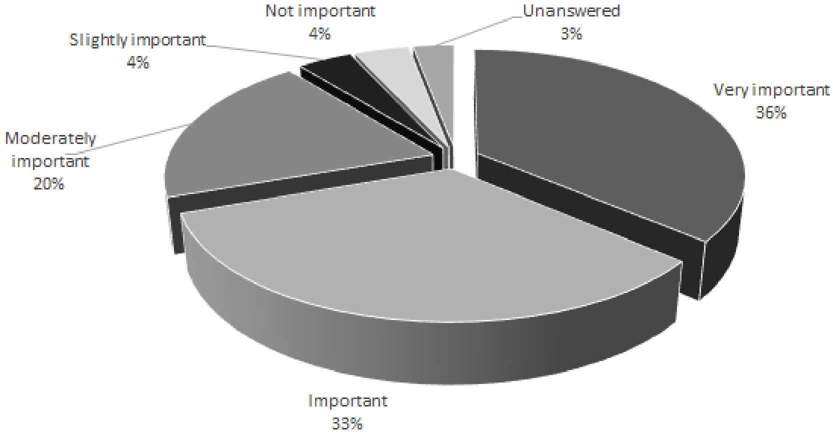


(*Source*: Authors' analysis)

The responses reflect the students' awareness of the deep integration of the automated processes in the accounting flows and is the result of their academic training focused on management information systems and other computing topics. The accounting knowledge and competences are in first place, which is compulsory for the accounting students; the percentage of 72 could be subject of discussion. Computing skills are in second place: just 64% of the respondents considering these competences important and very important for the profession (table 2). In our opinion, students are not benefiting from integrated accounting and computing lessons that raise potential gaps in their understanding of the accounting processes in their automated flow.

We also investigated the respondents' perceptions regarding the importance of the computing lectures for their training. 69% of respondents considered that the computing classes are important and very important for their training which confirms the responses received for the first question (figure 2).

Figure 2. **Respondents' perception in regard with the importance of the computing**



(*Source*: Authors' analysis)

Another topic we explored was the students' perceptions regarding the computing courses included in the bachelor curriculum. The predefined answers in the survey were (according with the curriculum): Office Automation Systems (OAS), (SGBD) Access, Programming, WEB Design, Management Information Systems, Business Intelligence (BI), and SQL Server. From the results of data analysis, we retain students' focus on OAS and Access (table 3). As Excel is one of the most important tools included in the curriculum, and still the most important tool used by accountants and auditors, the answer is well aligned with the actual state of the Romanian accounting profession. We expected that awareness of the importance of database management systems and management information systems would be more strongly emphasized. The answers should be considered noting that most students are not working in the field and they are not familiar with the tasks and activities performed in the accounting departments. As 80% of the respondents are in the 3rd year, and they have yet to participate in the BI classes, their answers reflect their knowledge on BI topics from other sources.

Table 3. **Students' perception in regard with the importance of the computing classes included in the bachelor curriculum**

	Very important	Important	Moderately important	Slightly important	Not important	Unanswered
OAS	75%	14%	6%	0%	5%	1%
ACCESS	18%	34%	27%	13%	6%	2%
Programming	10%	19%	23%	26%	22%	1%
WEB Design	13%	15%	26%	24%	20%	3%
SIG	19%	25%	25%	21%	9%	3%
Business Intelligence	13%	11%	23%	22%	16%	17%

SQL Server	14%	23%	30%	19%	11%	4%

(*Source*: Authors' analysis)

Table 4. **Statistic data descriptive analysis for computing classes included in the bachelor curriculum**

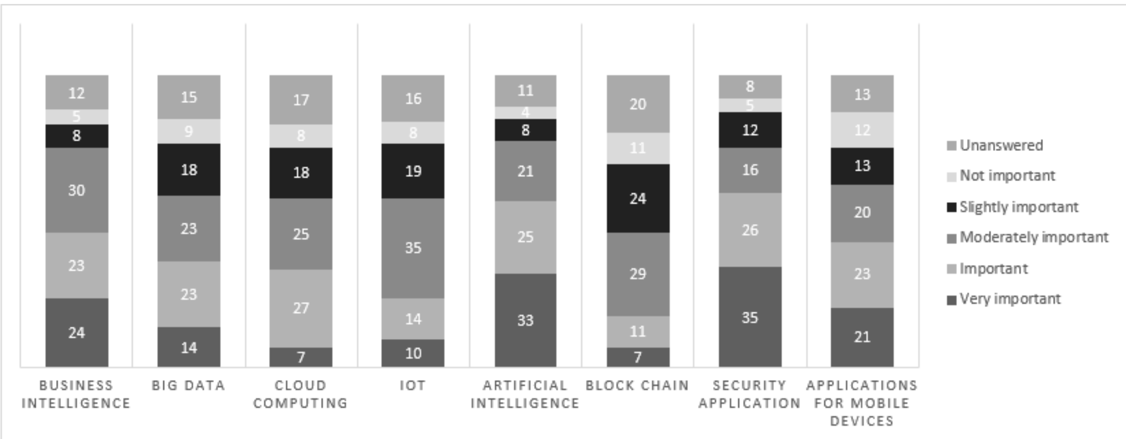
	Mean	Standard Error	Sample Variance	Standard Deviation	Count
OAS	4.5	0.10679678	1.163366337	1.078594612	102
ACCESS	3.39215	0.119174067	1.448650747	1.203599081	102
Programming language	2.656862	0.128832321	1.692972238	1.301142666	102
WEB Design	2.68627	0.135074339	1.860997864	1.364183956	102
SIG	3.14705	0.133204941	1.809842749	1.345303962	102
Business Intelligence	2.333333	0.157842504	2.541254125	1.594131151	102
SQL Server	2.903922	0.131432081	1.761987964	1.327398947	102

(*Source*: Authors' analysis)

The sample variance reflects the responses exceeding the mean value of the responses; it can retain the homogeneity of the answers (table 4).

The next two questions investigated the new technologies impacting the accounting profession. The predefined answers were: Business Intelligence, Big Data, Cloud Computing, IoT, Blockchain, Artificial Intelligence, Applications for data security, and Apps for mobile devices. Analysing the responses, we note that the students are aware of the importance of the new technologies (figure 3) and Apps but their knowledge of these topics is rather low (figure 4). As the courses included in the current curriculum do not cover all the investigated technologies/applications, these results are in line with the reality. This should trigger a review of the curriculum not just in its content but also in the number of training hours allocated for the specific courses.

Figure 3. **Which are the technologies/tools impacting the profession?**



(*Source*: Authors' analysis)

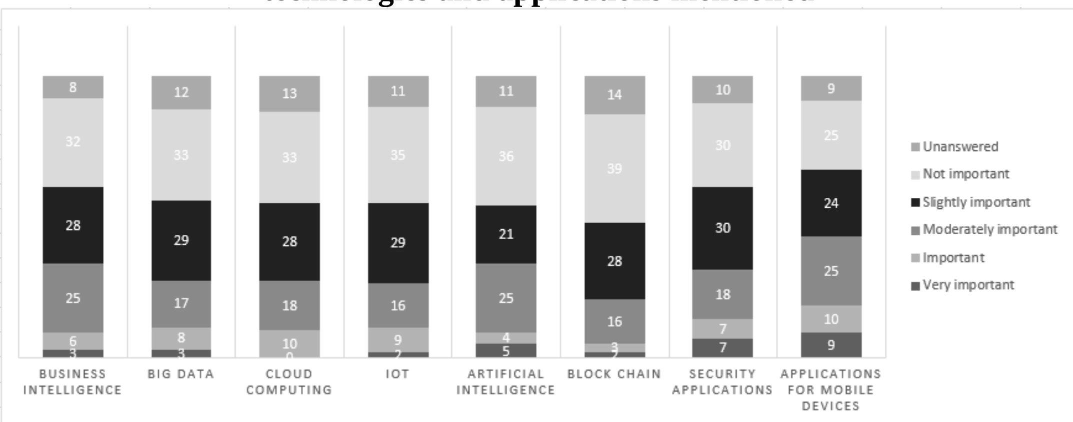
Table 5. **Statistic data descriptive analysis for technologies/tools impacting the profession**

	Mean	Median	Sample Variance	Standard Deviation	Count
Business Intelligence	3.166666667	3	2.49669967	1.580094829	102
Big Data	2.705882353	3	2.566103669	1.601906261	102
Cloud Computing	2.568627451	3	2.366530771	1.538353266	102
IoT	2.519607843	3	2.232284993	1.494083329	102
Artificial Intelligence	3.411764706	4	2.60104834	1.612776593	102
Blockchain	2.205882353	2	2.204717531	1.484829125	102
Security Application	3.490196078	4	2.430596001	1.559036882	102
Application for mobile devices	2.892156863	3	2.810036886	1.676316464	102

(*Source*: Authors' analysis)

The standard deviation indicates small variances in the respondents' perceptions, meaning that they seem to have similar views regarding the impact of IT developments on the profession (table 5). Taking into consideration that the previous responses reflected the students' awareness of the IT impact on the profession, the mean and median values calculated for the present responses reflect that students are not familiar with the indicated IT developments. We asked the students which computing topics need to be included in the IT classes. The respondents expressed their interest in accounting Apps, AI, cloud computing, blockchain, programming (Java), IoT for E-Business, and cybersecurity, recognizing their insufficient knowledge on these topics.

Figure 4. **How do you rate the level of knowledge you acquired on the technologies and applications mentioned**



(*Source*: Authors' analysis)

We investigated the students' perception regarding the factors influencing IT adoption in accounting departments. The predefined answers were: increase the work efficiency, service quality, complex analysis of financial accounting data, availability of 24/24 services online, integrity and security of financial accounting data. The responses are provided in table 6 and emphasize the students' focus on the quality of the services and on increasing work efficiency (table 6 contains the number of answers for each option).

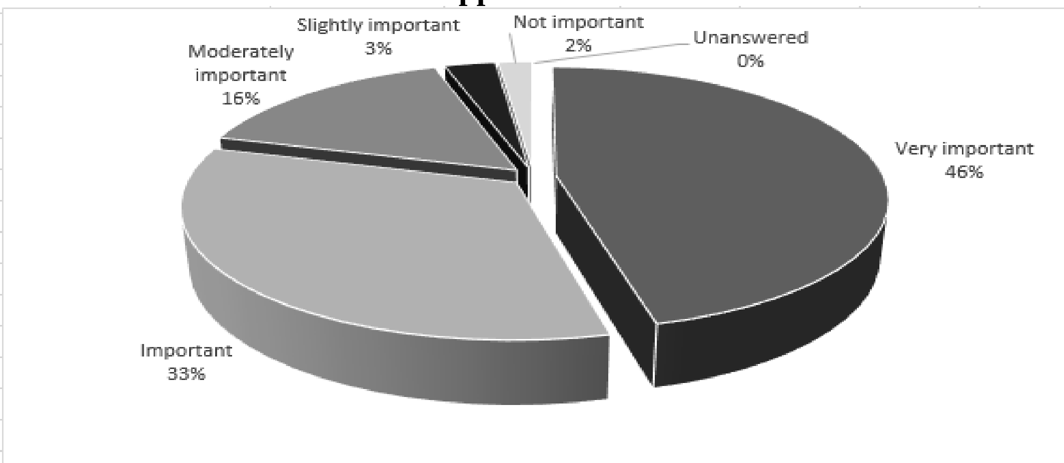
Table 6. **Factors influencing IT&C adoption**

	Very important	Important	Moderately important	Slightly important	Not important	Unanswered
Efficiency of work	69	18	8	2	4	1
Service quality	96	2	3	0	1	0
Complex analysis	41	28	21	6	4	2
Availability of 24/24	39	29	18	8	7	1
Integrity and security	28	35	19	12	6	2

(*Source*: Authors' own research)

We asked the students for their opinion regarding the use of dedicated accounting applications rather than paper-based work in their training. Students appreciate that using accounting applications is beneficial: 46% consider very important for their training and 33% as important (figure 5).

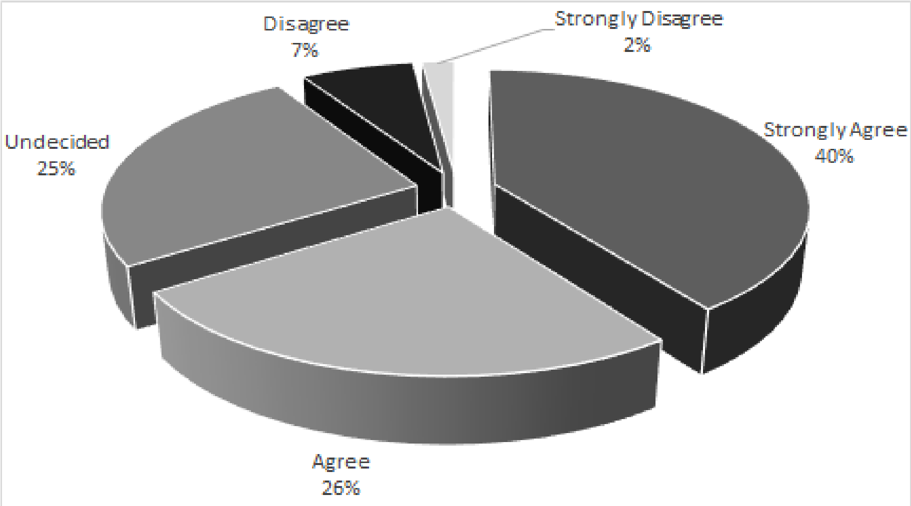
Figure 5. **Accounting knowledge is better acquired using accounting applications?**



(*Source*: Authors' own research)

The respondents appreciate the usefulness of computer skills and knowledge acquired in the academic training for their professional accounting work. 40% totally agree that they will use the IT skills and knowledge, and 26% agree (figure 6). It is surprising to see that, in an IT-based environment that characterizes accounting activities, 2% of the respondents strongly disagree with the use of acquired IT skills and 7% expressed their disagreement. It could be concluded that they do not consider IT acquired skills and knowledge important for their future work or they do not need such skills for the accounting work – however, in the absence of written comment from these respondents we cannot draw a definitive conclusion. Neither of these possible explanations is in line with reality nor with the professional accounting profile.

Figure 6. "**Will I use the knowledge of computer science disciplines in my profession?**"



(*Source*: Authors' own research)

It was also surprising to find that students are not requesting more IT-based training in the educational processes. Such training should be included throughout the curriculum, not only in the computing classes.

The academic curriculum should be reviewed and revised to reflect these technology changes in the accounting profession.

5. Conclusions

Innovations in IT have impacted on the role of the accounting professional. In the past this role focused on financial information analysis. Increasingly, the accounting professional is becoming a consultant in the decision-making process. The study of new IT technologies is now vital for the future accountant and, consequently, all education institutions should take account of this in developing their curricula.

This paper has investigated accounting students' awareness and coverage of the new technology skills required in the accounting profession. Our study revealed significant gaps in the academic training of Romanian accounting students regarding the new IT requirements of the profession. As the students need to be educated for the labour market, both the academic curricula and the education process should be adjusted accordingly. A review of the academic curriculum needs a forward-looking strategic approach, based on at least two significant issues: the dynamics of digitalization in the accounting profession and the characteristics of the next generations of students. The university should already be preparing to train students from Generation Z (who are characterised as being culture creators and gadget-oriented) for their accounting professional lives. This implies new pedagogical approaches, advanced infrastructure to support the education processes, and updated curricula. Teachers should adapt their rationale and their approaches in accordance with the IT implications for accountancy and the next generation of students' ways of thinking and focus.

In the short term, updating the syllabus of existing courses is needed in order to include the new technologies discussed in this paper. A significant shift in accounting teaching, as well as in other courses (like financial analysis and taxation), should be undertaken by embedding IT-based applications and teaching techniques.

The main limitations of this research derive from the structure of our respondents – we interviewed students at the end of the first semester of their terminal year, so before the Business Intelligence course addressing the analytics topic, which is scheduled in the second semester.

Another limitation relates to the coverage of our study – we have focused only on technology skills. The professional profile of the modern accountant also requires soft skills in order to manage current IT developments and, therefore, a broader approach regarding the necessary changes in the educational process is needed.

As a future research objective, the authors envisage a more comprehensive analysis, including students, graduates, employers, professional accounting bodies and faculty members in order to design a strategy for accounting education and initiate an academic debate regarding Romanian accounting academic education.

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Exploring the entrepreneurship perception of accounting master students

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Abstract: *The current research aims to explore to what extent the entrepreneurship is a sustainable alternative career for students enrolled in accounting master programs and the way the academic education helps them to envision the entrepreneurship. The focus is to analyse the drivers determining entrepreneurial intentions: ability of an entrepreneur; impact of environmental background that plays an important role to the entrepreneurial career decision making process; willingness to become an entrepreneur, and the encouragement of academic education in entrepreneurship decision making process. The study is based on a questionnaire distributed to master students enrolled in accounting master programs organized by The Bucharest University of Economic Studies. The research methodology consists of a descriptive analysis and regression analysis. The findings allow to state that students are taking into consideration the entrepreneurship career and their decision is positively influenced by family and friends setting and education. The test of the models resulted in adjusted R-squares of more than 0.92 indicating robust support for the regression models. Furthermore, an analysis of academic curricula is conducted in order to seed consciousness regarding the necessity of more entrepreneurial courses in economic higher education.*

Keywords: *Entrepreneurship, willingness to become an entrepreneur, family support, entrepreneurial skills, academic education, entrepreneurial skills.*

1. Introduction

Entrepreneurship is fascinating, in different forms and for different purposes: for the young students and graduates represents a future career opportunity; for higher education institutions is a drive to adjust the academic curricula to the new generations' expectations; for the economy is a key for growth and long-term development (Bădulescu, 2015).

Entrepreneurship competencies combine creativity, a sense of initiative, problem-solving, the ability to manage financial and non-financial resources and technological knowledge. These competencies enable entrepreneurs and entrepreneurial employees to motivate and adapt to economic changes. Entrepreneurial skills and abilities can be developed through entrepreneurship education and trainings that focus on promoting an entrepreneurial mind set and behaviours (OECD, 2018).

European Union (EU) considers entrepreneurship as one of the key competences for Europeans. To accomplish these goals, EU has entitled entrepreneurial skills,

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encouraging entrepreneurship by fostering the right mind-set and awareness of career opportunities as an entrepreneur, as objectives and methods for European education system (Komarkova, 2015).

European Reference Framework for key competences for lifelong learning defines entrepreneurship as: "*A sense of initiative and entrepreneurship is the ability to turn ideas into action. It involves creativity, innovation and risk-taking, as well as the ability to plan and to manage projects in order to achieve objectives. The individual is aware of the context of his/her work and is able to seize opportunities that arise. It is the foundation for acquiring more specific skills and knowledge needed by those establishing or contributing to social or commercial activity. This should include awareness of ethical values and the promotion of good governance*" (European Commission, 2006, 2018)

The goal of entrepreneurship education is to give people the knowledge, skills and attitudes to act in an entrepreneurial way (Moberg, 2014).

The data of this paper is collected based on a survey on the student's perception on entrepreneurship and analyses the competences and abilities they gain as result of their bachelor studies and how these perceived competences and abilities are currently helping or will help them to choose an entrepreneurial career.

Entrepreneurship education is crucial for boosting economic growth (Acs, 2006; Carree and Thurik, 2010; Thurik and Wennekers, 2004) as it allows to run free the entrepreneurial potential of young people, helping them to develop a critical eye for entrepreneurial opportunities, skills to prepare assignments, and an ability for taking responsibility. Developing these key competencies requires an educational environment that encourages invention and creativity, permitting for taking risk and for making mistakes, which should be valued as a learning opportunity (Moberg, 2014).

Following Hambrick's (2007) and Marin *et. al.*'s (2015) assertion that structural researchers must balance theoretical with practical implications, this study addresses the issue on entrepreneurship that we consider to be of great importance for universities in modelling the curricula to develop and enhance the entrepreneurial skills of their students.

This exploration aims to offer an image of the master students' perception regarding the match between the design of their competences and skills and the entrepreneurship as an option for a worthwhile career.

The paper is organized as follows: the literature review section with focus on entrepreneurial skills and role of education in shaping the entrepreneurial proficiencies, then research methodology displays the information about questionnaire we used to collect information from students; the results section points out the findings, and, finally, the paper concludes with implications for practice and academia, limitations and further research challenges.

2. Literature review

2.1. Entrepreneurial skills

The hypothesis that entrepreneurs are generalists who are good at a variety of skills, although not necessarily excellent at anyone (Lazear, 2004) is confirmed by Chen and Thomson's (2014) research paper. The perfect entrepreneur is a balance between the cognitive intelligence and training of a manager and emotional intelligence of a leader (Minica, 2017).

Entrepreneurial skills combine a range of technical, management and personal skills (EC, 2014; OECD, 2014) as follows: *technical skills* include communication, environment monitoring, problem solving, technology implementation and use, interpersonal, organisational skills; *business management skills* include planning and goal setting, decision making, human resources management, marketing, finance, accounting, customer relations, quality control, negotiation, business launch, growth management, compliance with regulations skills, and, respectively, *personal entrepreneurial skills* that include self-control and discipline, risk management, innovation, persistence, leadership, change management, network building, and strategic thinking.

The outstanding qualities of an entrepreneur are the predilection to take risks (Bădulescu 2015; Călin-Costin, 2013; Ceptureanu 2015; Cișmariu (Zepa), 2014; Ghicajanu, 2015; Medinschi, 2014; Neațu and Imbrișcă, 2015), the characteristic of high level of optimism (Hmieleski and Baron, 2009; Neatu and Imbrișcă, 2015), and "alertness" (Demsetz, 2008; Gaglio, 1997; Gaglio and Katz, 2001; Kirzner, 2009; Manne, 2014; Tang *et al.*, 2012). Some researchers are disagreeing on risk taking feature and state the opposite: the risk aversion attitude encourages individuals to invest in balanced skill profiles, making them more likely to become entrepreneurs (Hsieh, 2016). Furthermore, Ceptureanu (2015), Davidsson and Honig (2003), Munteanu (2015) and Nicodim *et al.* (2016) have shown that social skills, as the ability to take advantages from social connections, networks, are central for becoming an entrepreneur as well as for the success rate of making it through the start-up phase.

The challenging in understanding the role of the entrepreneur is one of intellectual property, since at the moment of idea formulation, there is no practical way to give property right protection to that idea (Manne, 2014).

Whether a person is an employee or an entrepreneur all that matters is to educate his/her flexibility to meet the challenges, recognize opportunities and step back in time from businesses that have lost their marketplace (Medinschi, 2014). Entrepreneurship is a way of thinking, then a planned behaviour, and finally, an economic activity (Galea, 2017).

2.2. The role of education in entrepreneurship

The demand for learning about entrepreneurship is increasing. Studying entrepreneurship has been suggested to directly conceptualize the relationship between entrepreneurship, labour markets and career options (Burton *et al.*, 2016).

Currently, the teaching of entrepreneurship is not yet sufficiently integrated in higher education institutions' curricula. Available data show that most entrepreneurship courses are offered in business and economic studies (European Commission, 2008).

However, European Commission (2008) is questioning if business schools are the most appropriate places to teach entrepreneurship, since innovative and worthwhile business ideas are more likely to arise from technical, scientific and creative studies.

Entrepreneurial education is the main factor in entrepreneurship (Negoescu, 2013) and its aim is to give students the attitudes, knowledge and skills to act in an entrepreneurial manner (Tsakiridou and Stergiou, 2014), promoting creativity and innovation (Medar, 2015). Teaching entrepreneurship is a necessity (Filip, 2017), but this would not limit the difficulties that entrepreneurs faces, but sometimes will even increase them according to Avram and Sabou (2016), who stated that the entrepreneur with a high level of education will permanently search to develop the business, facing new difficulties that need to be solved.

The student's interest on entrepreneurial activities remains greatly influenced by the entrepreneurial universities policies, making the role of universities crucial. Knowing that the present students will be the tomorrows successful entrepreneurs (Pribeanu and Milutin, 2014), it is essential to increase the impact of entrepreneurial education on the student's life. It is not easy for universities, knowing the changes and challenges that they have to face nowadays (Schulte, 2014), but it is their responsibility and they do have the means to make the change possible. There are a lot of solutions that universities might use to stimulate the spirit of future entrepreneurs.

On one hand, they might ensure the development of students' entrepreneurial specific competences within university by organizing conferences, contests on entrepreneurial topics, valuing the best idea plan, but more important, by the teaching techniques used in the education process. It is well known that the more diverse the teaching and learning methods used, the broader the learning process is. Therefore, combining the face-to-face interaction teaching methods with the information and communication technologies, and putting the students in a central position will lead to greater efficiency. Many studies (Ceptureanu, 2016; European Commission, 2015; Roșca and Șipoș-Gug, 2015;) demonstrated that student-centred education is stimulating the entrepreneurial spirit of students. Indeed, the *learning-by-doing* pedagogical approach has positive influence on both, learning experience and development of entrepreneurial skills. Through creativity-based learning, challenge-based learning, discovery-based learning (Pavlov, 2014), and business simulation games (Ploae, 2014), the students will experience confidence, will be able to make decisions in uncertainty situations, manage the risk better, find best solutions in a record time and overcome difficulties.

On the other hand, universities might act by building national and international partnerships between universities and economic agents (Diaconu and Duțu, 2016). The connection to the outside world is established by protocols with the training companies, as their role is well known in the entrepreneurial education (Isac, 2017), and by inviting business professionals or entrepreneurs to share their experience and to be perceived as models that might be followed.

There are also the students' organizations that are playing an important role in shaping the entrepreneurial competences of students through the organization, planning and coordination of complex and diverse activities (Zamcu, 2013). Furthermore, there are universities that are relying on the activity of students' associations to promote social change (Cantaragiu *et al.*, 2014). Along with these students' organizations, Alumni involvement is often useful in motivating students. (European Commission, 2015)

3. Methodology of research

The current research aims to investigate the ability to become an entrepreneur, the impact of environment – family and friends support, the willingness to become an entrepreneur and the influence of education on students' attitude in regard with entrepreneurship. As other *similar* studies (European Commission, 2013; European Social Entrepreneurship and Innovative Studies Institute, 2015; Fini *et al.*, 2016; Kerr, 2017; OECD, 2007; VOYAGE, 2016), the authors conducted a survey to identify if essential behavioural characteristics for a career in entrepreneurship are encapsulated in master program students' personality and also to motivate university to improve curricula to enhance the entrepreneurship actions.

The students' perception questionnaire (Peterson *et al.*, 2000; van der Scheer, 2018) comprises three parts: the first 20 questions addressing four main topics: ability to become an entrepreneur, environmental background where students developed their personality, willingness to become an entrepreneur, and the influence of education in the entrepreneurial decision making process; the next five requests collect data about age, gender, work experience, high school profile and bachelor degree; the questionnaire closes with open question, as comments.

The survey uses Likert scale (Bertram, 2016; Likert, 1932), from 1 (strongly disagree) to 5 (strongly agree), to assess participants' level of agreement with our proposed statements.

3.1. Data description

The data of the research are collected by conducting a survey with 1st and 2nd year students from master programs organized by Accounting and Management Information Systems Faculty from The Bucharest University of Economic Studies, Romania (*Accounting, Control and Expertise, Accounting and Taxation of Economic Entities* and *Financial Analysis and Evaluation*); the data were collected by direct distribution of questionnaire at the beginning of second semester of 2018-2019 academic year. The data set consists of 161 questionnaires, from which 157 were accepted as valid, representing a success rate of 97.5%.

Supplementary data used in the paper, regarding entrepreneurship, are extracted from curricula of bachelor and master's degree programs organized by The Bucharest University of Economic Studies, Romania.

3.2. Method of analysis

This paper uses descriptive statistical indicators such as the media, median, sample variance and the coefficient of variation in order to analyse the students' attitude toward their ability as entrepreneurs, impact of environmental background, willingness to become an entrepreneur, and the role of academic education in entrepreneurship decision making process.

Additionally, two regression models are used to test the hypotheses:

H1. Entrepreneurial skills are influenced by education, and

H2. Willingness to become an entrepreneur is influenced by education and family support.

3.3. Broad view on respondents' profile

The respondents of our survey are 85.90% female, and 14.10 male; the distribution in terms of high school graduated highlights that 53.85% of master students have an economic background. Most students (71.15%) enrolled in Accounting master programs have a bachelor's degree in accounting, as shown in table 1.

Table 1. **Characteristics of respondents – master program graduated**

Bachelor's degree	Number of graduates	%
Accounting and Management Information Systems	111	71.15%
Management	9	5.77%
Finance and Banking	6	3.85%
Theoretical and Applied Economics	4	2.56%
Management and Public Administration	4	1.92%
International Economic Relations	3	1.92%
Business and Tourism	3	1.92%
Marketing	2	1.28%
Business Administration (in foreign languages)	2	1.28%
Public Administrating – Human resources	1	0.64%
Agrifood and environmental economics	1	0.64%
Faculty form The University of Economic Studies, but not declared	4	2.56%
Other faculty, external of the University of Economic Studies	7	4.49%

(Source: Authors, based on the survey*)*

Our respondents are predominantly young people with age between 19 and 25 years (87.82%) as shown in table 2.

Table 2. **Characteristics of respondents – age**

Age	
Younger than 25 years	87.82%
Age between 26 years and 35 years	8.97%
Older than 35 years	3.21%

(Source: Authors, based on the survey*)*

Since the respondents are very young, the work experience is customarily less than 1 year as shown in table 3.

Table 3. **Characteristics of respondents – work experience**

Work experience (in years)	
Less than 1 year	58.83%

Work experience (in years)	
Between 1 year and 3 years	35.89%
Between 3 years and 5 years	1.92%
More than 5 years	3.84%

(Source: Authors, based on the survey*)*

4. Analysis and results

4.1. Ability to become an entrepreneur

The first part of the questionnaire included questions (Q1 to Q6) that were addressed to find out the students' perception on having entrepreneurial competences, such as risk taking, creativity, self-confidence, independence, hardworking intentions, adapting to changes. Entrepreneurs are risk takers, they have the courage to sacrifices employment benefits, to feel independent, to be their own boss. They are creative and self-confident; they seek opportunities to make benefits and overcome challenges and difficulties that inevitably affect all entrepreneurs at some point in their careers. Entrepreneurs work hard, they invest not only money, but time and effort and succeed to adapt to change, make quick decisions. The results show that 31% from the participants have great skills for becoming entrepreneurs, as they accumulated more than 24 points from the total of 30 points on Likert scale.

4.2. Environmental background

An entrepreneur needs family support, from money to encouragements, positive support, understanding in periods of stress, so that he can concentrate on the business. The descriptive analysis from table 4 shows that almost 76% from the participants declared that they have family support to start-up their business (Q7). Parents support is easy to obtain, but wife/husband and children understanding is hard to achieve because they have to accept that an entrepreneur spend a lot of time away from the family.

On the other hand, family might provide inspiration and knowledge about managing a business especially when a parent runs his/her own business. This is also available for friends. A parent or a friend that is his own manager turn into a model easy to follow. The descriptive analysis shows that 38% of the students have a member of the family running his own business (Q8) and almost 27% of them have friends involved in entrepreneurship (Q9).

Table 4. **Descriptive statistics on environmental background**

Items		Strongly agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Strongly disagree
Q7 Family support to start-up a business	#	86	32	16	13	9
	%	55%	21%	10%	8%	6%
Q8 Family models	#	53	6	12	12	73
	%	34%	4%	8%	8%	47%
	#	30	12	28	27	59

Items		Strongly agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Strongly disagree
Q9 Friends models	%	19%	8%	18%	17%	38%
Q19 Erasmus students	#	3	0	0	0	153
	%	2%	0%	0%	0%	98%
Q20 Work & Travel program	#	7	0	0	0	149
	%	4%	0%	0%	0%	96%

(Source: Authors, based on the survey*)*

The participants were also asked whether they travelled as Erasmus students (Q 19) or as part of work and travel programs (Q20), in order to investigate if they had the opportunity to connect to other cultures, where young people wish to achieve financial success through entrepreneurship. The survey suggested that very few students were part of such programs.

4.3. Willingness to become an entrepreneur

Although 84% from the responds are employees and are enjoying the benefits of a stable career (Q11), almost 60% expressed the desire to start-up their own business (Q10), sacrificing employment benefits as shown in table 5.

Table 5. **Descriptive statistics on willingness to become an entrepreneur**

Items		Strongly agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Strongly disagree
Q10 Willingness to start-up own business	#	57	36	38	11	14
	%	37%	23%	24%	7%	9%
Q11 Being employee	#	122	10	9	3	12
	%	78%	6%	6%	2%	8%

(Source: Authors, based on the survey*)*

They are willing to risk their regular pay check for own success in running a business venture. This is consistent with the findings of Tecău (2016) and Bădulescu (2015) who studied the students' perception on embracing a future entrepreneurial career, but also with Roșca and Șipoș-Gug (2015) who investigated the students' inclination towards entrepreneurship.

4.4. The influence of education in entrepreneurship decision making process

Education institutions play an important role in shaping the students' interest for entrepreneurship through the implication of professors to promote entrepreneurship and through organizing conferences or contests for students.

Table 6. **Descriptive statistics on students' interest on entrepreneurship issue**

Items		Strongly agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Strongly disagree
Q14 Participating to entrepreneurship conferences	#	16	9	22	21	88
	%	10%	6%	14%	13%	56%
Q15 Interest for more discussions based on entrepreneurship	#	73	47	31	3	2
	%	47%	30%	20%	2%	1%
Q17 Participating to entrepreneurial contests	#	11	20	22	36	67
	%	7%	13%	14%	23%	43%

(Source: Authors, based on the survey*)*

The descriptive analysis from table 6 revealed that students have participated to conferences (Q14) and contests (Q17) in a low proportion, 16% and 20% respectively, but they have expressed their interest for more discussions based on entrepreneurship (Q15) in a greater proportion, 77%. This huge discrepancy may be explained by the student's convenience: they are interested in more information about entrepreneurial issue, but they are not willing to spend extra time. Accordingly, the solution is to discuss additional entrepreneurial aspects in courses and seminars, more than in conferences. The increased interest in entrepreneurship information is consistent with the results of the research conducted by Sumedrea (2017) according to which students expressed an increased interest in participating in future meetings related to entrepreneurship.

4.5. Correlations

For further correlation the data are tested for homogeneity. Table 7 summarizes the indicators and the coefficient of homogeneity is below the threshold of 35%, in most of the cases.

Table 7. **Descriptive statistical indicators**

Statements on	Mean	Standard deviation	Coefficient of homogeneity (%)
Willingness to start-up own business Q10	3.7115	1.2751	34.36
Entrepreneurial skills Q 1-6	3.5684	0.6022	16.88
Family support to start-up own business Q7	4.1090	1.2264	29.85
Entrepreneurship education in university Q12,13,16	3.2671	1.0898	33.36

(Source: Authors, based on the survey*)*

Two hypotheses are tested to assess the relation between education, entrepreneurial skills, willingness to become an entrepreneur and family support.

Correlating question 10 responses and those related to entrepreneurial skills, it results in a problematic fact: the number of students who want to run their own businesses exceeded the number of students who have the necessary skills in entrepreneurship, meaning that they succeed to start-up their business but most probably they will fail to develop and manage the business venture. The students perceive entrepreneurship as a possible career option, they want to take the first step, but they should be helped to improve their skills in order to succeed as entrepreneurs.

Accordingly, *the entrepreneurial skills are influenced by education - hypothesis H_1,* that will be tested with a regression model. For education there were summarized together multiple Likert items related to discussions on entrepreneurships (Q12), encouragements for becoming an entrepreneur (Q13) and invitations of business professionals or entrepreneurs (Q16). Running the single variable regression model, the equation is:

$$ES = \alpha + \beta \times ED \qquad (1),$$

Where
ES = entrepreneurial skills
ED = education

The coefficients of the regression equation are statistically significant (P-value ≤0.05). The intensity of the relationship between the two variables of the model used is measured by a multiple correlation ratio equal to 0.98; there is a direct relationship between variables, of high intensity. The independent variable explains 96% of variation in skills development, the difference of 4% representing the influence of other factors. The model that captures the relation between the two variables is valid, with a confidence level of 0.95 (Significance F ≤ 0.05).

The main conclusion of the regression model is that education is influencing in a significant way (by 96%) the development of the entrepreneurial skills and this explains way there are significant differences in terms of entrepreneurial skills for students following technical and economic studies (Botezat and Borza, 2016). The results are consistent with the view of Nikoloski *et al.* (2014) who stated that higher education promote students' entrepreneurial potential in the south-eastern European countries.

To test the hypothesis H_2 - *The willingness to become an entrepreneur is influenced by education and family support,* a regression model is used with two independent variables. The regression model is the following equation:

$$WE = \alpha + \beta_1 \times ED + \beta_2 \times FF \qquad (2),$$

Where
WE = willingness to become an entrepreneur
ED = education
FF = family support

As P-value ≤ 0.05, the coefficients of regression are statistically significant.

The relationship between the dependent variable and the two independent variables is direct. The model is valid with a confidence level of 0.95. The willingness to become an entrepreneur is influenced by education and family support in a significant way (by 93%).

The coefficients of regression models are summarized in table 8.

Table 8. **Parameters of regression models**

Hypotheses	**H1**	**H2**
Coefficient of determination	0.96	0.93
Coefficient of correlation	0.98	0.96
Fisher Test	4105.42	954.41
Regression coefficients		
Intercept	1.80	-0.31
Coefficient of regression 1	0.54	0.48
Coefficient of regression 2	-	0.62

(Source: Authors, based on the survey*)*

The validation of the second hypothesis should be linked to the fact that most of the participants have not studied any entrepreneurship discipline during faculty or master. The analysis of curricula of master programs organized by Accounting and Management Information Systems reveals a lack of disciplines regarding entrepreneurship, even though, the curricula of other faculties comprises a small number of disciplines on entrepreneurship (table 9).

Table 9. **Subjects on entrepreneurship**

Faculty*	**Number of subjects**	
	Bachelor's degree	**Master's degree**
Agrifood and environmental economics	2	1
Business Administration (in foreign languages)	2	5
Business and Tourism	1	1
Cybernetics, Statistics and Informatics	3	0
Finance and Banking	1	0
International Economic Relations	2	1
Management	0	3
Management and Public Administration	2	0
Marketing	1	0
Theoretical and Applied Economics	2	5

** in alphabetical order*

(Source: Authors, based on own analysis*)*

However, the professors have filled this gap by addressing issues related to entrepreneurship in courses or seminars, by encouraging students to become entrepreneurs and by inviting professionals to their activities.

5. Conclusion

Together with findings, our investigation reflects that students are motivated and have a high willingness to become entrepreneur, and their family and friends are supportive in this journey; these results are consistent with Kumar *et al.*'s (2013) paper.

The core of this research focusses on hypotheses which proves that *the entrepreneurial skills are influenced by education and willingness to become an entrepreneur is influenced by the education and family support.* This means that if a master graduate wants to begin his/her own business in near future, he/she would definitely be able to achieve that. No matter there is a social pressure or family obstacles, his attitude will have an influence on his action. Our findings support the previous studies carried out in this research area (Awan and Ahmad, 2017; Ozaralli and Rivenburgh, 2016; Peng *et al.*, 2012).

In our study, we revealed that education in entrepreneurial field is influencing the willingness of master students in becoming self-employment, but, in the same time, we identify mixt conclusions in respect to education: Oosterbeek *et al.* (2010) showed that the entrepreneurial education given by the education institution does not have impact to students' motivation, and intention to become an entrepreneur, while Kumar *et al.* (2012) obtained results similar with ours.

The study is based on a students' perception questionnaire distributed to 1st and 2nd year students enrolled, in accounting master programs organized by The Bucharest University of Economic Studies.

The limits of research refer to: firstly, the surveys almost always carry the risk of selection bias. It is possible that students may avoid extreme response and may agree with some statements in order to please the experimenter. The survey revels lack of reproducibility and, in many cases is difficult to demonstrate the validity, especially when we analyse human behaviours (Bertram, 2016). Self-reported data carry certain risks of misperception and confusions; in this case, may be related to the ways in which students perceive the questions and how assess the value reported (strongly agree vs strongly disagree); secondly, the research has only focused on some of master programmes organized by Accounting and Management Information Systems during academic year 2018-2019.

A critic in respect to research methodology based on questionnaire is that the findings cannot be extended to wider populations with the same degree of certainty that quantitative analyses can (Atieno, 2009).

Entrepreneurship is a combination of mind-sets, knowledge and skills, and higher education should set up a strategy and an action plan for teaching and researching in entrepreneurship embedding practice-based activities, and strengthen relationships with successful entrepreneurs, Alumni of universities, to enhance all above mentioned dimensions.

We recommend to the Bucharest University of Economic Studies to step forward in adjusting their curricula with more entrepreneurial theme disciplines to contribute in a greater manner in shaping and enlightening the entrepreneurial skills and competences of students; all the more, the OECD (2015) ascertained an increase in number of new ventures created by students and European Commission' studies acknowledged entrepreneurial initiative as a key competence for long-life wisdom (Komarkova, 2015).

The future research will attempt to distribute the questionnaire to the students that are enrolled in all master programmes organized by The Bucharest University of Economic Studies and to continue with next cohorts in order to develop a consistent and reliable data base for future robust researches in entrepreneurial field.

Our paper contributes to this growing academic literature by considering the aspects influencing the entrepreneurial decision among masters' students and to start a more coherent conversation about the relationship between entrepreneurship degree curricula and courses hosted by other disciplines within the framework of cross-disciplinary programs.

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PS11 ACCOUNTING AND FINANCE 2

Chairperson: Elvira Scarlat, IE University, Spain

Does the par value of share influence the success of IPOs?

Tadeusz Dudycz

The determinants of ownership in M&As: An analysis of the stake purchases in Romanian acquisitions

George Marian Aevoae

Roxana Dicu

Daniela Mardiros

The 4 quick solutions – First step towards a definitive VAT system/to reduce the VAT gap across the EU

Rodica Ghiur

Petre Brezeanu

Mariana Vizoli

Does the par value of share influence the success of IPOs?

Tadeusz Dudycz [a, 1]

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Abstract: *This paper examines the impact of the par value (also known as nominal value or face value) on the success of new issues during initial public offering (IPO) and the subsequent efficiency of companies. The study is based on a sample of IPO firms which went public on the Warsaw Stock Exchange from 1998 to 2013. The paper shows that the concept of par value – which was invented to protect buyers and lenders against shares being issued without corresponding existing assets – interacts with investor behaviour and can be used to improve the success of a share issue. The paper also shows that this concept does not affect the profitability of companies after IPO.*

Keywords: *Par value, share capital, signalling, creditor protection, corporate law, IPO, WSE.*

1. Introduction

The concept of par value was conceived in order to counteract fraudulent practices that became widespread after shareholders were released from company obligations (Cook, 1921). These consisted of issues and public sale of shares that were not reflected in assets. Therefore, the concept of par value assigned each share a value reflecting cash payments or assets contributed by each shareholder and reflecting the scope of their liability for the company's obligations (Shares, 1921). The share capital corresponding to the par value of one share multiplied by its quantity reflects the capital that company must maintain in order to satisfy the claims of their creditors.

Share capital is the main element of the capital maintenance principle, because shares cannot be sold below par value and the capital accumulated in this way cannot be distributed as long as the company exists. However, the concept of par value has been criticized since its birth. It has been accused of not being able to effectively protect creditors against the defrauding behaviour of shareholders.

Although the concept of par value has become the cornerstone of company law in many countries, nowadays there is a clear tendency to abandon it. The exception to this is the European Union and the European Economic Area. Its strong position in Europe stems from the support that the concept of par value has in the Second Council Directive of 13 December 1976. Subsequent analyses, such as Reforming Capital – Report of the Interdisciplinary Group on Capital Maintenance (Rickford, 2004) and a feasibility study on an alternative to the capital maintenance regime established by KPMG on behalf of the European Commission (KPMG, 2008) did not find unambiguous reasons for abandoning it. Therefore, it should be expected that this concept will continue to function in the company law of many countries, which justifies further research into its functioning in practice.

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Although the concept of par value was created to protect society and creditors, it may also have an impact on financing companies (Rickford, 2004). On the one hand, share capital can be a signalling tool showing the degree of shareholder involvement in the company (Mulbert & Birke, 2002). Therefore, it can be expected that it will be well invested. On the other hand, its inviolable nature may reduce the flexibility of financing, contributing to a decline in efficiency. The purpose of the article is to examine both the usefulness of share capital as a signalling tool, which contributes to improving the company's position on the capital market, and its impact on the profitability achieved. The contribution of the article to the literature is its examination of the impact of share capital on the success of a new issue during its IPO. According to the author's best knowledge, this aspect has not been studied to date. A new contribution also not previously published in the literature is the examination of the impact of share capital on the profitability of companies. The concept of par value already has over 200 years of history, but previous considerations of its functioning are theoretical and carried out in the field of law and accounting. This article enriches this discussion with empirical research which, to the best of my knowledge, is a new aspect.

The remainder of the paper is organized as follows. Section 2 provides a literature review and the hypotheses for my investigation. Section 3 describes the data, variables used in this study, and research methods. In Section 4, I present and discuss the empirical results, and Section 5 concludes the paper.

2. Literature review and research hypotheses

2.1. Background

The concept of par value was conceived over 200 years ago as a response to the fraudulent behaviour of shareholders after their release from personal responsibility for the company's obligations. This exemption was of great importance for economic development, because it created conditions for public sale of shares and accumulation of capital (Cook, 1921). However, it also resulted in the appearance of negative phenomena involving the sale of shares that did not have adequate coverage in assets, which were hence called 'watered stock'. The concept of par value consists of assigning each share a nominal value reflecting cash payments or assets contributed by each shareholder (Ho & Lan, 1999). Due to the fact that the share capital contributed during the establishment of the company is stable and reliable – because companies cannot redistribute it to shareholders as long as the company operates and new shares cannot be sold below par value – it is a convenient criterion for measuring the extent of shareholders' liability. Share capital can be considered the first legal capital because it began the maintaining capital principle created to protect the company's creditors against the extra risk related to the limited liability of shareholders for the company's liabilities (Armour, 2000). Par value paid by shareholders for their shares is the price required by law for the advantages of limited liability companies (Mwenda, 1999). Legal capital fulfils a similar role for creditors as a financial cushion which acts in the same way as financial adequacy provisions for financial institutions (Bachner, 2009; Handschin, 2012).

Legal capital has been criticized from its inception. Enriques and Macey (2001) believe that the capital maintaining principle does not bring any benefits to creditors; on the contrary, in some cases it even harms them. Consequently, the accompanying burdens of this principle on companies and societies are completely unjustified. The authors are convinced that maintaining this principle in European law, despite its ineffectiveness, results only from the influence of interest groups that benefit from the functioning of legal capital. These include incumbent management boards representing the interests of controlling shareholders, accounting officers providing required share valuation services, and lawyers assisting managers in navigating the maze of unnecessarily complicated laws regarding legal capital. Also, Ho (2017) claims that the principle of capital maintenance contributes to reducing the flexibility of the financial structure and burdens it with cumbersome procedures that force companies to pay for ‘useless expert reports and legal advice’ (p. 19). Similarly, Mulbert and Birke (2002) consider that the utility of the capital maintaining principle for the protection of creditors is small and there is a nontrivial likelihood that this principle does more harm than good. In turn, Mwenda (1999) remarks that the value of assets may increase or decrease over time and, for this reason, this value ceases to correspond to the value of the originally contributed share capital. Therefore, any cash-based equity valuations used as a signal for a market about the value of shares in the company’s equity are usually fictional and may be both meaningless and misleading. Therefore, in contrast to Bebchuk (1992), Ho (2017) is convinced that in the real world creditors do not pay attention to legally maintained capital which should reflect the value of collateral, because they often protect their interests by covenants.

However, there are also authors who see the benefits of the capital maintaining principle. Bonbright (1924) points out that par value does not reflect the value of a company subject to constant change and cannot be determined on the basis of share certificates; it only reflects the capital that shareholders agreed to contribute. In addition, Pennington (1990) emphasizes that the concept of par value is useful when declaring dividends in percentage of par value, as well as determining the voting rights at the general meeting or determining the amounts due to privileged shareholders in the event of the company’s liquidation. According to Mulbert and Birke (2002), the most important positive effect of the capital maintenance principle is limiting harm actions to creditors by distributing capital, in particular by way of ‘hidden distributions’. Therefore, the principle of maintaining capital can be a way to reduce post-contractual opportunism by shareholders (Armour, 2000) and the same mechanism can be used to reduce agency conflict (Panetsos, 2016), because – for example, as reported by Boubakri and Ghouma (2010) – covenants may be ineffective in protecting creditors if the ultimate owners are a family. Cascino *et al.* (2013) are advocates of a continental accounting model which focuses on creditors and requires highly codified reporting (Joos & Lang, 1994), and empirical evidence from Europe shows that creditors prefer conservative accounting valuations.

Although the purpose of the par value regime is to protect creditors against fraudulent behaviour of shareholders, it can be used as a tool to influence the financing of the company (Rickford, 2004). This impact results both from the properties and mechanism of the par value regime. Generally, two types of interactions can be distinguished. The first behavioural interaction results from the number of shares and the nominal value of the stock determined by it. By appropriately shaping these parameters, there is a possibility to incline investors towards committing perceptual biases. The second type of interaction results from the value of the entire share capital and the consequences of the capital maintenance principle.

The main purpose of this article is to test the impact of the entire share capital on the success of issuance during an IPO, as well as its impact on the profitability of companies.

2.2. Hypotheses

Share capital is subject to the principle of capital maintenance, which means that it is inviolable during the functioning of the enterprise. According to Mulbert and Birke (2002), it can serve as a 'seriousness' test and as a signal that shareholders have confidence in their company and intend to work hard towards its success. Therefore, this capital should be located in the most valuable assets, as opposed to other types of equity, such as reserve capital or retained earnings. Reserve capital and retained earnings are more transitory in nature and therefore may be invested in short-term assets with lower efficiency. From this, one could expect that when there is more equity capital in the equity structure, this is a strong positive signal for investors, improving the company's position on the capital market, and these companies will be characterized by higher profitability. Based on this, two hypotheses have been formulated:

H1: Share capital is an effective signalling tool contributing to the success of the new issue.

H2: A high share of share capital in the equity structure contributes to the improvement of companies' profitability.

1. Sample description and research method

3.1. Sample

The study is based on a sample of IPO firms which went public on the Warsaw Stock Exchange from 1998 to 2013 (total number of IPOs reported in Panel A of Table 1). This initial sample of 496 IPOs was reduced by excluding:

a. financial institutions (e.g., banks and insurance companies),
b. IPOs which were not connected with new common stock issuance,
c. IPOs for which data was incomplete.

The final sample thus consists of 259 IPOs. Panel A of Table 1 shows the variations in the sample number of IPOs over the 16 years.

The primary source of data used in this study was Notoria Service; however, because there are sometimes incomplete or incorrect data in the database, other sources of data were used to supplement these, such as IPO prospectuses, and annual reports available on the companies' websites and at www.gpwinfostrefa.pl.

The main focus of this study is the impact of share capital on the success of issuance during IPO and profitability after IPO. Panel B of Table 1 reports the basic characteristics of the sample firms one year before IPO, such as total assets, total sales, and financing parameters. The variables used in this study are defined in Table 2.

3.2. Research methods

In the first step, three models were built in which the dependent variables were parameters which characterized the issue success. Three parameters were selected: the relation of the issue price to the book value of the shares, the percentage increase in equity, and the ratio of the percentage increase in equity to the percentage number of shares sold. The following variables were used as control variables: indicators showing the financial condition of the company, such as ROE, ROS, CR, S/A, E/FA, D/A; parameters illustrating the economic situation, such as WIG, WIG percentage change, and GDP growth; and SC/E was used as a measure for the share capital. The sector was added. The number of issued shares was strongly related to the size of the company and the nominal value of the shares. In order to increase the symmetry of the distribution, most parameters were shown as a logarithm. The explanation of the parameters used is presented in Table 2. Therefore, the models used are as follows:

$$Y_t = \alpha + \beta_1 sector + \beta_2 ROE_{t-1} + \beta_3 ROS_{t-1} + \beta_4 Ln\frac{S}{A}_{t-1} + \beta_5 \frac{D}{A}_{t-1} + \beta_6 LnCR + \beta_7 Ln\frac{E}{FA}_{t-1} + \beta_8 GDP + \beta_9 LnWIG + \beta_{10} WIG[\%] + \beta_{11} LnNP + \beta_{12}\frac{SC}{E}_{t-1} + \beta_{13} NrSh + \varepsilon_t$$

In the second step, eight models for ROA and eight for ROE were built to examine the impact of the parameters that the companies had before IPO on the profitability after IPO. The first model (Column 2) shows the correlation between the factors before IPO and the profitability before IPO. The same is shown in the second model (Column 3), except that it was tested for a sample with a smaller SC/E. A SC/E value was chosen below which it did not affect profitability. In addition, the NrSh parameter was replaced with the assets parameter, which better reflects the size of the company and may be related to profitability. Starting from the year of IPO, an IP/BV parameter was added to the models reflecting the success of the issue. Therefore, the model used was as follows:

For ROA and ROE before IPO:

$$Y_t = \alpha + \beta_1 sector + \beta_2 ROS_{t-1} + \beta_3 Ln\frac{S}{A}_{t-1} + \beta_4 \frac{D}{A}_{t-1} + \beta_5 LnCR + \beta_6 Ln\frac{E}{FA}_{t-1} + \beta_7 GDP + \beta_8 LnWIG + \beta_9 WIG[\%] + \beta_{10}\frac{SC}{E}_{t-1} + \beta_{11} LnAssets_{t-1} + \varepsilon_t$$

and for ROA and ROE in the year of IPO and subsequent years after IPO:

$$Y_t = \alpha + \beta_1 sector + \beta_2 ROS_{t-1} + \beta_3 Ln\frac{S}{A}_{t-1} + \beta_4 \frac{D}{A}_{t-1} + \beta_5 LnCR + \beta_6 Ln\frac{E}{FA}_{t-1} + \beta_7 GDP + \beta_8 LnWIG + \beta_9 WIG[\%] + \beta_{10}\frac{SC}{E}_{t-1} + \beta_{11} LnAssets_{t-1} + \beta_{12}\frac{IP}{BV}_{t-1} + \varepsilon_t$$

4. Results

In Table 3, Panel A, we can see that IPO companies obtain very large amounts of capital. The trimmed average shows that the capital increase is above 150% (Proceeds/SE_{t-1} [%]), investors pay more than PLN 4.8 for each zloty of the book value (IP/BV_{-1}), and the sale of one percent of shares allows you to increase equity capital more than 6% ((Proceeds/SE_{t-1})/ (% shares sold)). It can be concluded that IPO companies generally succeed during the issue, allowing them to multiply their capital. This success is determined by profitability (ROE) (Table 3, Panel B) which was also reported on in previous studies (Dudycz & Brycz, 2017).

A good signal for investors is also the possession of large amounts of cash (CR) and high indebtedness (D/A), which is a signal for investors that the banks, as a third party, have rated the company well (Brycz, Dudycz, & Kowalski, 2017).

The success of the emission is also influenced by timing, especially measured by GDP growth. However, apart from the financial condition and timing, the impact of which has already been reported in the literature, the success of emissions is also influenced by a triad of factors determining the emission parameters. As we can see in Table 3, Panel B, the impact of the success of the issue is to emit a small number of shares (NrSh) with low NP, the book value of which is characterized by a large share of SC in Equity (SC/E). Issuing a small number of shares increases the probability such that the demand for shares will exceed supply, which will positively affect the price of shares. Low NP means that the remaining types of share values (book value, issue price) are also relatively low, so they induce investors to make perceptual biases such as the 'face value' effect or 'charm price', whereas, the positive impact of SC/E ratio on the success of the issue shows that, for investors, share capital is a measure of investor involvement that promises better management of the company and, consequently, higher efficiency of the company. This confirms the hypothesis that share capital can be used as a signalling tool to improve the company's position on the capital market.

Tables 4 and 5 analysed the impact of factors on ROA and ROE before issue, as well as the stability of the impact of parameters value obtained before the issue on the profitability after issue.

Table 1. **Sample characteristics**

		1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	1998–2013
Panel A																		
Total number of IPOs		51	20	11	7	5	6	36	58	63	81	31	13	34	38	19	23	496
Sample number of IPOs		25	15	9	5	2	5	24	22	25	52	22	9	21	12	4	7	259
Sample number of IPOs to total number of IPOs [%]		49.0	75.0	81.8	71.4	40.0	83.3	66.7	37.9	39.7	64.2	71.0	69.2	61.8	31.6	21.1	30.4	52.2
GDP growth [%]		5.0	4.5	4.3	1.2	1.4	3.9	5.3	3.6	6.2	6.8	5.1	1.6	3.8	4.3	1.9	1.6	74.5
WIG		12,795.6	18,083.6	17,847.6	13,922.2	14,366.7	20,820.1	26,636.2	35,600.8	50,411.8	55,648.5	27,228.6	39,986.0	47,489.9	37,595.4	47,460.6	51,284.3	
Change in WIG [%]		-12.8	41.3	-1.3	-22.0	3.2	44.9	27.9	33.7	41.6	10.4	-51.1	46.9	18.8	-20.8	26.2	8.1	
Panel B																		
Assets $_{-1}$ [PLN million]	Mean	44.8	142.5	596.2	43.1	86.1	134.9	130.5	1 044.6	118.9	97.9	496.1	2,719.5	129.7	115.2	312.9	183.3	331.9
	SD	35.9	172.4	1 158.3	33.8	52.8	57.0	212.7	3 134.6	168.5	152.6	1,868.1	7,160.0	146.2	85.6	253.5	123.5	1,736.8
	Median	34.8	52.5	39.4	41.7	86.1	122.0	74.2	52.4	55.9	52.1	29.0	69.9	93.9	96.3	329.3	161.6	54.7
Sales $_{-1}$ [PLN million]	Mean	91.4	235.8	174.0	47.5	269.4	162.8	107.3	966.3	144.5	118.3	343.6	1,243.6	90.6	98.1	144.0	82.0	253.5
	SD	101.9	260.9	249.5	67.7	299.5	85.1	221.2	2,215.7	256.9	130.9	1,072.9	3,190.0	114.5	88.5	156.8	141.8	961.8
	Median	52.8	78.5	63.1	23.1	269.4	189.3	49.2	77.7	50.0	62.5	26.8	36.5	53.7	69.2	120.7	8.0	54.9
ROA [%]	Mean	19.5	16.6	16.3	-4.6	7.1	12.4	9.3	9.1	12.9	14.0	11.6	10.6	11.9	18.1	9.1	2.7	12.7
	SD	9.4	8.5	16.2	34.5	0.7	8.4	9.2	8.2	12.4	11.0	9.8	10.2	12.2	22.6	15.7	5.7	12.4
	Median	16.9	13.7	11.9	8.4	7.1	12.4	6.2	7.1	8.5	12.4	10.4	11.7	8.7	9.8	1.9	1.5	10.4
ROE [%]	Mean	24.4	32.1	12.1	3.5	6.2	18.3	10.7	18.0	23.0	28.1	24.0	13.0	25.2	29.9	12.7	6.6	21.9
	SD	21.0	21.8	33.7	40.3	5.8	11.9	27.6	13.8	19.6	21.7	21.8	12.4	36.1	25.7	15.1	12.7	23.8
	Median	17.4	24.6	17.8	11.4	6.2	23.4	10.7	19.6	20.7	25.3	17.6	14.3	16.8	23.8	9.6	2.2	19.6
IP/BV $_{-1}$	Mean	2.6	2.9	2.6	3.6	1.7	3.8	4.9	6.5	11.3	8.8	6.3	1.9	5.4	5.1	4.3	2.7	6.0
	SD	2.2	2.0	2.6	1.7	0.4	2.0	3.1	14.0	12.8	7.3	6.4	0.9	7.1	3.3	4.6	1.8	7.7
	Median	1.7	2.6	1.9	3.1	1.7	4.2	4.5	2.7	7.1	7.4	3.9	1.6	2.9	4.6	2.9	2.3	3.7
Proceeds/SE$_{t-1}$ [%]	Mean	97.0	118.4	90.1	133.0	75.3	118.3	207.7	196.3	341.1	314.7	135.6	45.0	117.7	87.8	93.9	81.2	188.0
	SD	101.0	169.3	79.9	101.3	57.3	43.7	160.5	322.6	324.8	356.3	127.9	37.7	94.3	56.7	145.9	75.9	247.2
	Median	55.8	59.5	67.5	101.1	75.3	125.6	185.6	63.3	220.0	207.4	93.1	32.1	76.9	76.7	31.0	58.4	109.0
(Proceeds/SE$_{t-1}$)/ (% shares sold)	Mean	3.5	5.5	3.5	4.9	3.9	4.9	6.9	8.5	13.9	10.8	7.6	2.5	6.6	5.7	5.2	3.3	7.6
	SD	2.9	7.6	3.4	1.9	1.0	2.2	4.3	16.9	14.3	7.3	7.3	1.0	7.9	3.2	6.0	2.7	9.0
	Median	2.0	2.8	2.9	5.1	3.9	5.2	6.0	4.1	8.8	8.8	5.0	2.2	3.7	6.4	3.2	2.0	5.0

(*Source*: Compiled by the author)

Table 2. **Variable definitions**

Variable	**Definition**
Ln NP	Natural logarithm of nominal price of share
Ln Assets	Natural logarithm of total assets
Ln Sales	Natural logarithm of net sales
Ln SC/E	Natural logarithm of share capital to the total shareholders' equity ratio
Ln S/A	Sales to total assets ratio
ROE	Return on equity defined as net income divided by shareholders' equity calculated as the difference between total assets and total liabilities
ROS	Return on sales ratio
D/A	Debt ratio defined as total debt (the sum of current liabilities and long-term liabilities) divided by total assets
Ln CR	Natural logarithm of cash ratio defined as short-term investments divided by current liabilities
Ln E/FA	Natural logarithm of shareholders' equity-to-fixed-assets ratio defined as shareholders' equity to total fixed assets
Ln NrSh	Natural logarithm of number share issued
IP/NP	Ratio of issue price to the nominal value of shares
Ln IP/BV	Natural logarithm of ratio of issue price to the book value of shares
Ln WIG	Natural logarithm of value of the Warsaw Stock Exchange Index, which comprises all companies listed on the main market; the initial value of the WIG Index on 16 April 1991 was 1,000 points
WIG [%]	Rate of return on WIG Index
GDP growth	GDP growth rate defined as the percentage change in gross domestic product during one year
Sector	Sector of the economy. A variable used to control for the sector effect, which is coded as: 1 – architecture; 2 – chemical industry; 3 – energy; 4 – mining and metallurgy; 5 – trade; 6 – information technology; 7 – media and telecommunications; 8 – heavy industry; 9 – light industry; 10 – food industry; 11 – services.
Ln NrSh	Natural logarithm of number share issued
Proceeds/SE_{t-1}	Percentage increase in shareholders' equity through the issuance of primary shares calculated as the IPO proceeds from the sale of primary shares divided by total shareholders' equity at the beginning of the IPO year (calculated as the difference between total assets and total liabilities)
(Proceeds/SE_{t-1})/(% shares sold)	Percentage increase in shareholders' equity to the percentage of shares sold via the issuance of primary shares
Subscripts: -1, 0, 1, 2, 3, 4, 5	indicates the year in relation to the year of issue (and 0 is the year of issue)

(*Source*: Compiled by the author)

As we can see in Table 4, Panel A, the mean ROA before IPO was about 12% (trimmed mean) and, then, in the year of IPO and the next two years after IPO, it fell. In the third, fourth, and fifth years, it stabilized at a relatively low level of around 3%. The drop in ROA in the year of IPO is justified by the acquisition of large amounts of new capital, which the companies were not able to invest in rapidly. It was invested in short-term investments that did not generate an adequate rate of return. However, a further drop in the first and second year after IPO cannot be explained rationally and requires further in-depth research in this area.

Before IPO, ROA is determined by the factors taken into account in the Du Pont model: ROS and S/A (Table 4, Panel B). At the same time, high ROA characterizes companies as having high asset productivity (S/A) and a low profit margin (ROS). The conclusion is that the strategy of using low margins made up of high turnover brings better results for the growth of ROA.

Companies with high ROA are also characterized by lower indebtedness measured both by D/A and E/FA. However, this may reflect the effect and not the cause. Companies with good operating results are less likely to borrow. High ROA is also a feature of smaller companies (assets). The share of SC in E is negatively correlated with ROA.

Table 3. **Regression analysis of the determinants of IPO success**

	IP/BV $_{-1}$	Proceeds/SE$_{t-1}$ [%]	(Proceeds/SE$_{t-1}$)/ (% shares sold)
1	2	3	4
Panel A: Mean value			
Mean	5.96	188.0	7.61
Trimmed mean 5%	4.81	151.7	6.38
SD	7.74	247.2	8.99
Median	3.72	109.0	4.96
Panel B: Regression analysis			
	Ln IP/BV $_{-1}$	Ln Proceeds/SE$_{t-1}$	Ln (Proceeds/SE$_{t-1}$)/ (% shares sold)
Sector	-0.065 (0.043)	-0.067 (0.051)	-0.082 (0.045)
ROE $_{-1}$	0.253*** (0.048)	0.203*** (0.058)	0.265*** (0.051)
ROS $_{-1}$	-0.061 (0.049)	-0.043 (0.059)	-0.051 (0.051)
Ln S/A $_{-1}$	-0.055 (0.057)	0.086 (0.069)	-0.050 (0.060)
D/A $_{-1}$	0.212*** (0.056)	0.325*** (0.067)	0.243*** (0.058)
Ln CR $_{-1}$	0.171*** (0.048)	0.097* (0.058)	0.143*** (0.051)
Ln E/FA $_{-1}$	-0.079 (0.051)	0.048 (0.061)	-0.045 (0.053)
GDP	0.175*** (0.047)	0.238*** (0.056)	0.200*** (0.049)
Ln WIG	0.241*** (0.054)	0.094 (0.064)	0.168*** (0.056)
WIG [%]	0.026 (0.045)	0.068 (0.054)	0.054 (0.047)
Ln NP	-0.511*** (0.061)	-0.141* (0.073)	-0.474*** (0.064)
Ln SC/E $_{-1}$	0.402*** (0.053)	0.249*** (0.063)	0.406*** (0.056)
Ln NrSh	-0.288*** (0.047)	0.098* (0.056)	-0.198*** (0.049)
R^2	0.602	0.427	0.561
Adjusted R^2	0.581	0.396	0.538
F	28.388	13.988	23.997

Panel A reports the mean values of each variable Y_t. Panel B reports the results of the regressions models. The constant term is not reported. The standard errors that are robust to heteroscedasticity are reported in parentheses. *, **, and *** indicate that coefficients are significant at 10, 5, and 1 per cent levels of significance, respectively.

(*Source*: Compiled by the author)

This is probably due to the fact that companies with low operating profitability also achieved poor results in the periods preceding their debut and, therefore, they did not accumulate an adequate amount of reserve capital or they destroyed it by financing losses and thus increased their SC/E ratio. Therefore, in Column 3, with the method of successive approximations, the limit value SC/E = 0.3 (accurate to 0.05) was found below that at which the correlation between SC/E and ROA disappears. This confirms the hypothesis that the rather low operational efficiency of companies and the related low level of profit accumulation have an impact on the low value of SC/E.

The correlation between the remaining parameters, with the exception of E/FA, remained statistically significant. In addition, there was a weak correlation between ROA and the sector in which the company operates. In the year of the debut (Column 4), the value of the parameters obtained before the debut of the predictive power maintains asset productivity (S/A) and, to a lesser extent, the debt (E/FA) and SC/E. The size of the company is positively correlated with ROA; this is opposite to the position before the IPO.

Table 4. **Analysis of the impact of parameter values obtained before IPO on ROA after IPO**

	ROA_{-1} [%]		ROA_0 [%]	ROA_1 %]	ROA_2 [%]	ROA_3 [%]	ROA_4 [%]	ROA_5 [%]
	All	SC/E_{-1}<0.3						
1	2	3	4	5	6	7	8	9
Panel A: Mean value								
N	259	147	259	259	259	245	222	194
Mean	12.7	14.5	7.8	5.1	1.0	2.4	3.8	4.6
Trimmed mean 5%	12.2	13.7	8.0	5.4	3.0	2.5	3.5	2.5
SD	12.4	12.4	9.4	15.7	26.9	24.4	18.9	44.1
Median	10.4	11.7	7.3	5.4	3.4	3.2	3.3	3.1
Panel B: Regression analysis								
Sector	0.076 (0.054)	0.126* (0.069)	0.067 (0.061)	-0.013 (0.064)	-0.041 (0.064)	0.095 (0.066)	0.109 (0.070)	-0.004 (0.077)
ROS_{-1}	-0.122* (0.063)	-0.219** (0.084)	-0.038 (0.069)	0.042 (0.074)	-0.083 (0.073)	0.026 (0.076)	0.025 (0.080)	-0.025 (0.089)
Ln S/A_{-1}	0.438*** (0.073)	0.577*** (0.096)	0.311*** (0.081)	0.169** (0.086)	0.117 (0.085)	0.021 (0.087)	0.102 (0.090)	0.125 (0.099)
D/A_{-1}	-0.121* (0.069)	-0.238*** (0.085)	-0.102 (0.084)	0.044 (0.089)	-0.106 (0.089)	-0.009 (0.089)	0.076 (0.092)	0.147 (0.101)
Ln CR_{-1}	0.022 (0.062)	0.116 (0.075)	-0.151** (0.071)	0.087 (0.075)	-0.092 (0.075)	0.190** (0.076)	0.272*** (0.080)	0.096 (0.086)
Ln E/FA_{-1}	0.134** (0.065)	0.065 (0.080)	0.141* (0.072)	0.040 (0.076)	0.141* (0.076)	0.001 (0.076)	-0.065 (0.079)	-0.013 (0.085)
GDP	0.032 (0.060)	-0.050 (0.074)	0.083 (0.068)	- 0.215*** (0.072)	-0.241*** (0.072)	-0.036 (0.074)	-0.169** (0.079)	-0.357*** (0.086)
Ln WIG	-0.072 (0.061)	-0.016 (0.079)	-0.138* (0.074)	0.141* (0.078)	0.160** (0.078)	0.087 (0.081)	0.135 (0.087)	0.258*** (0.094)
WIG [%]	0.044 (0.057)	-0.019 (0.070)	0.063 (0.064)	0.036 (0.067)	-0.048 (0.067)	0.112 (0.069)	-0.024 (0.071)	-0.024 (0.079)

Ln SC/E $_{-1}$	-0.185*** (0.056)	-0.100 (0.076)	-0.117* (0.063)	-0.034 (0.066)	0.040 (0.066)	-0.104 (0.068)	-0.136 (0.071)	-0.019 (0.076)
Ln Assets $_{-1}$	-0.186*** (0.062)	-0.239*** (0.075)	0.199** (0.077)	0.044 (0.081)	0.134* (0.081)	0.001 (0.083)	-0.064 (0.085)	-0.014 (0.091)
Ln IP/BV $_{-1}$			0.235*** (0.082)	0.032 (0.087)	0.071 (0.086)	0.129 (0.088)	0.073 (0.091)	-0.077 (0.099)
R^2	0.329	0.430	0.175	0.076	0.080	0.105	0.125	0.116
Adjusted R^2	0.298	0.384	0.134	0.031	0.035	0.059	0.075	0.057
F	10.943	9.266	4.317	1.685	1.771	2.260	2.485	1.970

Panel A reports the mean values of each variable Y_t. Panel B reports the results of the regressions models. The constant term is not reported. The standard errors that are robust to heteroscedasticity are reported in parentheses. *, **, and *** indicate that coefficients are significant at 10, 5, and 1 per cent levels of significance, respectively. The subscript denotes the IPO year.

(*Source*: Compiled by the author)

Table 5. **Analysis of the impact of parameter values obtained before IPO on ROE after IPO**

	ROE $_{-1}$ [%] All	ROE $_{-1}$ [%] SC/E $_{-1}$<0.6	ROE $_0$ [%]	ROE $_1$ %]	ROE $_2$ [%]	ROE $_3$ [%]	ROE $_4$ [%]	ROE $_5$ [%]
1	2	3	4	5	6	7	8	9
Panel A: Mean value								
N	259	197	259	257	249	235	215	187
Mean	21.9	25.6	9.2	2.0	-7.2	-7.5	-10.1	-43.2
Trimmed mean 5%	21.4	24.7	10.1	6.3	2.3	-0.1	4.1	2.7
SD	23.8	22.7	14.9	43.2	72.0	57.0	148.0	582.1
Median	19.6	22.9	10.0	7.1	4.5	4.3	4.8	4.6
Panel B: Regression analysis								
Sector	0.064 (0.056)	0.054 (0.062)	0.048 (0.057)	0.003 (0.029)	-0.112* (0.065)	-0.053 (0.068)	0.091 (0.073)	0.089 (0.078)
ROS $_{-1}$	0.100 (0.064)	0.143* (0.076)	0.248*** (0.066)	0.881*** (0.034)	0.088 (0.075)	-0.019 (0.080)	-0.015 (0.085)	-0.047 (0.093)
Ln S/A $_{-1}$	0.226*** (0.075)	0.269*** (0.087)	0.249*** (0.076)	0.013 (0.038)	0.087 (0.084)	0.022 (0.089)	0.011 (0.093)	0.132 (0.101)
D/A $_{-1}$	0.277*** (0.071)	0.289*** (0.080)	-0.009 (0.077)	-0.053 (0.039)	-0.198** (0.086)	-0.108 (0.089)	-0.068 (0.093)	-0.220** (0.101)
Ln CR $_{-1}$	0.140** (0.064)	0.261*** (0.072)	-0.050 (0.068)	-0.039 (0.034)	0.074 (0.076)	0.003 (0.080)	0.115 (0.084)	-0.056 (0.090)
Ln E/FA $_{-1}$	0.198*** (0.067)	0.044 (0.077)	-0.038 (0.059)	0.020 (0.030)	0.028 (0.066)	0.039 (0.069)	-0.057 (0.072)	0.010 (0.077)
GDP	-0.036 (0.062)	-0.032 (0.068)	0.038 (0.064)	-0.074** (0.032)	-0.089 (0.071)	-0.050 (0.076)	0.190** (0.082)	-0.074 (0.088)
Ln WIG	0.044 (0.063)	0.048 (0.074)	-0.045 (0.070)	0.047 (0.036)	-0.038 (0.078)	0.042 (0.084)	0.063 (0.091)	0.049 (0.097)
WIG [%]	-0.041 (0.059)	-0.062 (0.066)	0.069 (0.061)	0.071** (0.031)	0.090 (0.068)	0.184** (0.072)	0.152** (0.075)	-0.132 (0.082)
Ln SC/E $_{-1}$	-0.178*** (0.058)	-0.088 (0.072)	-0.109 (0.060)	-0.024 (0.030)	-0.078 (0.067)	-0.062 (0.070)	-0.045 (0.073)	0.036 (0.078)
Ln Assets $_{-1}$	-0.147** (0.063)	-0.223*** (0.073)	0.199*** (0.072)	0.051 (0.036)	0.138* (0.080)	0.102 (0.084)	-0.015 (0.086)	0.248*** (0.093)
Ln IP/BV $_{-1}$			0.246*** (0.078)	0.068 (0.039)	0.191** (0.086)	0.168 (0.091)	-0.077 (0.095)	0.364*** (0.102)
R^2	0.288	0.328	0.251	0.810	0.100	0.079	0.085	0.105
Adjusted R^2	0.256	0.288	0.214	0.800	0.054	0.029	0.031	0.043
F	9.032	8.192	6.845	86.212	2.181	1.570 N	1.565N	1.691

Panel A reports the mean values of each variable Y_t. Panel B reports the results of the regressions models. The constant term is not reported. The standard errors that are robust to heteroscedasticity are reported in parentheses.
*, **, and *** indicate that coefficients are significant at 10, 5, and 1 per cent levels of significance, respectively. The subscript denotes the IPO year.

(*Source*: Compiled by the author)

This may be due to the fact that larger companies reported less emission success (Dudycz & Brycz, 2017), so they gained less capital which was not invested in the year of their debut; thus, it contributed less to the decline in ROA. Also, the parameter that reflects the success of emissions (IP/BV) is positively correlated with ROA and this is a consequence of the fact that, prior to the IPO, profitability was a strong positive signal for investors contributing to good issue assessment, and this correlation persisted in the year of debut after posting the new issue. However, importantly, in the next five years after IPO, the results obtained by companies before IPO and issue parameters – which were correlated with ROA before IPO and contributed to the success of the issue – almost completely lost their predictive power for ROA in the subsequent years after IPO.

Share capital – which, as shown earlier improves the image of the debuting company by contributing to the success of the issue – has no relation to the profitability achieved after the debut. However, some predictive power for ROA is visible for the timing parameters, especially GDP. Companies making their debut in bad economic times achieve higher ROA in the years after IPO. Taking into account the previous finding – that before IPO timing had no impact on ROA, which was also previously reported (Dudycz & Brycz, 2017) – we can presume that in bad economic times, companies that need capital to finance investments debut; whereas, in good economic times, the main reason for a debut is the desire to use market optimism.

By analysing ROE in the same way, we see in Table 5, Panel A, that it behaves like ROA. The debuting companies reported a high ROE before the issue; thus, for the next two years it fell and stabilized from the second year after the debut. Before the debut, similar parameters, as in the case of ROA, are correlated with ROE (Table 5, Panel B). The exception is indebtedness (D/A), which is positively correlated and results from financial leverage. However, the predictive force for the ROE of the timing parameters is clearly weaker. The share of share capital in equity (SC/E) does not show any relation to profitability after IPO.

5. Conclusions

The par value regime imposes on companies the obligation to create and maintain capital in order to secure the claims of the company's creditors. The effectiveness of such security has been questioned from the inception of the par value concept. However, there are reports in the literature that the par value regime can affect the financing of the company both positively and negatively. A positive impact may result from investors' perceptions of share capital as a measure of shareholder commitment and as a kind of 'seriousness test'. On the other hand, a negative impact may be the result of low flexibility of equity consisting largely of share capital.

The research presented in this article shows that, in fact, equity capital is a positive signal for investors, contributing to the success of a new issue. Apart from good financial results of the company, this success is also determined by issue parameters such as the number of issued shares and their unit value. The number of issued shares of the new issue affects their supply. Too high a number has a negative impact on the success of the issue.

The question arises whether this factor is global or only appears in small markets where a limited number of active investors operate. However, answering this question would require expanding the research.

The low unit price of shares, in turn, contributes to investors making perceptual biases, which are manifest in the separation of the share price from its fundamentals. In this context, par value can be seen as a manipulation tool contributing to the success of the issue. However, this research shows that share capital has no impact on the profitability of companies. Neither a positive impact is expected because of the personal involvement of the shareholders, nor a negative impact resulting from a small elasticity of equity consisting largely of share capital.

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The determinants of ownership in M&As: An analysis of the stake purchases in Romanian acquisitions

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Abstract: *The growing activity regarding mergers and acquisitions (M&As) in the last 30 years is due to globalization, a process that reached to all the aspects of social and economic life of persons and entities, mainly through the free movement of goods, services, capital and labor, known as the four pillars of the European Union (EU). Romania, as a member state of the EU, by 2007 January 1st, benefited from its status, in this type of restructuring transactions. Considering a sample of 192 acquisitions, with one target and one acquirer, in which a Romanian company was involved, either in the position of the acquirer or of the target, we consider a number of financial ratios describing both companies, their degree of relatedness and the type of M&A (domestic or cross-border) as predictors for the amount of investment that the acquirer made in the target company. The analysis will consider all the transactions, but also the two main NACE categories (industry and services). Using a mediation model, the results will show that the workforce ratio, the productivity ratio and the relatedness of the two companies have a significantly influence in the percentage purchased in the target company, but the national/international side of the M&As lead to an increase in the capacity of the proposed models to predict the variance of the final investment.*

Keywords: *Acquisitions, ownership, relatedness, determinants, stake.*

1. Introduction

Globalization is a catchy term and researchers from economic field presented their opinion regarding it, including in studies related to M&As (Nitzan, 2001; Norbäck and Persson, 2008; Warter and Warter, 2014). Although the time has passed, it still continues to be an arguable phenomenon, which brings advantages and, along with them, disadvantages. Globalization has, as main effect, like Thomas L. Friedman (2005) suggested in the title of his book, the fact that "the world is flat", without frontiers. Globalization, amongst others, is the process by which economic entities develop international influence or, even start operating on international scale. M&As offer the best tools for external economic growth and, in Europe, countries from within the European Union (EU) have all the strengths and opportunities in this respect. Companies, by combining their activities, may allow the development of new products more efficiently, reduce production or distribution costs. In this context, "the market becomes more competitive and consumers benefit from higher-quality goods at fairer prices" (European Commission, 2013). Even though some M&As may reduce competition in a market and harm consumers through higher prices, reduced choices or less innovation, this kind of transactions are being examined by the European Commission in order to prevent harmful effects on competition. In other words, increased competition within the European Union, the desire for a single market and

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the globalization constitute the main factors which make it attractive for companies to join forces.

Romania is a market with potential, a strategic location, and a favourable business climate as the International Trade Administration (2018) states, despite its weaknesses. Although Romania overthrew its communist regime more than 28 years ago, the government still plays an oversized role in the economy in terms of employment, ownership of assets, and influence on the business environment. After joining the EU in 2007, Romania made some progress, even though companies still report challenges and poor infrastructure which continue to negatively impact business costs, productivity, public safety and the ability to attract FDI. In these particular conditions, its economy is among the EU's fastest growing: 4.8% growth in 2016 and 6.9% in 2017 (the highest since 2008) (International Trade Administration, 2018). This growth is primarily consumption-based, which makes Romania an open market, in which companies try to be competitive when selling their product. A downsize in this case is that it allows bigger companies to enter the Romanian market and small economic entities to struggle for survival due to fiscal and tax policy, wages and pension increases. The Index of Economic Freedom (2018) presents Romania as 42^nd^ freest economy, with a score of 68.6, situated between Malta (41^st^) and Thailand (43^rd^), the first positions being occupied by Hong Kong, Singapore and New Zealand.

The case of Romania, regarding M&As before 2007 January 1^st^ and after the adherence date, is presented in Table 1.

Table 1. **The evolution of 22 years of Romanian M&A activity**

Year M&As	**1997**	**1998**	**1999**	**2000**	**2001**
No. of M&As	7	10	20	45	28
Deal value (Th. euro)	99,997.38	470,944.11	1,306,101.57	2,996,042.70	725,317.47
2002	**2003**	**2004**	**2005**	**2006**	**2007**
99	88	99	153	152	184
728,637.27	1,053,248.20	2,516,471.60	3,203,348.88	2,125,434.47	1,663,429.06
2008	**2009**	**2010**	**2011**	**2012**	**2013**
175	137	228	177	282	402
5,713,521.04	981,255.40	777,373.71	55,839.05	1,147,656.68	1,963,394.08
2014	**2015**	**2016**	**2017**	**2018**	**Total**
538	279	355	570	521	4,549
3,389,609.98	1,780,199.64	1,852,315.16	9,376,784.09	2,509,212.56	46,436,134.1

(*Source:* Authors' own processing, using Zephyr database 1997-2018)

The information presented in Table 1 reflects all the M&A activity in Romania, with available deal value and completion date, collected from Zephyr database. Romanian M&As notice an increasing trend in the number of transaction and/or deal value, in the 1997-2018 period of time. In a separate study, we identified that a large number of transactions and a low deal value is due to the fact that foreign companies are interested in small companies which apply local GAAP, thus they cost less than a company which applies IFRS (Aevoae and Georgescu, 2019).

The consequences of M&As on the performance of entities involved in these transformation processes have been and still represent a key point of interest for both practitioners and economic researchers (Bouchikhi and Kimberly, 2012; Rani *et al.*, 2015). There are many approaches that explain why M&As occur. In the literature, in most cases, the motivation of the management of the acquiring company and the shareholders of the target company are mostly taken into account, the consequences on other stakeholders being considered on a considerably lower measure. This could be explained by the fact that the decision to enter into a M&A depends on the management of the two companies, but also on the investors of the target company.

The M&A experience may appear difficult and life-changing for the involved entities and their stakeholders, but it is familiar to those who have been already through this process. Also, it illustrates why there is need for a new M&A math, which should expand from a simple efficiency calculation to a new dimension: for one plus one to make more than two at the economic level, one plus one must make one at the psychological level. When M&As fail to deliver promised levels of performance, as frequently occurs, it is likely due at least in part to a lack of psychological synergies (Bouchikhi and Kimberly, 2012). That is why the employee component in any M&A should be of great importance for both the management and the investors, with a special emphasis on the number of employees each company brings into the concentration.

Starting from these premises, the present study intends to estimate the influence of efficiency indicators (productivity ratios), workforce indicators (employee ratios) and a number of qualitative characteristics of the target company on the percentage of shares, purchased by an acquirer in a M&A transaction which involves at least one Romanian company. Thus, we intend to validate a model which assesses the influence of some determinants on the stake purchased, for the case of Romanian M&A market.

2. Literature review and hypotheses development

Acquisitions, as world recognized expansion strategies, account for almost half of the worldwide M&As, but one thing that matters the most in this assessment is the level of equity (stake) that the executives of the acquirers decide to purchase in the target companies.

2.1. A taxonomy of acquisitions

The two main categories involved in negotiating and closing a M&A are investors of the companies and their managers, other stakeholders having little influence in the process. The position in the company of the two mentioned categories and their responsibilities determine specific roles in the M&A phases (discovery, due diligence, agreement and announcement, integration, and sustainable performance) (Schuster and Hunter, 2015). Starting from Easterbrook’s (1984) opinion, that the investors have ownership without control and the managers have control without ownership, a full classification of M&As can be discussed.

Both mergers and acquisitions can be negotiated by the management, having the approval of the target’s Board of Directors, or may result from offers made directly to the shareholders of the target company (Knoeber, 1986). When discussing a possible classification of acquisitions, in theory and practice, the most common structures are *negotiated M&As*, and *tender offers, friendly or hostile*. Historically, tender offers were an easy way to acquire a company, being an effective corporate governance mechanism, used as a takeover device to bypass an unreceptive board of directors (Offenberg and Pirinsky, 2015). In the opinion of the latter authors, the hostile tender offers are preferred over the friendly ones, because they are faster and result in higher premiums for shareholders of the target company. From managers' point of view, both negotiated M&As and tender offers leave one team of managers (out of two) in control of the new company and its assets. This represents the visible consequence of competition for control, and the victory should belong to the managers that can use the assets at their best (Easterbrook, 1984).

In the case of acquisitions, the management of the two companies needs to be further discussed because they do not require financial or performance changes, from an accounting point of view. Acquisitions only cause changes in the shareholder structure of the target company. Thus, a common situation is the one in which the acquisition is approved by the management of the target company. In fact, the acquiring entity announces the Board of Directors about the intention to acquire the target company, which approves the transaction. But not always the acquisitions are friendly, the opposite case being that of the *hostile takeovers* (Irfan, 2010). There are three possibilities that conduct to this type of takeovers. The first one is the situation in which the acquiring company's management buys the titles of the existing shareholders, offering higher prices which include a higher premium. Shleifer and Summers (1988) have argued that the large premiums received by corporate shareholders derive from the improved management and increased efficiency brought about by restructurings. In the second case, the acquirers change the management of the target company, using a simple majority of company's shareholders willing to vote for that change. The new management votes for the acquisitions. In the third case, the acquirers pursue and purchase the securities put on sale by the target company on capital markets (Suzuki, 2015). According to Irfan (2010), in vertically differentiated industries, in equilibrium, target's executives keep low level of R&D and advertising expenditures to make their firm an unattractive target for hostile takeovers.

Although, in most cases, the acquiring company is the one who imposes the rules in the post-concentration integration period, in the case of *reverse acquisitions*, the acquiring entity undergo major changes imposed or determined by the target company (Denison *et al.*, 2011). Another special situation is the one of the *backflip acquisitions*, in which the target company turns, post-acquisition, into a subsidiary of the acquiring company (Di Laurea, 2014: 9).

In this context, it is necessary to analyse the concentration in terms of expected benefits, taking into account the elements that have the potential to generate them, to the detriment of those that theoretically should lead to such a situation. We have in mind the cost of implementing change measures, the quantifiable economic benefits resulting from the implementation of the measures, the time horizon in which they are expected to be achieved, and the negative synergies that may result from the conclusion of the transactions. Thus, the premium becomes a consequence of the M&A and reflects the reality of the transaction if these elements are realistically established. Payment of a specific premium reflecting the expected synergy value does not provide any guarantee in this respect; in fact, the acquirer pays for an *opportunity to achieve synergy* (Ficery *et al.*, 2007).

2.2. The economic and psychological side of employees in M&As

The synergies in a M&A can be related to activities and to employees. Traditionally, the scientific literature focused mainly on strategic and financial factors but, recently, more studies have explored the socio-cultural and human resources factors (Rizen-Bakher, 2018).

A fundamental difference between real assets and human capital is that real assets can be purchased, while human capital is rented (Lee *et al.*, 2018), so there are few ways in which it can be measured. From an accounting point of view, the annual reports of the companies present the average number of employees per year and the cost of employees, next to other information related to pensions, incentives and other benefits. In the context, in M&As, productivity related to employees can be calculated as ratios between accounting figures and the number of employees: revenues per employee (Rozen-Bakher, 2018), assets per employee and income per employee (Frazer and Zhang, 2009; Kumar and Suhas, 2010) or capital per employee (Bandick and Görg, 2010). Also, the number of employees brought by each company in the concentration can be representative for the calculation of a workforce ratio (Rozen-Bakher, 2018; Bandick and Görg, 2010).

Conyon *et al.* (2000) assert that M&A behaviour inevitably leads to, and indeed is motivated by, the possibility of drastically downsizing the workforce. In both cases, it is difficult to retain and redeploy the combined firms' workforces or layoff duplicate and/or less productive workers (Lee *et al.*, 2018). There is a wealth of information that will help organizational leaders develop a cost–benefit model for a M&A and project the intangible costs and benefits associated with the people factor. As with any significant change, destabilization of the workforce can result in a decline of performance characterized by losses in productivity, revenue, opportunities, retention, extensive costs of hiring and replacement. Ideally, these declines will correct themselves, and the gains will show, as integration progresses and sustainable performance are achieved.

Thus, each of the companies comes into the M&A with its own employees, but, in integration phase and later, it can be an endeavour to realize human capital synergies.

The human capital synergy success can be analysed taking into account the combination of skills, abilities and knowledge of employees brought by each company in the concentration. In other cases, it emerges from the combined competences of a group as a result of the learning process resulting from previous interactions within the group (Harrigan *et al.*, 2016). Other studies have pointed out that organizational cultural differences increase post-concentration conflicts, if they appear as a result of M&As (Sarala, 2010; Sarala and Vaara, 2009; Stahl and Voigt, 2008) for several reasons, including identities conflict that lead to inter-group stigma (Cartwright and Schoenberg, 2006), ambiguity in values and practices, distrust and lack of cooperation, as the rise of the inter-group conflict leads to alienation, stress, anger, low engagement and detachment (Weber *et al.*, 2011). Panchal and Cartwright (2001) state that the employees from the acquired company or smaller M&A partner may be confronted with more stress because they face longer and more negative change. Blackard and Gibson (2002) propose the term productive synergy, the result of a situation in which the conflict of opinion between employees leads to solutions. The only condition is that the individuals involved (employees, employers) share the differences and learn from them. As a consequence, the expected economic synergies must be preceded and combined with the psychological ones. There is a collective effect on employee psychological synergies of three different relationships. First one is the relationship between *the employee* and the *new organization*, which underlines the importance of employee identification with and commitment to post-M&A organizational strategy and goals. The second relationship settles between *the employee and its supervisor/manager*, representing the extent to which a supervisor delegates and gives autonomy to employees. The last relationship that greatly influence employees' assessments of their jobs is *the employee–co-worker relationship* (Alegre *et al.*, 2016).

2.3. Qualitative and quantitative determinants in M&As

The concept of relatedness is very discussed in the M&A literature, being associated to both the assets involved and the core activities of the companies. In the opinion of King *et al.* (2004), the relatedness between target companies and their acquirers can be related to resources or product-market similarity. Canina *et al.* (2010) consider that the relatedness of assets is more obvious for the horizontal M&As, then in any other case (vertical and conglomerate). Considering M&As, Hagerdoorn and Duysters (2010) consider relatedness in terms of relationship: they believe that horizontal/vertical M&As are made between related companies, while conglomerate M&As are between unrelated companies. Cefis and Rigamonti (2013) consider that the industry relatedness does not occur randomly, but it is, in fact, one of the main aspects that an acquirer must take into consideration before pursuing a M&A. According to Fan and Lang (2000), two business can be classified as unrelated if they do not share the same two-, three-, or four-digit code of the national classification of economic activities, and vice-versa. This last approach was the one used to describe the relationship between the two companies.

The concept of value creation through mergers and acquisitions is highlighted both in the literature and in the practice of companies by assessing it, on the one hand, for the acquirer and, on the other hand, for the target company. In this context, it is of great importance to establish the report between the productivity of the two companies, in the pre-M&A phase, in order to establish the stake which is to be purchased in the concentration. Later, after the integration stage, the same information could be used as a benchmark for the efficiency gains and M&A success, as increases in revenues or economies of costs (Rozen-Bakher, 2018; Frazer and Zhang, 2009; Devos *et al.*, 2009). M&A studies underline the fact that, in the post-M&A phase, the creation of value is particularly evident in the target companies, the shareholders of the acquiring entities remaining, at best, in the situation where they were in the pre-M&A phase (Canina *et al.*, 2010, Jensen and Ruback, 1983; Andrade *et al.,* 2001).

In the pre-M&A phases, such as due diligence and negotiation, the number and location of employees, salaries and benefit structure are hard facts that influence the decision to participate in M&As (Schuster and Hunter, 2015). After the decision is made, the report between the number of employees of the involved companies is an indicator that can influence the purchased stake (Rozen-Bakher, 2018).

We hypothesis that in M&As, another aspect of major importance, when analysing the acquirer's choice for a company, the amount of stake purchased into a target is strongly influenced by the location of the target company. Thus, we can discuss about domestic and cross-border M&As. Cross-border acquisitions can be expected to be more complex, and thus more costly and risky to execute, than domestic acquisitions (Danbolt and Maciver, 2012). Thus, a differentiation between the two types of M&A has a positive significant influence, as mediation variable, on the stake purchased in the target company.

Companies perform acquisitions for various reasons. They may seek to achieve economies of scale, greater market share, increased synergy, cost reductions, or new niche offerings, all of them resulting in synergy success or efficiency gains. All these start from the purchase of a specific stake in a target company that fulfils the needs of the acquirer. In this context, we propose to test and validate the following hypotheses:

H_1: *The investment decision of an acquirer to purchase a certain amount of stake in a target company is positively influenced by the industry relatedness, productivity ratio, and workforce ratio.*

H_2: *The national/international dimension of the M&A is positively influencing the acquirer's decision to invest into a certain amount of stake in a target company.*

These hypotheses will be tested and validated using the statistical software SPSS 25.0.

3. Research methodology and design

The study aims at analysing the influence of the productivity and workforce ratios, the relatedness between the activities of the companies involved and of the national/international dimension on the investment made by the acquirers in the equity of the target companies, considering the example of Romanian M&A activity, namely acquisitions.

3.1. Target population and analysed sample

To test and to validate the proposed research hypotheses, the study analyses the empirical data related to 192 M&As, for the 2010 – 2017 period of time, in which at least one Romanian company is involved. Out of these, 130 transactions are industry M&As and 62 transactions are services M&As. According to EU, sections A-G from NACE Rev. 2 are associated to industry, sections H-U are composing the services. The data regarding the NACE main section for the target company are collected from Zephyr database, for the 2010-2017 period of time. The sample analysed contains financial information for both the target and the acquirer company, this reduced the analysed sample for the range of time taken into account. Also, the study considers only the 1:1 acquisitions (one acquirer and one target), with available deal values.

To reach the proposed research hypotheses, we use linear regression, cross tabulation and ANOVA.

3.2. Models proposed for analysis and data source

This paper examines a series of factors influencing the stake purchased in a target, considering the acquisitions made by Romanian companies, either in the position of acquirer or target, for the 2010-2017 period of time. The proposed variables are presented in Table 2.

Table 2. **The variables proposed for the analysis**

Symbol	Representation	Description	Explanation
Stake (S)	%	Dependent variable (DV)	The percentage purchased in the target companies (0.001-100%). Information collected from Zephyr database, for the 2010-2017 period of time.
Workforce ratio (Work_r)	$\frac{Employees\_acq_{t-1}}{Employees\_target_{t-1}}$	Independent variable (IV)/ numeric	The ratio is calculated considering the number of employees of the acquirer and of the target company, reported for the year before the M&A; information collected from Orbis database, for the 2010-2017 period of time.
Productivity ratio (Prod_r)	$\frac{\frac{Revenues\_acq_{t-1}}{Employees\_acq_{t-1}}}{\frac{Revenues\_target_{t-1}}{Employees\_target_{t-1}}}$	Independent variable (IV)/ numeric	The ratio is calculated considering the operating revenues per employee for the acquirer and for the target company, reported for the year before the M&A; information collected from Orbis database, for the 2010-2017 period of time.
Relatedness (R_UnR)	1. Related M&As 2. Unrelated M&As	Independent variable (IV)/ categorical	Considering the NACE Rev. 2 main codes for the target and for the acquirer, from the Orbis database, the relatedness of the involved companies was completed by hand, comparing the first two digits of the NACE primary code.
Domestic/Cross-border M&As (Int)	1. Cross-border M&As 2. Domestic M&As	Mediation variable/ categorical	The countries of the acquirer and of the target companies were considered, information collected from Zephyr database, for the 2010-2017 period of time.

(Source: Authors' own processing)

Dependent variable. This variable represents the stake purchased by the acquirer in the target company. Thus, this variable is a percentage between 0.001% (shares in jointly controlled entities) and 100% (acquisition of a controlling interest).

Independent variables. The variables *Workforce ratio* and *Productivity ratio* are presented in Table 1 and they are calculated as a report between the data of the acquirer and the one of the target company, considering the financial information for the year before the M&A. According to Rozen-Backer (2018), the data from the year before the concentration are specific to pre-M&A stage and they are collected from Orbis database.

Mediation variable. The assumption of causality is implicit in the definition of mediation, as a mediator is defined as an explanatory mechanism through which one variable affects another (Wood *et al.*, 2007). This variable is considered for the year of the merger, given the fact that there are studies which validated its significance in influencing a financial dependent variable (Aevoae *et al.*, 2018; Moeller and Schlingemann, 2005).

The proposed hypotheses are examined using mediation analysis, considering all M&As, industry M&As and services M&As. There are multiple ways to test a mediation model (Frazier *et al.*, 2004, Wu and Zumbo, 2008). When paths a and b are controlled, a previously significant relation between IV and DV is no longer significant (complete mediation) or its significance is dropping (partial mediation). In our case, the paths are presented in Figure 1:

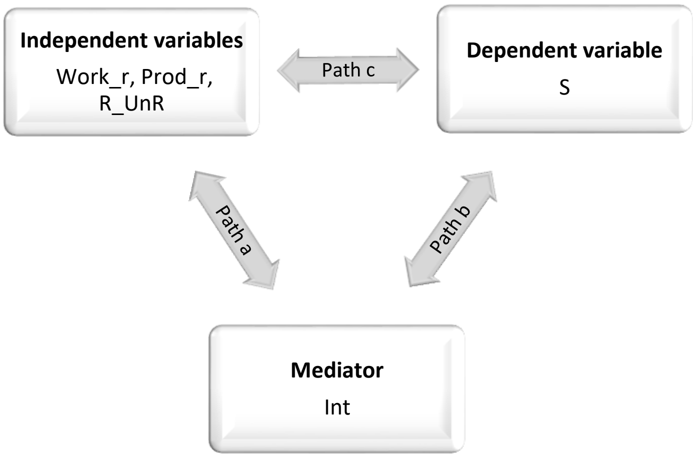

Figure 1. **The proposed mediation model**
(Source: Authors' own processing)

Our mediation model includes the following steps, tested and validated for all M&As, and then separately for industry and services M&As:
1) path *c* is predicting the DV from independent variables *Work_r*, *Prod_r* and *R_UnR* (without the mediator); the model is presented in Eq. (1):

$$S(\%) = \alpha + \beta_1 \cdot Work\_r + \beta_2 \cdot Prod\_r + \beta_3 \cdot R\_UnR + \varepsilon$$

2) path *a* is predicting the mediator *Int* from the independent variables *Work_r*, *Prod_r* and *R_UnR*; the model is presented in Eq. (2):

$$Int = \alpha + \beta_1 \cdot Work\_r + \beta_2 \cdot Prod\_r + \beta_3 \cdot R\_UnR + \varepsilon$$

3) path *b x c* is predicting the DV from independent variables *Work_r*, *Prod_r* and *R_UnR* (including the mediator); the model is presented in Eq. (3):

$$S(\%) = \alpha + \beta_1 \cdot Work\_r + \beta_2 \cdot Prod\_r + \beta_3 \cdot R\_UnR + \beta_4 \cdot Int + \varepsilon$$

The used method is hierarchical linear regression (HLR) because it is a way to show if variables of our interest explain a statistically significant amount of variance in our DV after accounting for all other variables. Also, our study includes variance inflation factor (VIF), to identify multicollinearity problems. The VIF and tolerance are both widely used measures of the degree of multi-collinearity of the i^{th} independent variable with the other independent variables in a regression model (O'Brien, 2007) and it has three accepted thresholds: if VIF is higher than 3, than the probability for multicollinearity increases, when VIF is higher than 5, there is most probable to have collinearity and, in case VIF is higher than 10, the collinearity exists for sure.

4. Results and discussions on the influence of specific determinants on the purchased stake in a target company

The study will present a series of descriptive statistics for the analysed variables (per total and on categories considered in the analysis), including the ANOVA for the stake, considering the national/international dimension of the M&A and the relatedness between the companies, of the values of the Pearson correlation coefficients and the estimations of the parameters of the proposed regression models.

The ANOVA results, presented in Table 3, show significant difference between the means of the purchased stakes in the target companies, considering two groups of transactions: transactions which involved related/unrelated companies and transactions in which the two companies are located in Romania or one is in Romania and the other one is located in a different residence country.

Table 3. **The ANOVA for the categorical variables considering the purchased stake**

Categories	Number	Mean	Std. Deviation	F-ratio and p-value
Unrelated M&As Related M&As	124 68	44.60841 73.39268	39.981670 36.338841	F (1,190) = 24.240 Sig. = .000
Domestic M&As Cross-border M&As	132 60	43.73435 79.15352	38.819639 35.010701	F (1,190) = 36.452 Sig. = .000
Total	**192**	**54.80284**	**41.026130**	

(*Source*: Authors' own processing, using SPSS 25.0)

Regarding the nominal variables used in the models (relatedness and the national/international dimension of the Romanian acquisitions), the cross tabulation is presented in Table 4.

Table 4. **Cross tabulation between nominal variables**

Nominal variables	Domestic M&As		Cross-border M&As		Total	
Unrelated M&As	97	50.52%	27	14.06%	**124**	**64.58%**
Related M&As	35	18.23%	33	17.19%	**68**	**35.42%**
Total	**132**	**68.75%**	**60**	**31.25%**	**192**	**100%**

(*Source*: Authors' own processing, using SPSS 25.0)

As we notice in Table 4, the most acquisitions in Romania are included in domestic conglomerate M&As (97 transactions), although the mean of the stake purchased in unrelated M&As is much lower than the one purchased in related M&As (vertical or horizontal) (see Table 3). Given the opinion according to which the financial reasons conduct to conglomerate M&As, rather than the productivity ones (Nelson-Espeland and Hirsch, 1990), the acquirers purchase an amount of stake which can bring economic benefits, but they don't consider acquiring a company as a whole or a controlling interest. In our case, both ANOVAs are significant ($p<0.01$), which means that we reject he null hypothesis (we validated the fact that there is a difference between the means, considering the DV as the numeric variable). Also, we calculated the strength of association between the two nominal variables using Cramer's *phi* coefficient ($\varphi = .276$, $p < 0.01$). The value of the coefficient reflects a good significant association between the relatedness of the companies involved in M&As and the national/international dimension of the concentration.

Table 5. **Descriptive statistics for numeric variables**

Values	**Final stake (%)**	**Workforce ratio**	**Productivity ratio**
Minimum	0.023	0	0
Maximum	100	1004.18	8687.1
Mean	54.80284	33.4241	64.5203
Std. Deviation	41.02613	105.6082	643.2524
No. of observations	192	192	192

(*Source*: Authors' own processing, using SPSS 25.0)

According to Table 5, the lowest value for workforce is 0, which means that there are acquiring companies with 0 employees that acquired targets. The highest value is around 1.000 employees, which means that a large company acquired a small one, for diverse reasons (assets, innovative products or niche market). Also, there are companies that report 0 productivity, because they didn't report employees in the annual report approved for the year before the acquisition. The highest productivity ratio is 8,687.1 EUR.

The values of the coefficients for the Pearson correlation is presented in Table 6.

Table 6. **Pearson Correlation coefficient for numeric variables**

Variables		**Stake (%)**	**Workforce ratio**	**Productivity ratio**
Stake (%)	*All M&As*	1	.247**	.096
			.000	.185
	Industry M&As	1	.251**	.121
			.002	.169
	Services M&As	1	.317**	-.040
			.008	.759
Workforce ratio	*All M&As*	.247**	1	-.013
		.000		.853
	Industry M&As	.251**	1	-.016
		.002		.855
	Services M&As	.317**	1	-.132
		.008		.294
Productivity ratio	*All M&As*	.096	-.013	1
		.185	.853	
	Industry M&As	.121	-.016	1
		.169	.855	
	Services M&As	-.040	-.132	1
		.759	.294	

*. Correlation is significant at the 0.05 level (2-tailed).
**. Correlation is significant at the 0.01 level (2-tailed).

(*Source*: Authors' own processing, using SPSS 25.0)

According to information presented in Table 5, there isn't a significant correlation between the purchased stake and the productivity ratio, overall and by NACE main section, as established in Table 2 (sig. = 0.185, r = 0.096 for all M&As, sig. = 0.169, r = 0.121 for industry M&As, sig. = 0.759, r = -0.40 service M&As), nor between workforce ratio and productivity ratio (sig. = 0.853, r = -0.132 for all M&As, sig. = 0.855, r = -0.016 for industry M&As, sig. = 0.294, r = -0.40 service M&As). On the other hand, the workforce ratio is significantly correlated with the dependent variable, with a level of significance under 1%. This implies that the stake purchased by the acquirer is positively and significantly correlated with the report between the employees of the two companies, in the year before the M&A (the number of employees reported the last annual financial statements that are approved to be published).

As well, high values of the Pearson correlation coefficient between the productivity ratio and workforce ratio, and also between the stake and the productivity ratio, for all the transactions and also split between industry and services, emphasize the possibility for collinearity between the independent variables. In order to check the multicollinearity, we present, in Table 7, the variance inflation factor (VIF). Once the values of the correlation coefficients have been estimated, to study the causality, Table 7 displays the estimations of the parameters for three regression models proposed for testing and validation, considering path a), per total and by major core activity (industry and services).

Table 7. **Parameters estimation for the regression model for path *a***

Variables	Values for path *a* All M&As β (t-values)	M&As - Industry β (t-values)	M&As - Services β (t-values)
Workforce ratio (Work_r)	.302*** (4.449)	.284*** (3.339)	.495*** (4.563)
Productivity ratio (Prod_r)	.104 (1.563)	.117 (1.430)	.100 (.885)
Relatedness (R_UnR)	.216*** (3.191)	.191** (2.247)	.355*** (3.177)
R^2	.174	.158	.335
Adjusted R^2	.160	.138	.301
F	F (3,188) = 13.158, p = .000	F (3,126) = 7.890, p = .000	F (3,58) = 9.749, p = .000
N	192	130	62
Multicollinearity tests	Tolerance $\tau_i = 1 - R_i^2 = 0.826$ VIF= 1.001	Tolerance $\tau_i = 1 - R_i^2 = 0.842$ VIF= 1.001	Tolerance $\tau_i = 1 - R_i^2 = 0.665$ VIF= 1.081

Level of significance: *p < 0,1; **p < 0,05; ***p < 0,01.

(Source: Authors' own processing, using SPSS 25.0)

Table 7 present the influence of the independent variables on the mediation variable, all three models (all M&As, industry M&As and services M&As) being significant (p < 0.01). Based on the data in Table 7, all the variables have a positive influence on the national/international dimension of the M&As. The relatedness of the two companies positively and significantly influences the acquirers' choice for cross-border M&As, fact confirmed in Table 4, where the number of cross-border M&As between related companies is higher than the number of conglomerate M&As. Also, the acquirers with a high number of employees will purchase targets with a low number of employees, from another country. The productivity of the target company doesn't influence the choice for a domestic or a cross-border M&A. The workforce ratio and the relatedness are positively and significantly influence the choice for cross-border M&As in the case of all the M&As in the sample, but also in the case of industry and services M&As. The predictors account for the highest variance of the dependent variable (R^2 = .335) in the case of services M&As.

Table 8 presents the estimation of the parameters of the proposed models for the paths b and b x c, considering the explanation in Figure 1.

Table 8. **Parameters estimation for the hierarchical regression model for paths *c* and *b x c***

Variables	**All M&As**		**M&As - Industry**		**M&As – Services**	
	Step 1 - Path *c*	**Step 2 - Path *b x c***	**Step 1 - Path *c***	**Step 2 - Path *b x c***	**Step 1 - Path *c***	**Step 2 - Path *b x c***
Workforce ratio (Work_r)	.189*** (2.765)	.100 (1.457)	.160 (1.926)	.065 (.798)	.339*** (2.774)	.265 (1.863)
Productivity ratio (Prod_r)	.109 (1.634)	.079 (1.221)	.137 (1.722)	.098 (1.297)	.073 (.578)	.058 (.458)
Relatedness (R_UnR)	.301*** (4.393)	.237*** (3.517)	.357*** (4.296)	.293*** (3.666)	.242 (1.928)	.190 (1.393)
Domestic/CBM&A (Int)	-	.294*** (4.164)	-	.333*** (4.065)	-	.149 (1.006)
R^2	.159	.230	.199	.292	.157	.171
R^2 *change*	-	.071	-	.093	-	.014
Adjusted R^2	.146	.214	.180	.270	.113	.113
F	F (3,188) = 11.850, p = .000	F (4,187) = 13.994, p = .000	F (3,126) = 10.421 p = .000	F (4,125) = 12.911 p = .000	F (3,58) = 3.589 p = .019	F (4,57) = 2.946 p = .028
F change	-	17.335***	-	16.551***	-	0.982**
N	192	192	130	130	62	62
Multicollinearity tests	Tolerance $\tau_i = 0.841$ VIF= 1.001	Tolerance $\tau_i = 0.770$ VIF= 1.003	Tolerance $\tau_i = 0.801$ VIF= 1.001	Tolerance $\tau_i = 0.708$ VIF= 1.013	Tolerance $\tau_i = 0.843$ VIF= 1.081	Tolerance $\tau_i = 0.827$ VIF= 1.038

Level of significance: *p < 0,1; **p < 0,05; ***p < 0,01.

(*Source*: Authors’ own processing, using SPSS 25.0)

According to Table 8, the fact that the companies have related core activities (considering the first 3 digits of the NACE main code), which makes them either vertical or horizontal M&As, have a positive and significant influence on the final stake purchased. Thus, an acquirer will purchase a higher stake if the target company has related activities, fact that is also confirmed by the information presented in Table 3 (the mean stake purchased in related M&As is 73.39%, compared to the one purchased in conglomerate M&As, which is 44.61%). Also, the workforce ratio, calculated using the number of employees reported by the acquirer and the target in the last annual report before the deal took place, have a positive and significant influence on the final stake, which means that the larger the acquirer compared to the target, the higher the investment in the acquired company. The productivity of the acquirer compared to the target has a positive, but not significant influence on the stake, which means that the volume of revenues of the target, in the year before the M&A, compared to those of the acquirer, reported to the number of employees, doesn't influence the final stake. In case of the industry M&As, the only significant variable is the relatedness, which means that the acquirers are purchasing higher stakes in companies in the same field or related, no matter the number of employees or their revenues. The capacity of the model to predict the variance in the dependent variable is the highest in the industry sector (R^2 = .199). In services M&As, the independent variable that is significant and positively influence the investment in target company is the workforce, which means the large acquirers purchase high stakes in small target company (considering the number of employees as measurement indicator). We have to acknowledge the fact that the mediation variable in all three cases improves the proposed model to predict the variance of the DV (R^2 change) in table 8.

When adding the mediation variable to the model (paths b & c), the predictors, workforce ratio, productivity ratio, relatedness and the national/international dimension of the M&A, account for 23% of the variance of the dependent variable (the final stake) in the case of all the M&As in the sample, for 29.2% in the case of industry M&As and only 17% in the case of services M&As.

5. Conclusions

Romania is a market with potential, a strategic location, and a favourable business climate as the International Trade Administration (2018) states. Despite its weaknesses, it doesn't have a significant history regarding M&As, but the year of the adherence to the European Union was a turning point. After 2007, it became a more active and attractive market for companies, local and abroad, fact that led to the number of transactions almost tripling from 184 to 521 transactions, in the 2007-2018 period of time.

The fact that the acquisitions are not regulated by a specific legislation in Romania, like mergers are, makes it difficult to identify them, being just a purchase of an investment in another company's capital. Because we identified 192 acquisitions which involved at least one Romanian company, in either the position of the acquirer or/and the target, we identified some determinants of the stake purchased by the acquiring company in the target entity. In order to detail our analysis, we test and validate our hypotheses for all M&As (192 transactions) and, then, for industry M&As (130 transactions) and services M&As (62 transactions).

The fact that the companies have related core activities (considering the first 3 digits of the NACE main code), which makes them either vertical or horizontal M&As, have a positive and significant influence on the final stake purchased. Thus, an acquirer will purchase a higher stake if its activities are related to the ones of the target company, which is also confirmed by the mean stake purchased in related M&As (73.39%), compared to the one purchased in conglomerate M&As (44.61%). Also, the workforce ratio has a positive and significant influence on the final stake, which means that the larger the acquirer compared to the target, the higher the investment in the acquired company. The productivity of the acquirer compared to the target has a positive, but not significant influence on the stake, which means that the volume of revenues of the target, in the year before the M&A, compared to those of the acquirer, reported to the number of employees, doesn't influence the final stake. In case of the industry M&As, the only significant variable is the relatedness, which means that the acquirers are purchasing higher stakes in companies in the same filed or related, no matter the number of employees or their revenues. In services M&As, the independent variable that is significant and positively influence the investment in target company is the workforce, which means the large acquirers purchase high stakes in small target company.

One of the limits of the study is the relatively small number of transactions in our sample (192 acquisitions). The fact that many involved companies (acquirers and targets) reported zero employees in the year prior to the M&A made the calculation of productivity ratios and workforce ratios impossible. Second, many companies involved in M&As, according to Zephyr database, were missing the financial data in Orbis database. For future research, we intend to analyse the influence of macroeconomic conditions of the involved companies' residence countries, in the year of the M&A, given the fact the information from Zephyr database is more complete when considering the M&As.

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The 4 quick solutions - First step towards a definitive VAT system/to reduce the VAT gap across the EU

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***Abstract**: Through this study, we have tried to show the 4 "quick solutions" that have been implemented and will be applied in the period before the introduction of the definitive VAT system, what involve the new provisions involve, which is the legal framework regulates them. Since the 4 "quick solutions" cannot be mathematically quantified neither for the past nor as a result in the future, we have tried in this study a classification of the Member States by three variables: the share of total VAT revenues in GDP (Gross Domestic Product), the share of the VAT gap and the corruption perceptions index. The taxonomy/typology of these Member States was achieved using cluster analysis, where Member States were grouped into 2 clusters. Since the first "quick solutions" was for Member States applying simplification measures within the structure generically named call-off stocks, we identified through this study that within the cluster with the most countries that applying simplification measures there can also be found the countries with a high VAT gap, with a low VAT rate in GDP and a low corruption perceptions index. However, we have not been able to establish an exact typology of countries based on the simplification regime applied, with reference to the three variables subject to this analysis, because each cluster comprises both countries implementing simplification measures and countries that do not apply simplification measures. However, we considered that the desire of the EU Council and of the European Commission to put in place these solutions is timely, in order to avoid different approaches, which if not conducive to fraud could lead to damage legal certainty.*

***Keywords:** Statistical analysis, cluster analysis, tax incidence, VAT, directives.*

1. Introduction

This study sums up five chapters; the first part is the introduction in which we present what will be the subject matter of the analysis in each chapter. The second chapter presents the literature, focusing on two components: on the one hand, a presentation of the measures taken by the EU Council and the European Commission towards a definitive VAT system, especially the first one, namely the implementation of the four "quick solutions", compared to those already existing in the national legislation, and the second component presents a part of the literature that studied the VAT gap, its formation, its determinant factors. In the third chapter entitled *The research methodology and the data used*, there are presented the data used for the cluster analysis, the source and their relevance, the defining elements for the cluster analysis, such as: definition, methods, stages that were used, interpretation and evaluation of

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interpretations. Chapter 4, entitled *The results obtained*, presents the results to be interpreted in relation to the output in *Appendix 1*. The chapter presents the composition of each cluster and tries to establish a typology of the countries applying a simplification regime, depending on the variables used in the analysis. The last chapter presents the conclusions, which have also been presented in chapter 4, namely in this study it was not possible to create a typology of states that apply or do not apply the simplification measures starting from a legal framework and 3 statistical variables which define 28 Member States in 2016.

2. Literature review

The literature review is structured in two parts: on the one hand we will present the importance of the VAT system at EU level and the attempts of the European Commission and the European Council to establish a definitive VAT regime, especially on the legal actions/framework before its establishment in 2027 through the four quick solutions taken by the Council, and on the other hand, we will try to present the literature that studied the VAT gap, the way of calculation, its causes, so that we can then establish a certain causality between the mode of action of some Member States and their typology taking into account the registered VAT gap and other variables, as we will ultimately point out.

The VAT system of the EU is shown to be "*too fragmented and too willing to fraud*", so its re-launch is imminently required, all the more so since according to *Eurostat* and the *Statistics on tax revenues*, VAT represented in 2015 about €1,000 billion from the EU budget, about 7% of EU GDP (COM (2017) 566 final, Brussels, 2017, p. 3). Currently, in the EU's positive law, VAT area is a transitional regime of VAT. A regime which, on the basis of the provisions of Directive 2006/112/EC, should be replaced by a definitive one (Council Directive 2006/112/EC, Article 402, paragraph (1)). The establishment of a definitive VAT regime, capable of functioning within the EU as the VAT system would function within a single Member State, is the premise of the commitment made by the Council of the European Union since 1967 (Council Directive (EU) 2018/1910 (1) of its Preamble). On April 7, 2016, the European Commission adopted its VAT Action Plan. The Commission sets out how the VAT rules (European Commission's VAT Action Plan, Brussels, 2016, p. 1) should be amended/upgraded so as to ensure the following objectives: the establishment of a definitive VAT system, combating VAT fraud, combating VAT revenue shortfalls, adapting the VAT system for e-commerce, introducing measures to facilitate the work of SMEs, an adequate VAT rate policy by upgrading the legal framework and granting more flexibility to the Member States in their establishment (Vizoli, 2019).

As stated in the legal framework and as literature shows (Lapalus, 2014), the European Commission and the Member States have tried to establish a definitive VAT regime since 1967, based on the principle of origin. The evolution of the single market has indicated the need to change the emphasis from the principle of origin to the destination principle. Therefore, the future definitive VAT system will be based on the principle of taxation of operations in the Member State of destination. In the VAT Action Plan, the Commission gradually establishes two phases in which the full VAT system is to be applied. The first stage concerns the tax regime applicable from 1 July 2022 for B2B transactions in the EU. The second stage concerns the tax regime starting with 2027 for all cross-border operations including services provision; starting with 2027, the new definitive VAT regime will apply to all cross-border operations. In the final Commission's Communication COM (2017) 566, the first stage would also include two other sub-stages.

The first so-called new sub-phase concerns a proposal for a directive and a proposal to amend two regulations: *Implementing Regulation (EU) No 282/2011 of the Council from 15 March 2011, laying down implementing measures for Directive 2006/112/EC on the common system of value added tax* (hereinafter referred to as Regulation (EU) 282/2011) and the Regulation on administrative cooperation in VAT scope. The proposal for a directive introduces the notion of a taxable person (a kind of authorized economic operator in the customs scope but in the field of VAT), the three "quick solutions" and the legal bases of the definitive VAT system. The proposal to amend Regulation (EU) 282/2011 introduces another "quick solution", so this first sub-step sums up four "quick solutions". And the proposal to amend the Regulation on Administrative Cooperation aims to change the VIES system by including in the notion of certified taxable person. The second sub-stage concerns a proposal for a Directive aimed at laying down provisions for the implementation of legal bases, including IT technical measures capable of making the VAT system operational until 2022. The notion of taxable person in the scope of VAT has long been debated by specialists, the European Fiscal Committee (CFE), 2017, states that the procedure for obtaining this status must be harmonized and that taxable persons who have obtained that status must be constantly monitored. A lack of harmonization in such a case could lead to a distortion of the situation by showing that, for example, some businesses might be established in Member States where this status can be more easily achieved and the status of certified person taxable could be used against the purposes in which it was created, for example, as a vehicle capable of leading to fraud.

CFE also points out that, in the absence of a perfect harmonization of the criteria and tests to which taxable persons are subject, there is a risk of adverse effects on the commercial relations between the parties; an enterprise that was refused to be granted the status but who could have obtained that status in another Member State could plead infringement of the principle of non - discrimination. Moreover, CFE also points out that there is a risk that this status will be achieved over a longer period, given the way in which this notion has been modelled, namely after obtaining the authorization of the customs operator, which, as a rule, is obtained in one year. However, such a long term could bring many commercial damages. The impossibility for tax authorities to grant this status within a very short period of time to all eligible taxpayers could also lead to commercial damages. Thus, according to ECOFIN of October 2, 2018, there were removed from the draft directive of the first sub - phase, the notion of taxable person and the legal bases of the final VAT regime, leaving only the three "quick solutions" of the proposal for a directive and "quick solutions" in the proposal to amend Regulation (EU) 282/2011.

The status of a certified taxable person will only be used during the transitional period 2022-2027 and will be eliminated when the final VAT treatment of goods and services is made at the place of destination. Also in Commission Communication COM (2017) 566 final it is stated that besides this first stage towards a definitive VAT system, the Commission wants to modernize VAT rates as well as a package of measures in favour of SMEs, all of which will apply starting with July 1, 2022.

As this article addresses the four “quick solutions” to a definitive VAT system at EU level, our analysis/study will only focus on the provisions defining these solutions as compared to those existing in national legislation. The three fast-track solutions that were the subject of a proposal for directives in the first phase of the definitive VAT regime are now subject to the provisions of a directive already endorsed by the EU Council, namely Council Directive (EU) 2018/1910 of 4 December 2018 amending the 2006 Directive/112/EC *as regards the harmonization and simplification of certain rules in the value added tax system for the taxation of trade between Member States* (hereinafter referred to as “Directive (EU) 2018/1910”). The 4th quick solution, which was the subject of a proposal to amend Regulation (EU) 282/2011, is now subject to the provisions of a Regulation amending the Regulation (EU) 282/2011 and Council Implementing Regulation (EU) 2018/1912 of 4 December 2018 amending Council Implementing Regulation (EU) No 282/2011 as regards certain exemptions for intra-Community transactions (hereinafter Regulation (EU) 2018/1912). According to Vizoli (2019), the 3 “quick solutions” set up by Directive (EU) 2018/1910 concern the call-off stock taxation regime, the chain transaction tax regime, the recognition of the VAT registration code as a condition in order to exempt intra-Community supplies.

As regards the call-off stock tax regime, Directive (EU) 2018/1910 seeks to simplify and harmonize the rules for this structure, commonly referred to as inventory, at the customer’s disposal. At present, in Romania, the tax regime for call-off stocks is regulated by the Fiscal Code, by the methodological norms given in its application, and by another normative act with lower legal power regulating the simplification measures for call-off stocks from another Member State. Hampu (2014) shows that if the tax treatment of VAT at the national level is relatively simple, if the goods are transported between two Member States, the VAT treatment requires a detailed analysis and may also require confirmation of the VAT treatment with the Member State where the goods were transported. The definition of the stock structure at the disposal of the customer is found in the methodological norms given in the application of the Fiscal Code as the one in which the supplier transfers goods to its own warehouse or a customer’s, in a regular manner, without transferring ownership of the goods, this occurs on the date when, according to the contract, the customer removes the goods from the warehouses for being used in economic activities (for example, in production).

It is true that when the goods are transferred between two Member States, in the absence of any simplification measure, the supplier makes a transfer on the one hand to the Member State from which the goods leave and, on the other, an assimilated intra-Community acquisition to the Member State in which they are arrive, and a local delivery is made when the goods are removed from the warehouse. In this case, the supplier, as he makes an assimilated intra-Community acquisition to the Member State where the goods arrive, would be required to register in the Member State where the goods arrive. Due to the fact that this procedure involves registering the supplier for VAT purposes, Romania provided in its national legislation for certain instructions on the application of simplification measures. By virtue of these simplification measures, the supplier would no longer carry out a transfer, followed by an intra-Community acquisition but an intra-Community supply. The application of these simplification measures is subject to the following requirements: the purchaser must be registered for VAT purposes, the Member State must apply simplification measures similar to those in Romania (hence justifying the confirmation of the applicable treatment, as mentioned above, in the other Member State), the buyer must be known by the supplier when the goods are transported from another Member State to Romania.

Without claiming the exhaustion of this subject, which is otherwise extremely vast, what is important for this study, as we shall see below, is the countries that are implementing the simplification measures. Their list is public on the website of the Ministry of Finance, entitled *Member States applying simplification measures for call-off stocks*. Of the 27 countries (Croatia not included, even if it is a Member State since 2013, which once again represents an argument that the treatment needs to be confirmed, as the information in the national system do not appear as updated), 17 apply the simplification regime, namely: Austria , Belgium, Cyprus, Czech Republic, Finland, France, Hungary, Ireland, Italy, Latvia, Lithuania, the Netherlands, Poland, Romania, Slovakia, Slovenia and the United Kingdom and 10 do not apply simplification measures namely Bulgaria, Denmark, Estonia, Germany, Greece, Luxembourg, Malta, Portugal, Spain and Sweden. Another differentiation at Member State level regarding the call-off stocks regime available to the customer was also identified by the European Commission in 2014, according to Hampu (2014). The Commission identified four models of VAT implications for call-off stocks/ goods delivered, on the basis of a consignment contract.

Given that there is a difference in the applicability of the simplification measures with regard to VAT implications, even with regard to the definition of this structure, there are Member States with no distinction between call-off stocks and goods delivered under a consignment contract, we consider that this first “quick solutions” accurately addresses these situations by transposing the simplification measures implemented by some Member States into Directive (EU) 2018/1910. This Directive also additionally provides for a period of 12 months within which the goods must be delivered to the customer or returned to the Member State from which they were sent. Where the supplier does not fulfil the conditions imposed by the Directive or transfers the goods to a Member State other than the one where they were sent or to a customer other than the one entered in the register, or the goods were destroyed/stolen/lost, the supplier has the obligation to register in the Member State where the goods arrived.

With regard to the tax regime for chain transactions, Directive (EU) 2018/1910 introduces the second “quick solutions” whereby goods are delivered successively and transported from one Member State to another Member State directly from the first supplier to the last customer in the chain, the shipment is assigned to the first supply in the chain, that is, the one performed to the intermediary operator. The legal framework also provides a definition of the intermediary operator as an operator other than the initial provider. From this rule, the Directive also provides for an exception, i.e. where the intermediary is registered for VAT purposes in the Member State from where the goods were sent, and the latter communicates the VAT number to the initial supplier, the transport is allocated to the delivery made by the intermediary.

As regards the recognition of the buyer’s tax identification code as part of an intra-Community supply, as a **substantial requirement,** in our opinion this third “quick solutions” introduced by the Directive responds to a dramatic reality where VAT exemption is often the source of fraud carousel. At present, intra-Community supplies are not conditional on the purchaser presenting his identification number in the other Member State; this condition, according to numerous judgments (for example, C-

587/10 - *Vogtländische Straßen, Tief- und Rohrleitungsbau GmbH Rodewisch* VSTR) *vs. the Finanzamt Plauen*, C-21/16 - *Euro Tire BV - Sucursal em Portugal vs. Autoridade Tributária e Aduaneira*) given by the Court of Justice of the European Union, is merely a formality and failure to comply with it cannot be sanctioned with the exemption refusal but with more "soft" sanctions, such as fines or other administrative penalties. Thus, at the request of Member States struggling and trying to end this carousel fraud, the EU Directive introduces this requirement whereby the buyer, for the purposes of the exemption, must have a valid VAT code from another Member State than the one where the goods were loaded.

The fourth quick solution, introduced by Regulation (EU) 2018/1912 amending Regulation (EU) No 282/2011, refers, on the one hand, to the transport documents that the supplier/purchaser must hold in order to be considered that the goods were delivered intra-Community and, on the other hand, the items that the supplier's/purchaser's registers used in the call-off stock structure. Since the items that such registers have to contain are still in the inventory of incoming goods/registries of the non-transfers governed by national law, we will further present what documents the buyer/supplier must possess in order to consider that the goods were delivered intra-Community. Thus, if the transport is carried out by the supplier, it must contain either two conclusive elements of the specific type of transport documents, namely CMR, bill of lading, invoice from the carrier, which would be issued by separate entities, independent of each other, by the seller or of the buyer, or only one of the elements already stated, accompanied by a conclusive proof of other documents, such as the insurance policy for the transported goods, bank documents attesting payment of the transport, official documents issued by a public authority (e.g. a notary) confirming that the goods arrived in the destination Member State, etc.

If the goods are shipped by the customer, they must have at least two conclusive elements than those already provided for by the supplier (CMR, bill of lading, invoice from carrier, aibill) as well as a statement by the purchaser that the goods have been shipped and an indication of the Member State of destination by the 10th of the month following that in which the intra-Community supply was made.

All these measures, taken by the EU Council together with the European Commission, are designed to improve the current VAT system on the one hand, as set out in the Preamble to Directive (EU) 2018/1910, to eliminate different approaches at Member State level which could lead to double taxation or even non-taxation and "to increase legal certainty for operators" and, on the other hand, as set out in the Preamble to Regulation (EU) 2018/1912, to reduce fraud/as much as possible cut cross-border fraud in the VAT.

The second part of the literature review, as anticipated in the preamble of this chapter, focuses on the *VAT gap, the way of calculation, its causes.*

According to Barbălată (2017), the VAT gap is the difference between the total VAT payable and VAT actually collected. The author points out that the VAT gap can not only be a consequence of tax fraud but also a consequence of the measures taken by each country as each country can set a number of reduced rates, a value of these reduced rates, as well and the nature of the exempted operations.

With regard to this difference in the VAT gap, Sarnowski and Selera (2019) show that this is the result of grey economy interaction and VAT fraud in intra-Community transactions. This study also shows that among the victims of the VAT gap there is the state budget, which loses billions of euros, and honest businessmen who are in a struggle to keep up with their competitors who do not comply with the VAT legislation.

Another definition of the VAT GAP is given by Zídková and Pavel (2016), which shows that VAT GAP is a difference between the theoretical VAT debt and the one actually paid to the state budget, and most of the time this difference is expressed as percentage as:

$$\frac{\text{The due and unpaid VAT}}{\text{VAT theoretical obligation}}$$

subject to full compliance, on principle declared, is paid

The authors point out that among the factors determinant for a high level of VAT GAP are problems of tax evasion and inefficiency of the tax system. Moreover, they also built different regression models to determine the variables impacting the VAT GAP, reaching that from 21 tested variables, only 4 to have a significant impact. Thus, the authors have identified that the VAT gap increases as: the share of VAT revenues in total GDP increases (an explanation of this phenomenon could be given by the following reasoning: the higher the total VAT burden, with both in a larger or smaller proportion, the higher the VAT gap increases), the standard VAT rate and the difference between standard and reduced VAT increase, the share of household consumption in total GDP increases.

In another study, Zídková (2014) explains the VAT gap as the difference between the VAT theoretical debt in national accounts and the revenue collected by the financial authorities in national accounts. The author shows that even if there are a number of factors that could influence the VAT gap in addition to tax evasion, the VAT gap may serve as an indicator of evasion/fraud in this area. Moreover, in this study the author makes a regression including some variables that would have the potential to influence the VAT gap in 24 states during two years, 2002 and 2006.

Thus, it was found that two factors present a statistically significant impact on the VAT gap, respectively, the final consumption of households and of the non-profit organizations has a significant impact on the VAT gap, and the increase in the share of VAT revenues in GDP leads to a decrease in the VAT gap. Among other factors that may explain the size of the gap, the author shows that the underground economy and the standard VAT rate have a positive negative impact, and the GDP per capita, the share of intra-Community trade, the number of allowances VAT and final consumption of restaurant and hotel services have a negative impact.

Poniatowski, Bonch-Osmolovskiy and Belkindas (2016) used in their report in order to quantify the VAT gap, a relatively simple indicator of VAT non-compliance, but including VAT losses due to insolvency, bankruptcy, errors as well as legal tax optimizations. The authors also offer a succinct definition of the VAT gap as the difference between the amount actually received from VAT and the total VAT tax burden.

3. Research methodology and data used

As we have seen in chapter 2 of this article, all the actions of the European Commission and the European Council are aimed at a VAT regime capable of ensuring legal certainty, removing different approaches between Member States and minimizing fraud in this area. A mathematical quantification of the effects of the four "quick solutions" would be impossible now, nor did we find any study by the European Commission/Council of the EU illustrating/forecasting a financial impact on the total VAT revenue to be cashed, following the implementation of these quick solutions. Their impact in the past is difficult to achieve because VAT revenue statistics are not detailed by the nature of the transactions that constitute the source of these revenues, so we cannot identify the VAT revenue from the call-off stocks structure or of the operations in chain, as we cannot even identify the losses suffered by economic operators as a result of the refusal to exempt intra-Community supplies from tax administrations on the grounds that the formalities, in this case the VAT identification number, have not been met.

Therefore, we have chosen to carry out a cluster analysis at Member State level that is capable of capturing and creating a certain typology of Member States described by the following variables: VAT GAP, Total VAT Income in GDP and corruption perceptions index at the level of 2016, and then, in comparison with the list of countries implementing simplification measures, we will see to what extent a certain category of states on the resulting dendrogram apply a simplification regime or not and how the countries that apply/do not apply a simplification regime are at the same time characterized/not characterized by a high/low level of VAT GAP, VAT rate in GDP and the corruption perceptions index.

Table 1 of *Appendix 1* summarizes all the above mentioned data. Regarding the credibility of the data and the relevance of its sources, we highlight the following:

- The information on the application of the simplification measures was taken from the website of the Ministry of Finance from Romania;
- The information on the *Share of total VAT revenue earned in total GDP and the Corruption Perceptions Index* was taken from the official website of the European Commission www.eurostat.eu. With regard to the significance of the Corruption Perceptions Index, the European Commission shows on its website that it is a composite indicator that is formed by combining surveys and evaluations from 13 different sources and scores. The indicator classifies countries according to how corrupt the public sector is. Scoring is between zero and 100, a score of zero indicating a very high level of corruption, and a score of 100 indicates a very "clean" country.
- The VAT gap is taken from the Study and Reports on the VAT Gap in the EU-28 Member States: 2018 Final Report, a report by an expert team at the CASE (Centre for Social and Economic Research, Warsaw) and IEB (Barcelona University - Barcelona Institute of Economics) and published on the official website of the European Union www.europa.eu. The VAT gap was calculated as the difference between the total VAT tax liability, that theoretical obligation and the amount actually collected.

Therefore, the credibility of the data by reference to its source cannot be questioned.

In conclusion, the three types of data sets, which define for the 28 Member States the share of VAT revenues in GDP, the VAT gap as a share of the total VAT liability and the Corruption Perceptions Index are three variables that define the Member States in this analysis and according to which we will perform the cluster analysis.

About *cluster analysis*, Babucea (2007) shows that it is a “segmentation or taxonomy analysis” that was first used in 1939 and which allows the grouping of items in homogeneous groups using different classification algorithms. The author shows that this analysis is a multivariate analysis whereby the variables/cases are grouped into clusters so that the similarities between the members of the same cluster are as large as possible, and the similarities between the members of different clusters are as small as possible. In carrying out the analysis, the author proposes the following steps: identifying the variables, calculating the distances between the elements and constructing the matrix of similarities, selecting the cluster algorithm to perform the grouping and interpretation of the dendogram thus obtained.

With regard to the algorithms used in the cluster analysis, Cumatrenco (2007) shows that they are divided into two main categories: partition algorithms and hierarchical algorithms. Partition algorithms are used when in the cluster analysis it is previously known the number of classes in which division should be performed; the hierarchical type algorithms are used when the number of groups/classes in which the division cannot be known a priori. The author also shows that hierarchical algorithms can be catalogued in ascending and descendant algorithms, and in the case of ascendant algorithms, the following methods can be used for calculating the distance between classes:

- *the method of closest neighbours* - is the method according to which the distance between 2 groups/clusters is the smallest distance between two elements belonging to these two cluster groups, and the representative mathematical formula would be d $(\alpha_1, \alpha_2) = \min_{x \in \alpha_1, y \in \alpha_2} d(x, y)$.
  The disadvantage of this method is that a chain of close objects, taken two by two, will eventually lead to the assignment of a single group.
- *the method of the most distant neighbours* - is the method according to which the distance between the two groups/clusters is the largest distance between the two elements belonging to these two cluster groups and the representative mathematical formula would be:
  d$(\alpha_1, \alpha_2) = \max_{x \in \alpha_1, y \in \alpha_2} d(x, y$
  The result of this method is often the one that the human factor might intuit, the elements being grouped into two extreme groups.

- *the mean distance between pairs* - is the method according to which the distance between two groups/clusters is the mean distance between the pairs of elements that form the groups and the representative mathematical formula is:
  d $(\alpha_1, \alpha_2) = \frac{1}{m_1 m_2} \sum_{x \in \alpha_1} \sum_{y \in \alpha_2} d(x, y)$.
- *centroid method* - is the method according to which the distance between the two groups/clusters is the distance between the centres of the groups and the mathematical formula is:
  d (α_1, α_2) = d$(C_{\alpha_1}, C_{\alpha_2})$

where C_{α_1},C_{α_2}) are the centers of two groups, each centre is formed from the arithmetic mean of the elements that make up the group, each newly entered element can lead to the movement of the centre, and the group consisting of an element will have that element as the centre.

- *Ward's method* - is the method that minimizes the sum of squares of errors, the representative mathematical formula is:
  SP(α) = $\sum_{x\in\alpha} |x - \overline{x}_\alpha|^2$, and d (α_1, α_2) = SP$(\alpha_1 + \alpha_2)$ – (SP(α_1) +SP(α_2)).

Thus, as a result of presenting algorithms and grouping methods, in our analysis we will use hierarchical algorithms, because we do not know a priori the number of classes to be formed. Moreover, starting from the pre-set hypothesis of this article attempting to establish a "link" between states applying a simplification regime and the variables we select in defining these states, the method we will use for the calculation of distances is the method to the distant neighbours, given that they can be classified into two groups because of the simplistic tax regime: they either apply the simplification measures or do not apply the simplification measures in the structure call-off.

Babucea and Dănăcică (2009) showed that because the number of classes is not a priori known, an important step must be the evaluation of the quality of the partition obtained, which can be made either by analysing the dendogram or by calculating certain quality indicators (division/agglomeration coefficients). In this study, in order to verify the obtained partition, we will use the dendogram.

For data analysis we will use the SPSS Statistics 19 software version.

4. Results

The results obtained with the SPSS Statistics 19 software version were presented in *Appendix 1*, in *Table 2* and *Graphs 1* and *2*. Thus, in order to perform the hierarchical cluster analysis, we used the *Hierarchical Cluster* function, as a grouping algorithm we chose the *method of the most distant neighbour*, and for the distance calculation we used the square of the Euclidean distance, the SPSS function called *Squared Euclidian distance.* We used the *Agglomeration schedule* function to display the combinations in each iteration. We also calculated the matrix of similarities between elements, but this was not represented in the appendix due to the extremely large size of the matrix (given that for the 28 member states the matrix generated had 28 lines and 28 columns). We used the *Cluster membership* function to indicate the group membership in different iterations. We also opted for the graphical representation in the form of the dendogram (agglomeration diagram). According to Graph 2, the distances between the connecting elements are represented on a scale between 0-25.

Thus we notice that on a scale between zero and one we have five clusters, on a scale between zero and five we have two clusters, and on a scale from zero to 25 we have one cluster. Thus, on the zero-to-five scale, the following clusters can be found: 11 - France, 28 - Great Britain, 18 - Lithuania, 20 - Malta, 9 - Estonia, 27 - Sweden, 7 - Czech Republic, 8 - Estonia, 10 - Finland, 1 - Austria, 2 - Belgium, 14 - Hungary. In the second cluster, on the zero-to-five scale, the following countries are included: 22 - Poland, 25 - Slovakia, 21 - the Netherlands, 6 - Cyprus, 19 - Luxembourg, 5 - Croatia, Italy, 3 - Belgium, 12 - Greece, 15 - Italy, 23 - Portugal, 13 - Hungary, 24 - Romania, 4 - Bulgaria.

According to *Table 3* in *Appendix 1,* we note that within the first cluster seven countries apply simplification measures and five countries do not apply simplification measures, and within the second cluster 10 countries apply simplification measures and five countries do not apply simplification measures. Even if both clusters contain both countries that apply the simplification regime and countries that do not apply simplification measures, in our opinion, it is important the share of countries applying simplification measures in the total of countries in each cluster, namely seven out of 12 and 10 out of 15 (Croatia being excluded, because we did not identify data available on the Ministry of Finance website). However, given that each cluster contains countries that also apply simplification measures and countries that do not apply simplification measures, we can see that we cannot establish a causal relation between a particular cluster of countries and the simplification regime applied or not. In our opinion, the transposed simplified measures, in particular, have the role of unifying VAT legislation, able to eliminate the different approaches and consequently reduce the VAT gap, increase the VAT share in GDP and perhaps, through other pricing measures taken by individual Member States, to improve the corruption perceptions index (indicating countries as little corrupt as possible).

5. Conclusions

In conclusion, we cannot say that we did not identify a typology/taxonomy of the countries implementing simplification measures and a typology of those that do not apply the simplification measures through the three variables we have selected to describe them: the share of VAT revenues in GDP, the VAT gap in total VAT revenues and the corruption perceptions index. However, we find appropriate the 4 "quick solutions" implemented by the EU Council and the European Commission, in order to avoid the different approaches, approaches that would not lead to VAT fraud immediately, but could increase the VAT gap due to ignorance of tax implications in all Member States by taxable persons directly affected by these provisions.

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Appendix 1

Table 1. **Information by Member State**

Member State	Does it apply the simplification measures?	Share of total revenues from VAT in total GDP	VAT gap [% of total VAT revenue]	Corruption perception index
1.Austria	Yes	7.7	0.07	75.0
2.Belgium	Yes	6.8	0.10	77.0
3.Bulgaria	No	9.2	0.14	41.0
4.Croatia	No data available	12.9	0.01	49.0
5.Cyprus	Yes	9.0	0.05	55.0
6.Czech Republic	Yes	7.4	0.14	55.0
7.Denmark	No	9.5	0.09	90.0
8.Estonia	No	9.1	0.07	70.0
9.Finland	Yes	9.1	0.08	89.0
10. France	Yes	6.9	0.12	69.0
11. Germany	No	6.9	0.09	81.0
12. Greece	No	8.1	0.29	44.0
13. Hungary	Yes	9.3	0.13	48.0
14. Ireland	Yes	4.7	0.11	73.0
15. Italy	Yes	6.1	0.26	47.0
16. Latvia	Yes	8.1	0.11	57.0
17. Lithuania	Yes	7.8	0.25	59.0
18. Luxembourg	No	6.5	0.01	81.0
19. Malta	No	7.0	0.03	55.0
20. Netherlands	Yes	6.8	0.04	83.0
21. Poland	Yes	7.2	0.21	62.0
22. Portugal	No	8.5	0.10	62.0
23. Romania	Yes	6.4	0.36	48.0
24. Slovakia	Yes	6.7	0.26	51.0
25. Slovenia	Yes	8.2	0.08	61.0
26. Spain	No	6.5	0.03	58.0
27. Sweden	No	9.2	0.01	88.0
28. Great Britain	Yes	6.8	0.12	81.0

(*Source*: Compiled by the authors)

Table 2. **Case processing summary**

Case processing summary [a]					
Cases					
Valid		Missing		Total	
N	Percent	N	Percent	N	Percent
28	100.0	0	.0	28	100.0
a. Complete linkage					

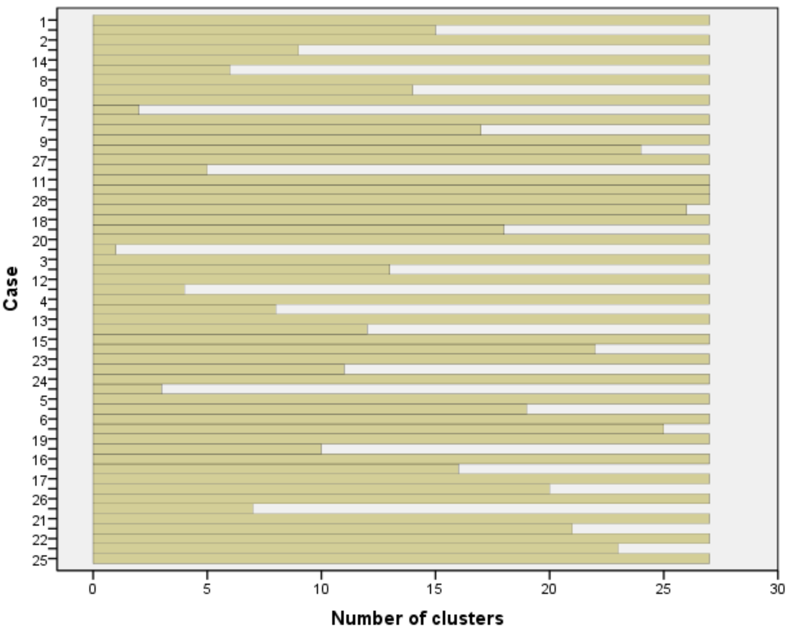
(*Source*: Compiled by the authors)

Table 3. **Agglomeration schedule**

Agglomeration schedule						
Stage	Cluster Combined		Coefficients	Stage cluster appears		Next stage
	Cluster 1	Cluster 2		Cluster 1	Cluster 2	
1	11	28	.011	0	0	2
2	11	18	.166	1	0	10
3	6	19	.172	0	0	9
4	9	27	1.015	0	0	11
5	22	25	1.090	0	0	7
6	15	23	1.100	0	0	16
7	21	22	2.017	0	5	21
8	17	26	2.738	0	0	12
9	5	6	4.000	0	3	18
10	11	20	4.091	2	0	23
11	7	9	4.096	0	4	23
12	16	17	4.110	0	8	18
13	1	2	4.811	0	0	19
14	8	10	5.842	0	0	22
15	3	12	10.233	0	0	24
16	13	15	11.257	0	6	17
17	13	24	16.360	16	0	20
18	5	16	17.480	9	12	21
19	1	14	20.410	13	0	22
20	4	13	50.303	0	17	24
21	5	21	52.266	18	7	25
22	1	8	64.010	19	14	26
23	7	11	90.006	11	10	26
24	3	4	106.264	15	20	25
25	3	5	445.005	24	21	27
26	1	7	447.761	22	23	27
27	1	3	2401.093	26	25	0

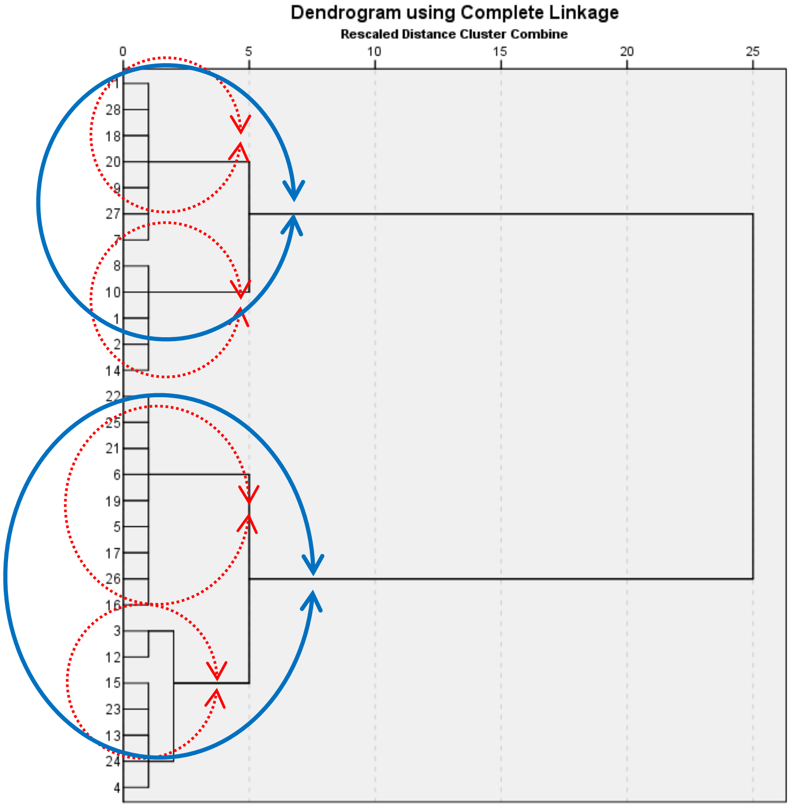
(*Source*: Compiled by the authors)

Graph 1. **Clusters**



(*Source*: Compiled by the authors)

Graph 2. **Dendogram**



(*Source*: Compiled by the authors)

Table 3. **Relevant information by Member State - clusters**

Member State	No.	Does it apply the simplification measures?	Share of total revenues from VAT in total GDP	VAT gap expressed as % of total VAT revenue	Corruption perception index
Cluster 1:					
Austria	1	Yes	7.7	0.07	75.0
Belgium	2	Yes	6.8	0.10	77.0
Denmark	7	No	9.5	0.09	90.0
Estonia	8	No	9.1	0.07	70.0
Finland	9	Yes	9.1	0.08	89.0
France	10	Yes	6.9	0.12	69.0
Germany	11	No	6.9	0.09	81.0
Ireland	14	Yes	4.7	0.11	73.0
Luxembourg	18	No	6.5	0.01	81.0
Netherlands	20	Yes	6.8	0.04	83.0
Sweden	27	No	9.2	0.01	88.0
Great Britain	28	Yes	6.8	0.12	81.0
Total: Cluster 1 comprises 7 countries that apply simplification measures and 5 do not apply simplification measures					
Cluster 2					
Bulgaria	3	No	9.2	0.14	41.0
Croatia	4	No data	12.9	0.01	49.0
Cyprus	5	Yes	9.0	0.05	55.0
Czech Republic	6	Yes	7.4	0.14	55.0
Greece	12	No	8.1	0.29	44.0

Member State	No.	Does it apply the simplification measures?	Share of total revenues from VAT in total GDP	VAT gap expressed as % of total VAT revenue	Corruption perception index
Hungary	13	Yes	9.3	0.13	48.0
Italy	15	Yes	6.1	0.26	47.0
Latvia	16	Yes	8.1	0.11	57.0
Lithuania	17	Yes	7.8	0.25	59.0
Malta	19	No	7.0	0.03	55.0
Poland	21	Yes	7.2	0.21	62.0
Portugal	22	No	8.5	0.10	62.0
Romania	23	Yes	6.4	0.36	48.0
Slovakia	24	Yes	6.7	0.26	51.0
Slovenia	25	Yes	8.2	0.08	61.0
Spain	26	No	6.5	0.03	58.0
Total: Cluster 2 comprises 10 countries implementing simplification measures and 5 countries that do not apply simplification measures.					

(*Source*: Compiled by the authors)

PS12 IFRS

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IFRS compliance in Romania: An institutional analysis on pharmaceutical companies

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Voluntary financial disclosure in compliance with the International Financial Reporting Standards in Romania

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Abstract: *In Romania, starting with the fiscal year 2012, companies whose securities are admitted to trading on a regulated market are required to apply IFRS in preparing individual annual financial statements, in accordance with the Order of the Minister of Public Finance no. 1286/2012 regarding the approval of the Accounting Regulations in accordance with the International Financial Reporting Standards applicable to companies whose securities are admitted to trading on a regulated market. This research aims to present the status quo of the financial reporting under IFRS as at December 2012, as follows: companies covered by this regulation are identified; these companies are then analysed by several criteria; the transparency of financial reporting is postulated, and this hypothesis is tested by identifying the IFRS financial statements as at 31 December 2012 that were made public by the companies in the sample; authors hypothesize the difficulty to restate the financial statements in accordance with the Romanian regulations, hypothesis tested by identifying where IFRS reports were published with delay. The results are interpreted in relation to previous authors' research on the ability of IFRS implementation in Romania, carried out at another key moment: the issuance of the Order of the Minister of Public Finance 1121/2006 on the application of International Financial Reporting Standards which established mandatory application of IFRS for companies whose securities at the balance sheet date are admitted to trading on a regulated market and which prepare consolidated financial statements.*

Keywords*:* *IFRS, listed companies, Romania, implementation capacity.*

1. Introduction

Transparency on the capital market is currently a topical issue both nationally and internationally. On this background, the IFRS implementation is considered by regulatory bodies an instrument to increase transparency for current and future investors. Following this international trend, the Romanian legislation recently changed by expanding the IFRS implementation scope to individual financial statements issued by companies with securities accepted for trade on a regulated market. Starting with the fiscal year 2012, companies whose securities are admitted to trading on a regulated market are required to apply IFRS in preparing individual annual financial statements, in accordance with the Order of the Minister of Public Finance no. 1286/2012 regarding the approval of the Accounting Regulations in accordance with the International Financial Reporting Standards applicable to companies whose securities are admitted to trading on a regulated market. This research aims to present the status quo of the financial reporting under IFRS as at December 2012 in Romania, namely to identify the companies falling under the scope of this regulation are identified; to analyse this

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population by several criteria; to test the transparency of financial reporting identifying whether the IFRS financial statements as at 31 December 2012 were made public by the companies in the sample in time and what kind of audit opinion did they receive. The paper is structured as follows: first, the research design is briefly presented; then the relevant regulatory framework is described; the fourth section details the results of the data analysis, while the final paragraphs include the comments and conclusions of the researchers.

2. Research design

The research methods used are empirical. Companies which fall within the scope of the new regulations were identified based on the data from the National Commission of Securities. A total of 67 was found, out of which two were eliminated from the analysis (one had the financial year end the 30th of September and one did not have financial information from the individual financial statements available). For each of the companies in the population, the following general and financial data was hand-collected from the website of the Bucharest Stock Exchange: listing tier, district, the corresponding code within the National Classification of Economic Activities, equity in 2012 and 2011, net turnover in 2011 and 2012, average number of employees in 2012 and 2011. All data collected are public. The primary data was grouped by tier, geographical area, activity, type of company (small, medium, large), equity, and net turnover. For a sample of 14 companies, the audit reports have been downloaded from the official websites of the entities. The audit report date was used as proxy for the date when financial statements were published. Moreover, the type of audit opinion issued was analysed. The sample was chosen so that it includes at least one company from each category, depending on each of the criteria mentioned above.

3. Regulatory framework

Recently, in June 2012, the Romanian Minister of Public Finance issued the Order 881/2012, which stipulates that starting with the financial year 2012, the companies the securities of which are accepted to be traded on a regulated market shall apply the International Financial Reporting Standards (IFRS) when preparing individual annual financial statements.

Additionally, in October 2012, the Minister of Public Finance published the Order 1286/2012 for the approval of the accounting regulations in compliance with IFRS applicable to these trade companies.

According to Order 881/2012, IFRS represent the standards adopted according to the procedure stipulated in article 6, paragraph (2) of the EC Regulation no. 1606/2002 of the European Parliament and of the Council of 19 July 2002 on the application of international accounting standards. Consequently, the IFRS issued by IASB are to be applied as far as they had been adopted within the European Union, by regulations.

Companies affected by Order 881/2012 must ensure the continuity of their IFRS application even in case their securities at balance sheet date are not accepted to be traded on a regulated market anymore.

Trade companies falling within the scope of Order 881/2012 should restate, in compliance with IFRS, the data and information contained in the trial balance prepared for the year ended 31 December 2012 on the basis of the accounting regulations approved under Order 3055/2009 of the Minister of Public Finance. The resulting IFRS statements must be prepared in the national language (Romanian) and expressed in the national currency (RON).

4. Companies falling within the scope of the new regulations

One of the objectives of the present paper is to identify the companies which fall within the scope of the new regulations. For this purpose, the first step was to thoroughly analyse the relevant legislation.

It was found that the legislation clearly states that the provisions of the Order 1286/2012 for the approval of the accounting regulations in compliance with IFRS do not apply to the following entities:

- Credit institutions;
- Non-banking financial institutions registered in the general register and payment institutions and institutions that issue electronic money, as defined by law, which grant credit related to payment services and whose activity is limited to the provision of payment services, respectively issuance of electronic money and payment;
- Bank deposit guarantee fond;
- Entities that are authorized, regulated and overseen by the insurance supervisory commission (*Comisia de Supraveghere a Asigurărilor – CSA*);
- Entities that are authorized, regulated and overseen by the supervisory commission for the private pension system (*Comisia de Supraveghere a Sistemului de Pensii Private – CSSPP*);
- Entities that are authorized, regulated and overseen by the national commission of securities (*Comisia Naţională a Valorilor Mobiliare – CNVM*);

Order 881/2012 stipulates that companies' securities must be accepted to be traded on a regulated market. This regulated market is defined by Law no. 297/2004 regarding the capital market, with the subsequent amendments. Following the analysis of this law, authors concluded that the Bucharest Stock Exchange is the only Romanian capital market that fulfils the requirements of Order 881/2012.

5. Data analysis

There are **67** companies falling within the scope of Order 881/2012. They form the total statistical population of the present research. Collecting financial data for each of these companies as at 31 December 2012 resulted into the fact that one company reports as at 30th of September. In case of another company, the financial statements disclosed on the website of the Bucharest Stock Exchange are the consolidated financial statements for the year end December 2012. These are not relevant for the present research, which focuses on **individual** financial statements prepared **as of 31.12.2012**. Therefore, these two companies have been eliminated from the population. For all other **65** companies, financial information as of 31 December 2012 in the same format has been disclosed.

In order to obtain a general view on these companies, the primary data has been systematized. The data volume has been compressed by means of statistical grouping. Following this grouping, the companies within the population have been separated into homogenous groups, depending on the variation of one characteristic or of several characteristics. From the perspective of the number of characteristics chosen, the researchers performed both a **simple** and a **combined** grouping. From the perspective of the content of the characteristics, the grouping was also performed depending on a **territorial characteristic**, on different **attributive characteristics** and on different **numerical characteristics**. The detailed results of the grouping are described in the following paragraphs.

First of all, according to the statistical organization of the Romanian territory, there are eight development regions with an average population of 2.8 million people and 42 districts. The regions and the corresponding districts are:

- Region „I North–East": districts Bacău, Botoșani, Iași, Neamț, Suceava, and Vaslui;
- Region „II South-East": districts Brăila, Buzău, Constanța, Galați, Vrancea, and Tulcea;
- Region „III South": Argeș, Călărași, Dâmbovița, Giurgiu, Ialomița, Prahova, and Teleorman;
- Region „IV South West": districts Dolj, Gorj, Mehedinți, Olt, and Vâlcea;
- Region „V West": districts Arad, Caraș-Severin, Hunedoara, and Timiș;
- Region „VI North-West": districts Bihor, Bistrița-Năsăud, Cluj, Maramureș, Satu-Mare, and Sălaj;
- Region „VII Center": districts Alba, Brașov, Covasna, Harghita, Mureș, and Sibiu;
- Region „VIII Bucharest-Ilfov": districts Bucharest and Ilfov.

The structure of the analysed companies according to these regions is displayed in Table 1.

Table 1. **Population structure depending on the territorial characteristic**

Region	**Number**	**Percentage**
I North–East	7	11%
II South-East	9	14%
III South	8	12%
IV South West	7	11%
V West	2	3%
VI North-West	10	15%
VII Center	8	12%
VIII Bucharest-Ilfov	14	22%
Total	**65**	**100%**

(*Source*: Own design)

The General Requirements for the listing at the Bucharest Stock Exchange for all types of financial instruments are as follows: firstly, the instruments must be registered with the National Securities Commission (CNVM); secondly, they need to be transferable, dematerialized and fully paid.

In case of shares issued by domestic entities, the following requirements must be met, depending on the tier, as presented in Table 2.

Table 2. **Requirements for listing domestic shares at the Bucharest Stock Exchange**

	Tier I	Tier II	Tier III
Free float	> 25%	> 25%	> 25%
Free float held by at least	2000 owners	-	-
Shareholders equity for the last financial year or anticipated capitalization	> 30 mil EUR	> 2 mil EUR	> 1 mil EUR
Net profit	for the last 2 years	-	-
A bussiness plan	at least for the next 3 years	-	-
An executive summary to the admission prospectus	Yes	-	-

(*Source*: http://www.bvb.ro/Companies/Listing.aspx?t=2&m=bse)

The structure of the analysed companies according to these tiers is displayed in table 3.

Table 3. **Population structure depending on the attributive characteristic "listing tier at the Bucharest Stock Exchange"**

Tier	Number	Percentage
I	15	23%
II	49	75%
III	1	2%
Total	**65**	**100%**

(*Source*: Own design)

Another grouping criterion for the analysed companies was their type of activity. For this purpose, authors collected for each of the companies the corresponding code within the National Classification of Economic Activities (CAEN - *Clasificarea activităţilor din economia naţională*). The CAEN code has four figures, whereas based on the first figure, authors identified the so-called **section** within the Classification and based on the first two figures, authors identified the so-called **division**. Generally, the sections are the following:

- Section A: Agriculture, Forestry and Fishing
- Section B: Mining and Quarrying
- Section C: Manufacturing
- Section D: Production and Supply of Electricity and Heat, Gas, Hot Water and Air conditioning
- Section E: Water Supply, Sewerage, Waste Management and Remediation Activities
- Section F: Construction
- Section G: Wholesale and Retail Trade; Repair of Motor Vehicles and Motorcycles
- Section H: Transportation and Storage
- Section I: Accommodation and Food Service Activities

- Section J: Information and Communication
- Section K: Financial and Insurance Activities
- Section L: Real Estate Transactions
- Section M: Professional, Scientific and Technical Activities
- Section N: Administrative and Support Service Activities
- Section O: Public Administration and Defence; Social Security in the Public System
- Section P: Education
- Section Q: Human Health and Social Work Activities
- Section R: Shows, Cultural Events and Entertainment
- Section S: Other Service Activities

The companies falling within the scope of the Order 881/2012 belong to the following sections, as presented in Table 4.

Table 4. **Population structure depending on the attributive characteristic "code within the National Classification of Economic Activities"**

Section	**Number**	**Percentage**
B Mining and Quarrying	3	5%
C Manufacturing	44	68%
E Water Supply, Sewerage, Waste Management and Remediation Activities	2	3%
F Construction	5	8%
G Wholesale and Retail Trade; Repair of Motor Vehicles and Motorcycles	4	6%
H Transportation and Storage	7	11%
Total	65	100%

(*Source*: Own design)

In the European Union, companies are classified in the following four categories, depending on their number of employees: micro enterprises, small scale enterprises, medium enterprises and large enterprises. Micro enterprises are those that employ up to 9 people. Small enterprises employ between 10 and 49 people. Medium enterprises have between 50 and 249 people. Large enterprises are thus defined as having 250 or more employees.

According to this classification, the companies in foreground of the present research focuses are to be grouped as shown in Table 5.

Table 5. **Population structure depending on the attributive characteristic "enterprise type"**

Type of enterprise	**Number**	**Percentage**
Micro-enterprise	0	0%
Small enterprise	5	8%
Medium-sized enterprise	19	29%
Large enterprise	41	63%
Total	**65**	**100%**

(*Source*: Own design)

Besides the average number of employees based on which the above grouping was performed, financial data was also collected from the website of the Bucharest Stock Exchange, namely: shareholders' equity for the financial years 2011 and 2012, as well as net turnover for the same two periods. However, these figures correspond to the financial statements prepared not in accordance with IFRS, but in accordance with the Romanian Accounting Standards (Order of the Ministry of Public Finance 3055/2009).

For grouping purposes, only the figures for 2012 (as current year) were taken into account. The amounts were originally expressed in the national currency (RON) and were converted into EUR by using the exchange rate as at 31st of December 2012 (4.4287 RON/EUR). Prior to this grouping according to numerical characteristics, authors analysed the population by computing different indicators, both for equity and for net turnover, namely: the maximum, the minimum, the standard deviation, the mean, the median etc.

Table 6. **Population structure depending on the numerical characteristic "equity"**

Equity (in €)	Number	Percentage
1. Under 0	7	11%
2. 0-15,000,000	22	34%
3. 15,000,000-30,000,000	17	26%
4. 30,000,000-45,000,000	3	5%
5. 45,000,000-60,000,000	5	8%
6. 60,000,000-100,000,000	6	9%
7. Over 100,000,000	5	8%
Total	**65**	**100%**

(*Source*: Own design)

Following this analysis, in order to avoid potential void intervals, the following ranges have been chosen based on the characteristics of the population: in case of **equity**: negative equity; positive equity, but less than 15,000,000 €; between 15,000,000 € and 30,000,000 €; between 30,000,000 € and 45,000,000 €; between 45,000,000 €-60,000,000 €; between 60,000,000 € and 100,000,000 €; over 100,000,000; in case of **turnover**: under 10,000,000; between 10,000,000 € and 30,000,000 €; between 30,000,000 € and 50,000,000 €; between 50,000,000 € and 100,000,000 €; between 100,000,000 **€** and 250,000,000 **€**; between 250,000,000 € and 1,000,000,000 €; over 1,000,000,000 €. Tables 6 and 7 contain the stratification of the population according to these intervals.

Table 7. **Population structure depending on the numerical characteristic "net turnover"**

Net turnover (in €)	Number	Percentage
1. Under 10,000,000	25	38%
2. 10,000,000-30,000,000	15	23%
3. 30,000,000-50,000,000	9	14%
4. 50,000,000-100,000,000	6	9%
5. 100,000,000-250,000,000	5	8%
6. 250,000,000-1,000,000,000	3	5%
7. Over 1,000,000,000	2	3%
Total	**65**	**100%**

(*Source*: Own design)

The grouping presented so far may be referred to as **simple grouping**, which offers a concise and at the same time detailed view on the companies that must prepare individual financial statements in accordance with IFRS starting 2012. Additionally, researchers also performed a **combined** grouping, by combining the above mentioned characteristics.

By grouping the data first according to type of activity (section) and then by type of enterprise, the following results came up, as follows. Companies that activate in "B Mining and Quarrying" are solely large enterprises. All three types of enterprises (small, medium and large) are to be found in "C Manufacturing", "F Construction" and "G Wholesale and Retail Trade; Repair of Motor Vehicles and Motorcycles". There are no small enterprises in "B Mining and Quarrying" and "H Transportation and Storage". To section "E Water Supply, Sewerage, Waste Management and Remediation Activities" belong two extremes: one large company and one small one.

Similarly, the data was grouped first according to region and then by type of activity (section). This grouping revealed the following facts. The greatest variety of activities is to be found in the central region (all types of activity except for "E Water Supply, Sewerage, Waste Management and Remediation Activities") and in the region Bucharest-Ilfov (activities from sections B, C, E, F, G, except for "H Transportation and Storage"). The only region where there are solely companies from one area of activity is the South-Western region – with seven companies operating in the manufacturing industry.

Another combined grouping of the data was performed as follows: first depending on the type of enterprise (whereas the key characteristic was the number of employees) and then depending on the level of shareholders' equity. This analysis revealed that five large companies, one medium enterprise and one small one have negative equity. The equity of the smallest companies is positive and less than 15.000.000 euro. 68% of the medium companies have an equity of less than 15.000.000 euro, while in case of 21% of such enterprises, the equity ranges from 15.000.000 to 30.000.000 euro. In case of large enterprises, the equity is differentiated, belonging to all seven intervals: 12% of the companies - under 0; between 0 and 15,000,000 € – 15%; between 15,000,000 € and 30,000,000 € – 32%; between 30,000,000 € and 45,000,000 € – 7%; between 45,000,000 € and 60,000,000 € – 10%; between 60,000,000 € and 100,000,000 € – 12%; over 100,000,000 € – 12%.

Likewise, companies were then grouped after two criteria: type and net turnover. Consequently, it was shown that the majority of small enterprises have a net turnover of less than 10,000,000 euro, as do medium enterprises have. In the case of large enterprises, turnover ranges from the smallest to the highest turnover in the population. Almost one third have a turnover between 10,000,000 and 30,000,000 euro, while a fifth report between 30,000,000 and 50,000,000 euro. Just two big companies reported a net turnover of more than 1,000,000,000 euro.

Following the above-described analysis, a sample of 14 companies was extracted, so that there is at least one company from each category: region, type, net turnover, equity, and section. In case of each company, the audit report on the individual financial statements prepared in accordance with IFRS has been downloaded from the official website of the company. Usually, the audit report was published in the section with information for investors, together with the IFRS individual financial statements. The date of the audit report was then collected, and the type of audit opinion issued was identified. Table 8 below presents this data.

Table 8. **Audit report date and audit opinion for the sample**

Tier	Region	Type	Net turnover (mil.)	Equity (mil.)	Section	Audit report date (2013)	Opinion type
II	Centru	Large	3. 30-50	3. 15-30	B	25.03	Qualified; 10 issues presented as basis + 2 notes in a separate paragraph
I	București-Ilfov	Large	7. Over 1,000	7. Over 100	B	21.03	Unmodified
II	Nord–Est	Medium	1. Under 10	2. 0-15	C	22.03	Unmodified
II	Sud	Large	5. 100-250	1. Under 0	C	26.04	Adverse; 3 issues presented as basis
I	Sud Vest	Large	6. 250-1,000	7. Over 100	C	26.03	Unmodified
II	Nord-Vest	Medium	1. Under 10	2. 0-15	C	27.03	Unmodified
II	București-Ilfov	Large	4. 50-100	5. 45-60	C	21.03	Unmodified
I	București-Ilfov	Large	2. 10-30	4. 30-45	C	15.03	Unmodified
II	Sud	Small	1. Under 10	2. 0-15	E	n/a	Unmodified
I	Centru	Large	1. Under 10	1. Under 0	F	25.03	Unmodified
II	Vest	Large	4. 50-100	2. 0-15	G	19.03	Unmodified
I	Centru	Large	4. 50-100	3. 1530	G	29.04	Unmodified; emphasis paragraph
I	Sud-Est	Large	2. 10-30	6. 60-100	H	14.03	Unmodified
III	București-Ilfov	Large	3. 30-50	1. Under 0	C	25.04	Adverse; 17 notes as basis; one paragraph of emphasis

(*Source*: Own design)

All companies in the sample provided to the public the individual financial statements prepared in accordance with IFRS. The deadline for submitting the IFRS financial reporting was the 30th of April 2013. The audit report date served as proxy for the date of the financial statements, which is not made available to the public. However, research found that all audit reports were issued within the legal timeframe for the submission of the audited individual statements. Therefore, it can be reasonably assumed that all IFRS financial statements were also submitted on time. Most of the audit opinions are unmodified. However, there are two adverse opinions, both for companies where the insolvency procedure was open. From the 14 companies analysed, only one received a qualified opinion.

6. Comments and conclusions

The IFRS implementation in Romania is a gradual process. In 2006, the Ministry of Public Finance issued the Order 1121, which stipulates that companies with securities accepted for trading on a regulated market prepare consolidated financial statements in compliance with IFRS. Additionally, the National Bank of Romania issued an order in 2010, according to which banks will give up the local accounting standards and will make the transition to IFRS for the individual financial statements. 2012 the Order 881 was published, based on which the IFRS implementation is expanded to individual financial statements of companies listed on the Bucharest Stock Exchange. According to Order 1121/2006, companies could opt for IFRS, but starting with the financial year 2012, the application of IFRS becomes compulsory as requested by Order 881/2012. In the authors' opinion, the logical and natural evolution of the IFRS implementation in Romania, in case of public interest entities, is that in the following periods, the IFRS scope will be extended to individual financial statements of other public interest entities such as insurance companies, companies that activate in the private pension system, national companies and entities. Of course, the speed of this evolution depends on the implementation capacity of such entities and their availability to assume the costs related to the IFRS implementation.

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http://www.bnro.ro/Home.aspx

Challenges for Romanian IFRS adopters – conflicting legislation regarding the interim dividend

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Abstract: *In this article, through a normative essential research, we present the new provisions of the Romanian law which allow the payment of interim (though the law calls it quarterly) dividend and show that it is very costly and difficult for large companies to use them. We also analyse the legal provisions of IFRS regarding the payment of dividends and compare them with the ones introduced recently by the Romanian legislation. The results show that the Romanian regulation imposes a departure from the IFRS which affects the financial statements of IFRS adopters significantly. In other words, such companies face a tough decision: to follow the requirement of the national law or to comply with IFRS. The decision to stay within the national legislation may attract a qualified opinion from the auditor, while the choice for IFRS may lead to penalties imposed by Romanian authorities. Moreover, we also compare the Romanian law's provisions regarding the payment of interim dividends with the ones of other countries which use generally accepted accounting principles (GAAP) similar to IFRS. We conclude that the accounting treatment embraced by the Romanian regulator seems not only unfit in the picture, but also interfering with the European Legislation which sets the legal framework for adopting IFRS in Romania.*

Keywords: *IFRS departure, challenges, interim dividend, Romania.*

1. Introduction

Over time, lots of investors complained that the Romanian legislation did not allow the payment of interim dividends. By interim dividends, we refer to dividends paid from the profit of the year, not final until the annual financial statements were approved. Only in the second half of 2018, the law was amended to allow the quarterly payments of dividends. However, the provisions that initially seemed attractive proved to be difficult to use by large companies.

In this article, we analyse the requirements of the new law allowing Romanian companies to pay dividends quarterly from the current profits reported to date. We compare the Romanian provisions with the ones from other countries and conclude that although an important step was made to make the payment of interim dividends possible, the law is still a compromise in an attempt of the Romanian regulator to conserve the profits reported during the year, until the profit is finally decided, at the end of the year.

We also identify the multiple consequences of the unclear legislation upon the companies deciding to pay interim dividends. These consequences vary from tax issues (such as if there is any tax payable for the interim dividends) to juridical complex

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questions (such as what happens if the shareholders sell the shares during the year after they received interim dividend, if final profits prove to be losses or what is the prescription date of the interim dividend payment).

Furthermore, we compare the requirements of IFRS regarding the payment of dividends and interim dividends with the ones imposed by the Romanian legislation. As we will observe, the choice made by the Romanian regulator is not in line with IFRS, which makes IFRS adopters to face a tough decision: to follow the requirement of the national law or to comply with the IFRS. The decision to stay within the national legislation may attract a qualified opinion from the auditor (as we believe the departure is significant), while the choice for IFRS may lead to penalties imposed by Romanian authorities.

In the end, we will review some of the most critical challenges faced by a company that decides to pay quarterly dividends.

2. Literature review

The IFRS adoption process in Romania was, over the last years, researched, analysed, compared over time or with the ones in other countries. One of the favourite topics in EU was the impact of IFRS adoption process on the local GAAP. Albu & Pălărie (2016) analysed the level of convergence between the Romanian GAAP and IFRS and found that it increased by around 80% from 2005 for the analysed topics (IAS 16, IAS 17 and IAS 41), indicating that regulators made efforts to improve convergence. Andre (2017) places Romania together with Spain and Switzerland, between the countries where the national GAAPs are generally aligned with IFRS, yet not referenced in the local accounting framework. Albu & Albu (2017) are consistent with the findings showing that, although a good level of convergence exists between the Romanian accounting regulations (RO-GAAP) and IFRS, some differences are still apparent for many reasons.

Lately, another frequently met topic and refers to the challenges faced by the IFRS adopters. Abdullah & all (2014) concluded that IFRS seemed not appropriate to Kazakhstan, due to institutional arrangements (enforcement mechanisms, taxation, legislation). In line with his findings, Obradovic *et al.* (2018) reported for Serbia the incomplete compatibility of IFRS with the national environment.

Albu *et al.* (2010) consider that Romania cannot be regarded as a country displaying a successful IFRS implementation, but as one with low conformity and manifesting resistance to change. The obstacles they found were the taxation, the lack of educational training and that of resources, as well as the reduced power of internal coercive factors. Two years later, they come to a similar conclusion which is that the evolution and outcomes of the IFRS implementation process depend significantly on the policies of the local regulators. They believe that, unfortunately, the way the Romanian regulator has prepared, and published accounting regulations has led users of financial statements to conclude that the primary intended user of the financial statements remains the State (Albu & Albu, 2012). Berinde & Răchişan (2005) also came to the same conclusion that the State appears the most critical user.

Jermakowicz & Gornik-Tomaszewski (2006) identified, based on a survey they run, all the factors (and more) found by Albu & all (2010) as challenges faced by IFRS adopters. However, the institutional factors were not among the ones that could have created problems.

According to Mulyadi *et al.* (2012), who analysed the impact of IFRS adoption to taxation in four regions: Africa, America, Asia Pacific and Europe, the IFRS adoption process is very complex and needs a thorough and careful analysis especially for multinational corporation. The barriers to convergence with IFRS in an expanding Europe include, as concluded by Larson & Street (2004), the tax-orientation of many national accounting systems.

The footprint of taxation on accounting regulation in Romania and some particular disconnections between accounting and tax regulation was analysed by many scholars.

Istrate (2011), after analysing the evolution of the relationship between accounting and taxation, concluded that the majority of Romanian entities make their choices impacting financial statements towards a closer alignment with taxation. Lapteș & Popa (2013) also identified as a difficulty in implementing IFRS the relationship between taxation and accounting, as it involved high costs. Păunescu (2015) confirmed that there are tensions between accounting and taxation and that the Romanian regulations should clear these tensions by amending the Fiscal Code and adapting it to the IFRS Romanian adopters' specific needs. The findings in Romania are in line with the ones from other countries (Poland, Serbia, Czech Republic), as found by Albu & Albu (2014).

3. The debate over the quarterly/interim dividend payment

Over the years, it was rather unclear if companies were allowed to distribute anything else than strictly profits reported as such in the previous years. Paying dividends from different types of reserves (we refer strictly to realized gains, amounts also transferred from retained earnings) or even from gains reported directly in the retained earnings was a sensitive topic.

The possibility of paying interim dividends was claimed by the business environment, especially by small-sized entities, as the shareholders were interested in accessing the cash-flow without waiting more than one year after the financial statements were prepared and the general meeting of shareholders approved the dividends payable.

In 2018, a new legislation was approved and, as a result, Romanian companies are now allowed to pay dividends quarterly. These payments of dividends are not mandatory and are subject to some restrictions. In its current form, we believe that large companies consider the law difficult and costly to apply. By large companies, we refer to public companies and those with a large number of shareholders. The most important provisions of the law are mentioned shortly.

Before the quarterly dividend to be approved, the entity has to prepare financial statements, but such statements are not prepared according to the provisions of IAS 34 Interim financial reporting. The reports are considered financial statements prepared in accordance with a special framework. The immediate consequence is that IFRS adopters have to prepare a different set of financial statements according to IAS 34. The exercise of double reporting could be very expensive for large companies.

The general meeting of shareholders is required to approve the special interim financial statements (which consist only in the statement of financial position, the statement of the comprehensive income and a brief summary of the significant accounting policies) and to decide the level of profits paid as quarterly/interim dividend.

If the company is normally required to audit its financial statements, then the special purpose interim financial statements should be audited, as well, and the auditor applies ISA 800 (Revised), Special Considerations - Audits of Financial Statements Prepared in Accordance with Special Purpose Frameworks.

There are no restrictions or details regarding the level of interim dividends. The general restrictions in the Companies' Law state that it is prohibited to distribute fictitious profits, but no further guidance is found as to what is considered fictitious.

The lack of details seems surprising, as there is a European legislation imposing restrictions on the level of distributed dividends. Mainly, article 56 of the EU Directive 2017/1132 relating to certain aspects of company law prescribes that no distribution to shareholders may be made "when, on the closing date of the last financial year, the net assets as set out in the company's annual accounts are or, following such a distribution, would become, lower than the amount of the subscribed capital plus those reserves which may not be distributed under the law or the statutes of the company". In Romania, companies are prohibited to have net assets lower than half of the share equity. If these would be the case, a general meeting is mandatory and, usually, alternative sources to increase the share equity are required.

Special provisions are imposed on interim dividends also. Par. 5 from the same article of the Directive 2017/1132 states that interim accounts shall be drawn up showing that the funds available for distribution are sufficient and that the amount to be distributed may not exceed the total profits made since the end of the last financial year for which the annual accounts have been drawn up, plus any profits brought forward and sums drawn from reserves available for this purpose, less losses brought forward and sums to be placed to reserves pursuant to the requirements of the law or the statutes.

The lack of regulation, even if there are restrictions imposed by the European legislation, mandatory in Romania, questions to which degree the companies could be penalized for not complying with a Directive not fully transposed in the national law.

To continue with the main provisions of the Romanian Companies Act, at the end of the year, the general meeting of shareholders is required to approve the final dividend for the year and any differences between the level of quarterly/interim dividends and the final ones should be settled in no more than sixty days.

As said, the costs for the company deciding to pay dividends are high and are due to the requirement to audit the financial statements (instead of using maybe another type of assurance service offered by auditors, less costly), to organize a general meeting of shareholders and to incur the costs of recovering the interim dividend paid above the final dividend amount, as decided by the general meeting.

We notice that the Romanian law does not refer to the dividends as interim dividends but talks about paying quarterly the dividends. So, we asked ourselves if the interim dividend (as it is known in the literature) is the same as the quarterly paid dividend. The confusion was more deepened as the Ministry of Finance regulated the accounting treatment for the quarterly dividends, both for companies applying RO-GAAP and for IFRS adopters.

In other countries, such as the UK, companies are allowed to pay interim dividends, provided some restrictions apply. The directors are usually allowed to approve the interim dividends, to the exclusion of general meetings. However, final dividends may be declared by the company's shareholders.

The UK Companies Act provides a rather detailed list of restrictions applicable to profits that are distributable. For example, profits available for distribution are the accumulated, realized profits not previously distributed or capitalized, less its accumulated realized losses not written off minus any unrealized profits, such as those arising as a result of a revaluation of assets. As one may notice, the UK provisions are more detailed than the European Directive.

In Belgium, according the Companies Code, interim dividend distribution is possible, being decided by the board of directors based on the current profit, as long as this right is stipulated in the constitutive act of the entity. A report and a statement of assets and liabilities must be prepared, being subject to a limited review made by a statutory auditor. If the amount exceeds the profit of the whole year, the difference will be considered an advance for future distributions.

In Cyprus, interim dividends can be paid according to the specific legislation applicable, if the board of directors decides so and if the profit of the company allows it.

If the company's statutes specifically allow it, interim dividends may also be paid in Luxemburg. This practice is an important part of the tax planning as an effect of the net worth tax in force in this country. Fully taxable holding companies receiving dividends may need to pay interim dividends to avoid positive net worth or to minimize it at the end of the year (Philip, 2014).

For comparison, in Romania, according to the Ministry of Finance's vision, the quarterly dividends were just prepayments (receivables) of dividends and their payment didn't affect the company's equity, nor the retained earnings or the comprehensive income at all.

The way the interim dividend was treated for the accounting purposes raises questions about its nature: is it a real dividend or a mere prepayment which will be settled against the dividend payable to shareholders?

Considering that the retained earnings or the reserves (the share equity) are not impacted by the interim dividends' distributions, it seems that its nature is not a dividend but a receivable. If we accept this hypothesis, questions such as the need to tax the amount with the tax on dividends remain relevant. Unofficially, the Ministry of Finance implied that the income tax should be computed on these amounts. However, the paradox is that there is no legal framework for the company to settle the final income tax on dividends when the shareholders have to return part of the dividends received during the year.

Other complex legal questions remain unanswered. For example, it is unclear what happens if the shareholders sell the shares during the year after they received an interim dividend. If final profits prove to be losses or if the profit for the year is less than the interim one, the company will very likely try to find other sources to support the dividends in order to avoid hunting the shareholders to settle the differences and to settle the tax on dividends paid in excess. As said previously, it is still blurred if other reserves could be used to pay the dividends.

4. Challenges for Romanian IFRS adopters – conflicting legislation

Research proved that adopting IFRS is a function dependent on the national legislation, too. In other words, companies should comply with the IFRS but stay within the legal framework also.

Plenty of times, over the years, the Romanian national framework imposed an onerous duty on IFRS adopters. The difficulties consist in how not to move away from the IFRS and still be compliant with the national law. We will illustrate this by using two examples. During the '90s, large companies were allowed or required by the Romanian legislation to revalue their non-current assets and to use the revaluation reserve to increase their share equity. Most of the time, the assets were still used and depreciated by the entities. According to IAS 16 Property, plant and equipment, the revaluation reserve should only be transferred to retained earnings, depending on the entity's choice when it comes to the accounting policy. When companies switched to IAS/IFRS (some of them before the release of IFRS 1 First time adoption of International Financial Reporting Standards), they had to recreate the revaluation reserve and rumours were that the share equity was to be diminished as a result of cancelling the initial transactions. Of course, downsizing the share equity is not and it should not be a matter of a blind accounting transaction. Legal, economic and other aspects should be considered as well. The compromise the entities made, in their vast majority, was to recreate the revaluation reserve on the expense of other reserves.

The second example refers to the adoption of IAS 29 Financial Reporting in Hyperinflationary Economies. Romania reported hyperinflation during the '90s, averaging more than 110% per year and so all the conditions stated by IAS 29 were met (Albu & all, 2013). As most of the companies adopting IAS back then were old companies, state-owned over the decades, most of them faced the need to inflate the assets, liability, and equity. Perhaps the share equity was the one creating most of the difficulties as initially, everyone considered that it should be reported in the financial statements after the adjustment with the inflation rate. But such a treatment lead to different problems as the share equity is approved by the shareholders and registered in the Trade Register. The compromise was to present on separate lines the official share equity and the adjustment for inflation or not to adjust at all for the inflation rate (Bunget *et al.*, 2013).

Some regulators (the Romanian Ministry of Finance, the Romanian National Bank and the Romanian Financial Supervisory Authority) issued orders applicable to IFRS adopters regulated by them. In these orders there are to be found detailed rules about the accounting policies acceptable, chart of accounts and other technical details such companies should comply with, thou the legislation explicitly mentioned that the reporting entities should comply with IFRS when it comes about recognition and measurement of transactions.

In the interest if the truth, usually, the order is mostly to be used for accounting evidence (as a source of data useful for tax inspections or preparing statistical reports and other mandatory reports). However, in the financial statements, the reporting entity has the freedom to present everything according to the IFRS.

Although some researchers proved the increased quality of the financial statements as a result of IFRS adoption, other signalized that in some respects the Romanian legislation moves away from IFRS and there is still room for improvement. Pascan (2014) shows that, on average, in the post-IFRS period, the value relevance of book value of equity is 14.5% higher than in pre-IFRS period, claiming that the IFRS adoption in Romania increases the quality of the individual financial statements. On the other hand, Gorgan & Gorgan (2014) reported high level of non-compliance with IAS 38 as they found that companies are not disclosing enough information in this regard. Many of the analysed companies do not disclose required information, proving superficiality in the disclosure of intangible assets.

Maybe a couple of examples are useful to understand the Romanian Ministry of Finance's view. In case of revenue recognition, the Romanian legislation requires entities to recognize the gross value of the revenue and not only the amount expected to receive (as per IFRS 15 Revenue from contracts with customers). The difference expected not to recover should be recognized distinctively as an allowance. However, in the financial statements, the reporting entity should observe IFRS 15's requirements and deduct the allowance from the gross revenue. The accounting treatment imposed by the Romanian regulator protects the interest of the tax authority.

In case of revaluation reserves, the deferred tax is recognized in a different account and not deducted directly from the revaluation reserve. However, we believe that in the financial statements the value of the deferred income tax should be deducted from the revaluation reserve, as per IAS 16. A similar circumstance is observed in case of manufacturing goods or services. The company is required to reflect all the expenses based on their nature for the purpose of submitting the annual report to the tax authorities, but for presenting the statement of profit and loss according to IAS, any of the expense classifications could be chosen.

In other cases, some of the policies allowed by IFRS may be restricted by the Romanian legislation. This is the situation of IAS 8 accounting choice when it is forbidden to publish a new set of financial statements, adjusted for the significant error found. At most, the company is allowed to present comparative information in the following year. In this case, we believe that the reporting entity is still compliant with IFRS as the accounting policy is allowed by the specific standard, even if other policies were accepted according to IFRS but restricted according to the national laws.

In rather limited circumstances, however, the national legislation appears to conflict with the requirements of IFRS and it is unlikely for the entity to correct the divergence in the financial statements. We refer in the rest of the paper to the interim dividends (or quarterly dividends as referred to by the law) which are allowed to be paid according to recent amendments of the Companies' law.

5. Accounting for interim dividends

As said previously, according to the Ministry of Finance's vision, the quarterly dividends were merely prepayments (receivables) of dividends and their payment didn't affect the company's equity (nor the retained earnings or the comprehensive income) at all.

Based on the literature review, entities applying IFRS consider the interim dividend as a distribution of equity. IFRS 9 Financial Instruments defines dividends as "distributions of profits to holders of equity instruments in proportion to their holdings of a particular class of capital".

On the other hand, the Romanian Companies law, in line with the RO-GAAP, defines the dividend as the share part of the profits payable to shareholders.

Although the definition seems very similar, the meaning of "profits" seems to be different for the local regulators. The word "profits" used instead of benefits or gains (as an example) lead to the debate over what types of reserves and gains can be distributed as dividends.

Clearly, the Romanian legal framework has to adapt to the continuous changes in the financial reporting framework. While the IFRS move fast to using fair values and recognizing more gains in the other comprehensive income, we believe it is mandatory for the regulators to provide a legal base for the distribution of such income and details about what kind of gains (no matter if recognized as profits or comprehensive income) may be distributed.

According to IFRS 9, the payment of interim dividends results in a decrease of the retained earnings (and share equity). The payment of the dividends should be presented as an operational or financial cash flow. The different national accounting treatment leads to different ratios and structure of the assets.

IAS 1 Presentation of Financial Statements Financial (IAS 1, par 16) cannot be described as complying with IFRS unless they comply with all the requirements of IFRS (included here are IFRS, IAS, IFRIC Interpretations and SIC Interpretations).

As stated by IAS 1, par 18, inappropriate accounting policies may not be rectified either by disclosure of the accounting policies used or by notes or explanatory material.

We believe that the departure from IFRS's provisions is not justified in this case and the error is significant in the financial statements if the company stays with the national legislation. The sanction could be imposed by a qualified audit opinion. On the other hand, if the company respects IFRS and departures from the national law, penalties may be due.

As for the conflict between the IFRS which are adopted as a result of Regulation (EC) no. 1606/2002 of the European Parliament and of the Council on the application of international accounting standards, we analyse the possibility for the Commission to commence infringement proceedings against Romania on the ground that the national legislation conflicts the European one. It would not be the first case. In the past, the European Commission requested Romania to align its rules on the valuation and accounting of purchased debt claims with EU law, with the country risking an infringement procedure unless it fixes this provision. The departure was motivated by the interest of the tax authority to collect higher taxes.

However, we believe that it is unlikely for European Commission to commence infringement proceedings against Romania as IFRS are standards used to present in the financial statements the transactions and as long as the entities present fairly, according to IFRS' provisions, the financial statements. In this context, the Romanian regulator choice remains only valid for information evidence.

The amendment of the Companies law which allows the payment of quarterly dividends was passed in the second half of 2018. We scrutinized all the reports and the financial statements published by listed companies on the Romanian Stock Exchange after June 2018.

Based on the analysed data, from all the listed companies on the Bucharest Stock Exchange we found in 2018 only one entity which chose to distribute quarterly dividends. The company we refer to is ALRO SA and the information we analysed is public on its website. The statement made by the reporting entity (an IFRS adopter) names the dividends "interim" and in the disclosure of the special-purpose financial statements, the entity explains the accounting treatment which is in line with the Romanian regulation. That the Romanian legislation is unclear is proven also by the fact that the analysed company paid interim dividends both from the current profit and from retained earnings and yet, neither amount impacts the retained earnings but only the receivables and payables. The auditor confines the right treatment as the report issued is unqualified, however, it points out that the framework is the Romanian legislation and not IFRS (the financial statements indicate the Romanian legislation as well as the accounting framework). For the third semester of 2018 ALRO SA prepared two different sets of financial statements – one to be used for tax purposes and the second to be used for financial reporting ones.

We also analysed the annual financial statements of ALRO SA, supposedly prepared according to the IFRS framework. To our surprise, the interim dividend paid from the retained earnings and the profit for the current year was reported in the financial statements according to the national legislation. Disregarding the IFRS, the company didn't report a distribution of retained earnings or other equity elements, but as receivables and payables. On the other hand, the payment of dividends was presented as a financing cash flow.

The auditor didn't qualify its opinion, however, in the footer of the statement of changes in equity, it disclosed the fact that the interim dividends paid were recorded according to the Romanian legislation, as a prepayment and a liability. The auditor didn't explicitly state that this accounting treatment is a departure from IFRS, but the mere fact that it was mentioned independently and also explained in three different notes in the financial statement is a proof that the national requirement disobeys IFRS.

We intend to monitor over the time the final results published in the financial statements prepared in accordance with IFRS of other companies to see if the auditor agrees with the accounting treatment. As said, we believe that the accounting treatment is a departure from IFRS 9 and the auditor should sanction this departure with a qualified opinion.

6. Conclusions

The payment of an interim dividend in Romania, although initially was well-received by companies, later on, proved to be challenging for large companies analysing the possibility to pay interim dividends. Due to unclear provisions of the law, many questions may arise, such as such as if there is any tax payable for the interim dividends, what happens if the shareholders sell the shares during the year after they received interim dividend, if final profits prove to be losses or what is the prescription date of the dividend payment.

We also showed that sometimes, complying with IFRS in Romania could be a difficult challenge, as companies must also observe the national legislation. As previously noticed by other researchers before us, the primary intended user of the financial statements remains the State (Albu & Albu, 2012). However, when it comes about IFRS, IAS 1 Presentation of Financial Statements (IAS 1, par 16) cannot be described as complying with IFRS unless they comply with all the requirements of IFRS. As stated by IAS 1, par 18, inappropriate accounting policies may not be rectified either by disclosure of the accounting policies used or by notes or explanatory material.

The Romanian regulator imposed recently on IFRS adopters a specific accounting treatment for interim dividend. We believe that this treatment departs from IFRS 9, as it requires the distribution of such dividends to be recognized as a receivable and payable, and not as a distribution of equity. The departure seems significant as it affects the equity and all the financial ratios based on the financial statements.

A Romanian IFRS adopter faces a conflict between the national legal framework and the IFRS requirements and basically, it has to choose if to stay within the national legislation (which may attract a qualified opinion from the auditor) or if to apply IFRS's requirements (which may lead to penalties imposed by Romanian authorities).

The matter is sensitive as the departure is not the result of poor judgment of the reporting entity but the result of a national requirement conflicting with IFRS. But we also believe that in the annual financial statements the company should comply with IFRS and present it as a distribution of retained earnings and not as a prepayment.

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IFRS compliance in Romania: An institutional analysis on pharmaceutical companies

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Abstract

Idea: *To identify the factors which determine the IFRS compliance variability across organizations in pharmaceuticals industry in Romania.*

Data: *Financial and non-financial information were collected from the Bucharest Stock Exchange website, for 2013 and 2017, for the three pharma companies which applied IFRS for the first time in 2012, in their individual accounts.*

Tools: *EY Disclosure Checklist (2012) and Dichotomous approach (Tsalavoutas, 2011) were employed for the IFRS compliance index calculation. Institutional theory was used in order to interpret the findings.*

What's new? *Key findings: 1) Coercive isomorphism works for pharma companies regarding IFRS adoption, but not necessarily for IFRS compliance; 2) Mimetic isomorphism does not apply for the analysed companies: organizations do not copy other entities which show a higher compliance level; 3) Market capitalization positively impacts IFRS compliance if the entity is part of an international group; 4) Audit opinion can change from qualified to unqualified if the auditor changes from mid-tier company to a local company.*

So what? *The granular findings show that there is a low overall compliance level for a group of pharma companies in Romania, despite the claim that IFRS are applied and unqualified opinions are received. Results may be of interest for regulators and for auditors, who can enhance uniformity in practice via normative isomorphism.*

Contribution: *De jure compliance is high, but de facto compliance is limited, among a group of pharma companies in Romania. Capital needs theory does not apply for entities with low internationality levels.*

Keywords: *IFRS compliance, pharmaceuticals industry, institutional theory, emerging country.*

1. Introduction

International organizations and institutions have been strongly impacted by the increased tendency of globalization around the world. Among other consequences, this has particularly increased world trade and interaction, resulting in a growing development of the international financial markets, leading to a more significant need for transparency, high quality of the financial reporting and higher demands from the economic stakeholders, such as - investors, regulators - and financial analysts (Glaum *et al.* 2013). IFRS could address the above-mentioned necessities, as many scholars claim among the literature (Houqe, 2018; Ionașcu *et al.*, 2014; Navarro-Garcia and Bastida, 2010). However, IFRS were initially deployed using the developed countries'

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model, which are characterized by common law, investors' protection (Albu *et al.*, 2011; Houqe, 2018). These are the opposite traits of developing countries, which rather have a secrecy culture, less investor-oriented nature and are more tax driven (Mokhtar *et al.*, 2018; Street and Larson, 2004; Nurunnabi, 2015; Hope, 2008). Despite these facts, "most of the adopters of IFRS have been developing countries" (Houqe, 2018) and this is why it is relevant to assess which is the actual compliance level in these jurisdictions. Many scholars stress the importance of real conformity, so that developing countries can truly benefit from high quality accounting standards (Albu *et al.*, 2011; Navarro-Garcia and Bastida, 2010), like McGee stated, cited in Mokhtar *et al.* (2018): "Adopting IFRS is one thing. Implementing them is something else. The mere fact that a government might adopt new accounting rules does not mean that they will be swiftly, efficiently and comprehensively applied and implemented throughout the economy".

Many theories have been employed on the mission of explaining IFRS adoption and compliance among developing countries and, to a deeper level, among organizations in the same economic field. For the purpose of this paper we have studied institutional framework and *agency*, *signalling* and *capital need* theories. Di Maggio and Powell (1983) proposed three types of institutional isomorphism: coercive, mimetic and normative. The first one explains the organizations' behaviour as responses to external pressures from institutions they are dependent on in a way or another. Entities' response to uncertainty and goal ambiguity by copying other organizations they perceive as successful or legitimate embraces the form of mimetic isomorphism, while normative isomorphism claims that uniformity among an economic field can be obtained via professionalization and socialization.

Agency, *signalling* and *capital needs* theories rely on the organizations' tendencies to: reduce the information asymmetry among stakeholders, enhancing visibility and credibility; reveal a transparent approach of the management's methods and rely on higher quality disseminated information for potential investors as a mean of raising financing. (Samaha and Khlif, 2016).

In this paper we aim to respond to the following research question: What are the factors that determine IFRS compliance variability across organizations in pharmaceuticals field in Romania?

We chose Romania, due to its' emerging country status and the ease in analysing financial statements in terms of data and language accessibility. Pharma industry proved to be relevant at European level (EFPIA report, 2018) but as well at Romanian level, because of the difficulties the medical system faces. We are thus interested in the IFRS compliance in Romania, in a very important industry, because higher financial reporting quality involves less information asymmetry, more financing sources and increased international credibility. The standards which emerged as relevant ones for pharma industry are: *IAS 18 Revenue*, *IAS 36 Impairment of assets* and *IAS 38 Intangible assets* (Lavi, 2016; PwC report, 2017).

For the three pharma companies in Romania which started reporting according to IFRS in 2012, we collected financial and non-financial information: auditor type and opinion, total assets, market capitalization and shareholders' structure. The analysis was performed for two years: 2013 right after the first-time application, because it provides more relevant compliance assessment, since financial statements production must have stabilized according to the new rules and 2017, which is the most recent available year. We correlated this data with IFRS compliance index, calculated using the *dichotomous approach* (Tsalavoutas, 2011) and we interpreted the results through the institutional framework and *agency* and *capital needs* theories lenses (Samaha and Khlif, 2016).

We contribute to the literature by focusing our analysis on a relevant industry in Romania, expanding the IFRS knowledge on compliance in this country and assessing the way institutional framework theories apply or not in an emerging context.

This paper is organized as follows: Section 2 comprises the literature review; Section 3 - the context for IFRS in Romania, pharmaceutical industry in Romania and IFRS within this industry; Section 4 briefly introduces the theoretical framework; Section 5 describes the methodology employed for our research; Section 6 presents the results obtained and the last part synthesizes the conclusions.

2. Literature review

Starting 2005, for EU companies it became mandatory to report their consolidated accounts according to IFRS (following EU 1606/2002 issued by the European Commission). Moreover, globally, 87% of the jurisdictions worldwide require IFRS "for all or most domestic publicly accountable entities (listed companies and financial institutions) in their capital markets" (IFRS Foundation, April 2018). An important part of the story is, though, the case of emerging countries (on which we will concentrate our research), which share common institutional features such as: low protection of investor's economic interest, (La Porta, Lopez-de-Silanes, Shleifer, & Vishny, 2000, cited in Houqe and Monem, 2016), low level of financial transparency, (Fan, Wei, & Xu, 2011, cited in Houqe and Monem, 2016) elevated corruption levels (Faccio, 2006; Olken & Pande, 2012; Shleifer & Vishny, 1993, cited in Houqe and Monem 2016) and "weak rule of law" (La Porta, Lopez-de-Silanes, Shleifer, & Vishny, 1999, cited in Houqe and Monem, 2016). IFRS are designed to follow the needs of capital markets from developed countries (Zehri and Chouaibi, 2013; Mokhtar *et al.* 2018). However, many developing countries adopted IFRS and their institutional context open rooms for variation in practice. Therefore, there are calls to study the IFRS impact in developing countries (Samaha and Khlif, 2016; Mokhtar *et al.* 2018; Houqe 2018; M. A. dos Santos *et al.* 2015), especially due to the increasing number of emerging economies having applied or intending to apply IFRS during 2001 and 2008 (Zehri and Chouaibi, 2013). Albu *et al.* (2011) argue that "merely changing accounting standards without implementing profound changes in capital market regulations, economic development policy or corporate governance may not yield desired results in the financial reporting quality". Alon (2013), Glaum *et al.* (2013) and Hofstede (2011) also identify cultural specificities equally important, together with regulatory and normative topics.

Forces which have influenced IFRS adoption across differently economically developed countries have also different roots: in the case of emerging countries, exogenous aspects influenced the adoption process (such as both the desire and the need to be part of world trade, access to international funding sources via capital markets, interaction with multinational companies and pressures from the World Bank and International Monetary Fund) (Albu *et al.* 2011); Nurunnabi (2014) argues that the main agents of the proliferation of IFRS in the developing countries are the above mentioned institutions (also called *imperialist institutions* or *donor agencies*) and Points and Cunningham (1998), cited in Nurunnabi (2014) further affirm that these organisms should "assist real accounting reforms" and not simply impose IFRS adoption.

IFRS adoption and compliance are important for emerging countries, as they bring various advantages: increased comparability in the context of worldwide trade, which would lead to an increasing level of foreign direct investments, lower cost of capital due to more credibility assigned to financial reporting packages, overall higher-quality information disseminated in the economic environment useful for a wide range of stakeholders (Houqe, 2018).

However, their benefits and appropriateness are still to be studied in code-law countries, due to the questions which arise from the level of law enforcement and protection granted to the interests of the company's shareholders and investors, in which the internal audit department plays an important role (Navarro-Garcia and Bastida, 2010; Alzeban, 2018). La Porta *et al.* (1998) noted that the "French-civil-law" countries distinguish themselves from Scandinavian countries or German countries by displaying the lowest level of protection for the shareholders and investors and a very low level of law enforcement. In this category we can find Spain as a code-law country, where Navarro-Garcia and Bastida (2010) observed that even though IFRS' high-quality is well noticed, they are not perceived as more suitable than the local accounting standards. Moreover, adoption costs have been more significant than the benefits and this can be attributed to the fact that accounting in Spain has a more impact on accountability, than decision-making, the focus on fiscal aspects is very high and generally that the economic form is less important in the front of the legal form. All the above aspects were confirmed by Albu *et al.* (2011), Ionașcu *et al.* (2011) and Albu and Pălărie (2016) in the case of Romania, which will be the research item for our study. Mokhtar *et al.* (2018) argue that "compliance with the requirements of IFRS will be a major concern for those [developing] countries since the lack of financial reporting infrastructure, such as regulatory enforcement, may cause a significant non-compliance with IFRS." Hope (2003) also stresses the importance of enforcement, since certain standards allow more than one accounting choice, which can increase the incidence of creative accounting and earnings' management (Houqe, 2018; Navarro-Garcia and Bastida, 2010; Carlin and Finch, 2010).

Even though companies may report full compliance, actual research show that compliance curve is large (Hodgdon *et al.*, 2008).

Quantitative methods for determining the level of compliance with IFRS have been widely used by the researchers and can be split into two categories: the unweighted index, also known as "Cooke's dichotomous approach", (Mazzi *et al.* 2017; Tsalavoutas 2011; Glaum *et al.*, 2013; Juhmani, 2017; Kwame Agyei-Mensah, 2017; Mazni *et al.* 2012) and the Partial Compliance index (Al-Shiab, 2003 cited in Tsalavoutas *et al.* 2010; Mazni *et al.* 2012; Tsalavoutas *et al.* 2014).

Studies have shown that if the dichotomous approach is used, the level of identified compliance is higher than if the Partial compliance method is used. The unweighted index involves the computation of a list of required disclosures by the researcher and the items being evaluated as 1, if the company is compliant and 0 if it is not. This method is considered by the researchers (Tsalavoutas *et al.* 2010; Mazni *et al.* 2012) to unrightfully give a higher importance to the standards which have more requirements to comply with and consequently a lower weight to standards which have less specifications to follow.

The Partial compliance index on the other hand, allows for the compliance assessment to be performed standard by standard, due to the fact that it is obtained initially by calculating a "compliance index for each standard", which is then "divided by the total number of relevant, applicable standards for each company" (Al-Shiab, 2003 cited in Tsalavoutas *et al.* 2010).

Qualitative methods employed were based on questionnaires, surveys and interviews with academics, regulators, audit professional, financial managers etc. (Uyar *et al.* 2016; Nurunnabi, 2015; Ballas *et al.* 2010).

M. A. dos Santos *et al.* (2015) suggest that in emerging countries the adoption of IFRS is more determined by country-factors, which is the opposite for developed countries' experience. At company level, Kim *et al.* (2014), cited in Houqe (2018) noted that cost of capital is lower for entities which adopted IFRS, as compared to non-adopting ones, which was explained by both institutional infrastructure (e.g. country level corporate governance) and enforcement mechanism "(i.e. disclosure regulations, auditing environment and investor)" and that IFRS adoption "could be a substitute for stronger institutional infrastructure in capital market development".

Houqe and Monem (2016) demonstrated that the extent of IFRS experience and disclosure are directly impacted by the perceived corruption found in a country. Corruption not only affects the IFRS matter, but as well the economic growth, the level of foreign direct investments (positively correlated with IFRS adoption and compliance, as per Houqe, 2018) and the foreign exchange rate. Corruption is demonstrated in various research paper as a determinant of both IFRS adoption and compliance (Mazzi *et al.* 2017; Bova and Pereira 2012; Glaum *et al.* 2013; Nurunnabi, 2015).

Culture is a frequently mentioned aspect among IFRS-based research papers. Institutional theory itself stresses the importance of cultural factors and define culture as a "communications system that transfers, from one-time period to the next, social knowledge about institutions, their formal and informal rules" (Albu *et al.* 2011). Mazzi *et al.* (2017), Glaum *et al.* (2013), Nurunnabi (2015) include as well cultural factors in their research methodologies, under various forms: Hierarchy, Mastery and Embeddedness (following Schwartz's approach in 2008), secrecy (Albu *et al.* 2011; Mokhtar *et al.* 2018), conservatism (Glaum *et al.* 2013). Capital market's size is another country-level factor which influences IFRS adoption and compliance (Glaum *et al.*, 2013; Procházka and Pelák, 2015; Zehri and Chouaibi, 2013).

Among the company-level factors which influence IFRS compliance entity size can be found (Glaum *et al.*, 2013; Zehri and Chouaibi, 2013; Uyar *et al.* 2016; Navarro-Garcia and Bastida, 2010). Also, most of the studies mention in a way or another the importance of audit in IFRS compliance: either in the form of audit committees' presence and independence (Kwame Agyei-Mensah, 2017), the internal audit department's size and level of professional training (Alzeban, 2018; Juhmani, 2017);

or the collaboration with a Big 4 audit company for assurance on IFRS compliance (Glaum *et al.* 2013; Tsalavoutas 2010; Ben Salem 2017; Nurunnabi 2015).

The listing status has also been associated with a positive level of IFRS compliance as per Uyar *et al.* (2016) and cross-listing has been mentioned in the literature as well (Hodgdon *et al.* 2008; Tsalavoutas *et al.* 2014; Mongrut and Winkelried, 2018). There was found a positive relationship between firm's profitability and IFRS adoption/compliance (Bepari *et al.* 2014; Juhmani, 2017).

Resources' training (both accountants and auditors) is a factor often mentioned in consulted studies (Mokhtar *et al.* 2018; Ballas *et al.* 2010; Nurunnabi, 2015).

3. Context of the study

3.1. IFRS in Romania

Over time, Romania had many accounting influences, depending the regime its' politics was under. Before 1950s French, Italian and German models were a source of inspiration (Albu and Albu, 2014), while between 1947 and 1989, during the communist period, the accounting system was of Soviet origin (Albu *et al.*, 2014). Among the main characteristics of this period there is the prominent secrecy in the financial reporting, since at that time, the state was the only user of the accounting outputs, while also being interested mostly in collecting taxes, giving to the accounting practices a strong tax-orientation (Albu *et al.*, 2011; Albu *et al.*, 2014). This dual role of the state in issuing accounting standards and as well ensuring tax collection is appreciated by Street and Larson (2004) as "interesting". After the fall of the communist regime, French influences have emerged (Albu *et al.*, 2011) and the first step in the reform was taken, but the above mentioned specificities remained, since "the new society will always contain many of the institutional elements that previously existed" (Lichtenstein, 1996, p. 247, cited in Albu *et al.*, 2011).

After 2007, IFRS became mandatory for financial institutions and listed companies' consolidated accounts, while for the other entities, adoption remained voluntary. Starting 2012, international standards became mandatory for banks and all listed entities, in individual financial statements (Gorgan and Gorgan, 2014; Ionașcu *et al.*, 2014).

3.2. Pharma industry in Romania

Progress in science and technology impacted in a significant manner pharma industry and this directly led to an improved life quality, which is, in the end, the true desiderate of the medical and research efforts (EFPIA report, 2018). Looking at a wide local context for Romania, research-based pharma industry can be of vital importance for Europe's economic growth and competitivity, but challenges are equally significant and must be considered (e.g. fiscal austerity introduced by governments since 2010).

Thus, there is a stringent need to give the pharma industry the deserved importance, since problems in providing Romanian patients the needed medication on time (crises related to substances such as clonazepam, levodopa, acenocumarol, cisplatin etc.) arose in the past. There is a high potential of manufacturing in-house medicines, due to the fact that over the last 10 years, factories have been developed and modernized and yet, patients still wait for weeks for their treatments to be delivered via imports from other countries (Hotnews, 2018). Economy overall is also affected, because of the pharma trade balance deficit, which in 2017 was 2.25 BLN EUR, meaning approximately 15% of the total deficit. Thus, the Industrial Drug Manufacturers Patronage in Romania (*rom. Patronatul Producătorilor Industriali de Medicamente din România*) claim that the pharma industry is recognized by the government as a strategic economic area of national interest, with the appropriate public measures (Hotnews, 2018; Ziarul financiar, 2018).

Among the companies identified by Cegedim (2018), cited in Forbes (2018), can be found the following entities on which the special focus of this paper will be: Company C (which is part of Sanofi group – ranking number one, with 67 million units sold between July 2017 and June 2018), Company A (with 31.7 million units sold between July 2017 and June 2018) and Company B (last one in ranking, with 20.2 million units sold in the same indicated period).

3.3. IFRS and pharma industry

Pharma industry is subject to many laws and regulations which ensure that the medicine testing and producing is safe and effective. However, adverse circumstances and situations may occur anytime, regardless the industry a company is part of. Causes can be found among recession, inflation, difficulties in obtaining financing etc. thus, assets' impairment treated in IAS 36 can have an impact on almost any industry. Despite relying on *fair value* concept, which has been long criticized, this standard is actually ensuring that the assets a company owns are not disclosed at a value which is higher than their recoverable amount, in which case an impairment loss has to be recognized. Additional information regarding the impairment tests (such as methodology and parameters used), impairment losses recognized and reversed are also required (Glaum *et al.*, 2013).

Triggers for the need to book assets' impairment can consist in denials of approvals for developed medications or inappropriate acquisitions (Lavi, 2016). Pricewaterhouse Coopers (PwC) report in 2017 also provide accounting treatments for the most common practices in the pharmaceutical businesses and assets impairment is included.

We thus, consider that *IAS 36 Impairment of assets* can be considered relevant for the pharma industry. Also, this standard is perceived as being one the most difficult standards in Romania (Street and Larson, 2004) but as well in European companies (Glaum *et al.*, 2013) or other countries (Mazni *et al.*, 2012).

According to Lavi (2016) revenue recognition is also relevant for this field, but it does not significantly challenge IFRS compliance. Although it is considered a simplistic standard, Budaraj and Sarea (2015) and Houqe (2018) show that revenue is one of the most significant positions in the financial statements and also the most prone to manipulation. PwC report (2017) confirms the relevance of *IAS 18 Revenue*. Starting 1st of January 2018, IAS 18 was replaced by *IFRS 15 Revenue from contracts with customers*.

One of the most important activities in the pharma industry are related to research and development expenditures (EFPIA, 2016; PwC, 2017; Lavi, 2016). *IAS 38 Intangible assets* state that research expenses should be recognized directly in profit or loss statement, while development costs must be capitalized if they meet the criteria specified in the standard and amortized over its' finite life. The difference between the two types of costs resides in the entity's certainty that the future economic benefits are probable. The study conducted in 2014 by Gorgan and Gorgan reveal that in the case of Romanian listed companies "there is a high level of non-compliance with IAS 38", due to the fact that few companies report according to the full disclosure requirements, many showing superficiality. The above-mentioned research does not contain a compliance assessment for pharmaceutical companies, which is a relevant chapter of the story that will be addressed in this study.

Other relevant accounting elements or transactions refer to business combinations and provisions, which are not subject to our paper.

4. Theoretical framework: Institutional theory

Bureaucracy, according to Weber (1952:181-82), cited in DiMaggio and Powell (1983), was the result of three factors: competition, both among capitalism companies in the marketplace and between states (the latter giving rise to the need of control over the citizens) and "bourgeois demands for equal protection under the law". The most important aspect in this context, as Weber (1968:974 cited in DiMaggio and Powell, 1983) noted is competition. This is particularly relevant given the fact that the environment in which companies operate is more and more globalized (Glaum *et al.*, 2013) and the largest entities are the embodiment of bureaucratic organization (Weber, 1968:974 cited in DiMaggio and Powell, 1983). Thus, bureaucracy is the main form of organization, since companies "are still becoming more homogeneous" (DiMaggio and Powell, 1983). Thereby, Hawley (1968) cited in DiMaggio and Powell (1983) define "isomorphism" as "a constraining process that forces one unit in a population to resemble other units that face the same set of environmental conditions". This phenomenon has several causes and outputs, resulting in three types of isomorphism.

The first elements are dependency and constraint, which give rise to the *coercive* side of isomorphism. Whether it appears at organizational level (when an entity depends upon another entity, for example if there is a single supplier or a subsidiary must follow the same accounting policies or procedures as the parent entity) or at field-level (when the organizational field depends upon a single source of important resources or upon the state as an influencing agent), coercive isomorphism is the result of pressures exerted in a form or another by the state or by society itself (DiMaggio and Powell, 1983).

The second elements are uncertainty and goal ambiguity, that organizations or organizational fields face and to which they respond with modelling (the process in which entities copy or are being copied in case uncertainties are met, giving rise to *mimetic isomorphism*). Knowingly or not, the criterion that companies use in modelling themselves is how successful or legitimate the model-provider is perceived (DiMaggio and Powell, 1983).

Professionalization or socialization are aspects which led to *normative isomorphism*. The first one refers to the efforts that members of a profession undertake in order to "define the conditions and methods of their work", set accession rules for the potential new members and gain legitimation and occupational autonomy (DiMaggio and Powell, 1983). It is translated into the common criteria staff and management personnel is being recruited and evaluated (such as the preference for certain university credentials), which further leads to the same decisions made by people, as a result of their common formation. Socialization refers to the personal traits of people members of the same profession, such as vocabulary (be it *organizational*, according to Cicourel - 1970 and Williamson - 1975, or *personal*, as per Ouchi – 1980, all cited in DiMaggio and Powell, 1983), behaviour or dress style.

Samaha and Khlif (2016) and Nurunnabi (2015) apply the isomorphism concept in explaining the decision of IFRS adoption in developing countries. They have also identified the theories which influence the degree of compliance with IFRS (also found in Kwame Agyei-Mensah, 2017). The first one is the *agency theory,* which states that economic actors in a company's life have different interests and information needs, which gives rise to information asymmetry, therefore IFRS adoption may imply fewer accounting choices and more disclosure. In this respect, literature review proposes the following explicative factors: firm size, ownership structure, leverage, auditor type (Karim and Ahmed, 2005; Samaha and Stapleton, 2009; Al-Akra *et al.*, 2010 cited by Samaha and Khlif, 2016). *Signalling theory* suggests that IFRS usage by the managers can be interpreted as a sign of the management's willingness to either align to stricter standards or to disclose more financial information to the investors and interested parties and variables to be investigated could be profitability and liquidity (Samaha and Khlif, 2016; Kwame Agyei-Mensah, 2017). *Capital need theory* claims that international and public companies will comply more than private companies, since the demand for more transparent and complex information appears once the companies raise financing by equity issuance (Marston and Shrives - 1996, Craven and Marston - 1999, Ashbaugh and Pincus – 2001, all cited in Samaha and Khlif, 2016). Explicative variables which could be analysed are foreign listing status and internationality.

5. Methodology

For the purpose of this paper we employ institutionalist framework (coercive and mimetic isomorphism) and qualitative research methods, particularly because organizations and their environment are not detached from one another, but are rather connected and interdependent (Zilber, 2002 cited in Albu *et al.*, 2014). However, we complement the methodology by also using a quantitative technique, which allows the assessment of the companies' financial reports' compliance degree – the compliance index, obtained via the *dichotomous approach*.

The chosen companies for this paper are the ones which had to report their individual financial statements according to IFRS for the first time in 2012 having NACE codes *Manufacture of basic pharmaceutical products* – Company A and *Manufacture of pharmaceutical preparations* – Company B and Company C.

First, we calculate an IFRS compliance index, using the *dichotomous approach* proposed by many scholars in the available literature (Tsalavoutas, 2011; Gorgan and Gorgan, 2014; Juhmani, 2017). For the studied standards, we determined the number of applicable requirements, for which we deem the level of compliance: 1 for full compliance, 0.5 for semi-compliance, 0 for non-compliance and N/A for an item which was not applicable.

$$CI = \frac{\sum_{i=1}^{t} di}{\sum_{i=1}^{n} di}$$

Where:
CI = Compliance index
di = rating for item i (1 for full compliance, 0.5 for semi-compliance, 0 for non-compliance and N/A for an item which was not applicable)
t = number of items disclosed
n = maximum applicable items to be disclosed

The index is unweighted, in order to avoid subjectivity in assessing the importance of the disclosure items.

The standards subject to our analysis are *IAS 18 Revenue, IAS 36 Impairment of assets* and *IAS 38 Intangible assets,* which we found to be relevant for the pharma industry. Some of the studies involving compliance indexes use check-lists developed and published by Big 4 companies (e.g. Gutierrez Ponce *et al.*, 2016, use an EY check-list from 2012; Gorgan and Gorgan, 2014, use a Deloitte "IFRS Presentation and Disclosure Checklist"). We will use the check-list developed by EY in 2012.

Financial information, required for the compliance assessment and company characteristics were collected from the companies' annual reports and other information published on Bucharest Stock Exchange website. In our longitudinal research, we consider two important years: 2013, which is right after IFRS first time application and we consider companies might have had the chance to better understand the disclosure requirements and 2017, which is the most recent, finalized available year, allowing a comprehensive assessment of the IFRS compliance evolution.

The other collected information refers to: audit type and audit opinion (often used in the literature review according to Hope *et al.* 2008; Păunescu, 2015, Nurunnabi, 2015; Tsalavoutas 2010; Ben Salem 2017; Glaum *et al.*, 2013), total assets (Hope *et al.* 2008; Glaum *et al.* 2013; Garcia-Navarro & Bastida, 2010), stakeholders' structure (Hope *et al.* 2008; Bova and Pereira, 2012; Mongrut & Winkelried, 2018; Procházka and Pelák, 2015; La Porta *et al.* 1998; Juhmani, 2017) and stock market capitalization (Ben Salem 2017).

For the audit components we classified the audit providers in: Big 4 companies, other audit networks, local audit firms and sole practitioners; the audit opinions are: qualified, unqualified, adverse and disclaimer of opinion. We also considered relevant to collect the companies' category as a characteristic: we obtained premium entity (first tier) and standard entity – second tier (as per Bucharest Stock Exchange classification).

6. Results

According to the employed methodology, the results obtained using the compliance index are described in table 1, below:

Table 1. **Compliance index**

Company	**Compliance index 2013** IAS 18	IAS 36	IAS 38	Total	**Compliance index 2017** IAS 18	IAS 36	IAS 38	Total
Company A	1,00	0.17	0,39	0,52	1,00	0,25	0,33	0,53
Company B	1,00	0,50	0,50	0,67	1,00	0,50	0,39	0,63
Company C	1,00	0,50	0,72	0,74	1,00	1,00	0,69	0,90

(*Source*: Compiled by the author)

Total index is calculated as an average of the compliance indexes for the three standards.

Other financial information, and organizational characteristics were collected from the annual reports and other information published on Bucharest Stock Exchange website, for 2013 and 2017, in order to have a better visibility on what changed within companies in terms of auditing, size, listing or shareholders' structure.

Table 2. **Company A characteristics**

Characteristic	**2013**	**2017**
Auditor type	Other audit networks - BDO Romania	Local audit firm
Auditor opinion	Qualified	Unqualified
Total assets (RON)	511.566.901	572.935.544
Market capitalization (RON)	374.607.000	361.180.000
Shareholders' structure (%)	100,00	100,00
Romanian legal person (%)	72,02	75,59
Foreign legal person (%)	6,75	7,23
Others (%)	21,23	17,18
Aggregated compliance index	0,5185	0,5278

(*Source*: Compiled by the author)

Table 3. **Company B characteristics**

Characteristic	**2013**	**2017**
Auditor type	Other audit networks - BDO Romania	Other audit networks - BDO Romania
Auditor opinion	Unqualified	Unqualified
Total assets (RON)	210.626.719	262.380.642
Market capitalization (RON)	295.722.091	287.729.000
Shareholders' structure	100,00	100,00
Romanian legal person (%)	68,10	87,83
Foreign legal person (%)	-	-
Others (%)	31,90	12,17
Aggregated compliance index	0,6667	0,6296

(*Source*: Compiled by the author)

Table 4. **Company C characteristics**

Characteristic	**2013**	**2017**
Auditor type	Big 4	Big 4
Auditor opinion	Unqualified	Unqualified
Total assets (RON)	360.063.824	497.112.301

Characteristic	2013	2017
Market capitalization (RON)	446.140.000	1.434.350.000
Shareholders' structure	100,00	100,00
Romanian legal person (%)	-	-
Foreign legal person (%)	81,64	81,59
Others (%)	18,36	18,41
Aggregated compliance index	0,7407	0,8958

(*Source*: Compiled by the author)

Compliance regarding revenue disclosure has been constant for both 2013 and 2017, apparently being the easiest standard to comply with, of those which were subject to our research. All three entities presented the accounting policies used for recognizing revenues, each significant category of revenue recognized during the period and contingent assets and liabilities. We noted the other two items (disclosure of the "methods used to determine the stage of completion of transactions involving the rendering of services" and the "amount of revenue arising from exchanges of goods or services") as not applicable, due to the fact that the entities did not report having such transactions.

Considering the fact that starting 1st of January 2018 IAS 18 will be replaced by IFRS 15, we investigated whether entities made any disclosures on being aware and having performed an assessment of the impact: all of them specified this item in their financial statements as of 31st of December 2017.

Compliance level for *IAS 36 Impairment of assets*, for all the three analysed entities, is very low, confirming the conclusions of Street and Larson (2004), which stated that IAS 36 is perceived as one of the most difficult standards to comply in Romania. Information provided was insufficient, thus we are in the position of impossibility to determine whether the entities did not disclose information about impairment tests and losses or reversals, or they did not perform any tests at all. No entity has provided information especially about cash-generating units, discount rates, fair value of the assets or recoverable amount.

Even though *IAS 38 Intangible Assets* is a relevant standard for pharma industry, the overall compliance level has decreased in 2017 as compared to 2013.

Regarding company A, there has been a slight increase in the IFRS conformity and there are a few aspects to mention, adjacent to this evolution: in 2013 the audit opinion was qualified and the audit services provider was another audit network, namely BDO Romania, while in 2017 the opinion was unqualified, but the auditor type changed as well into a Romanian audit company. The main shareholder for Company A remains the Health Ministry (*rom. Ministerul Sănătății*), owning over 51% of the entity's shares.

Company B's compliance level decreased from 0.6667 in 2013 to 0.6296 in 2017, while both the auditor service provider and the audit opinion remained unchanged: Other audit network – BDO Romania and unqualified opinion. What changed in a significant manner was the shareholders' structure: in 2013, 68% of the entity was held by legal Romanian persons and the rest was owned by other shareholders, while in 2017 the percentage of legal Romanian persons increased at almost 88%, with a corresponding decrease in the other shareholders' category.

In both cases of companies A and B, even though the compliance level evolved differently, the assets' size increased in 2017 as compared to 2017, but the market capitalization slightly decreased by approximately 3%.

Entity C has the highest overall compliance index values and this can be correlated with the following factors: its' auditor is a Big 4 company and has received an unqualified opinion in both years. Total assets had an ascending trend from one period to another; the market capitalization saw a significant increase from 446.14 million RON in 2013 to 1.434 million RON in 2017. Shareholders' structure remained stable from one period to another, the majority being of foreign origin.

We assumed IFRS compliance can be explained by the institutional theory, namely by coercive and mimetic isomorphism. In the case of these three entities, pertaining to the same industry, we can see that they first applied IFRS in 2012, as a new requirement in Romania's regulation: that of using International Financial Reporting Standards in their individual accounts. Coercive isomorphism is relevant in this case, the regulation imposed acting like a constraint which forces an organization to adapt to the practices and processes present in the environment it operates. It is also explanatory for the case of company C, which is a subsidiary of a foreign parent entity, meaning that it must follow the same accounting policies or procedures and this could be extended to the financial information disclosure as well. However, mimetic isomorphism, which was based on the assumption that organizations will mimic behaviours of "successful or legitimate" models does not apply in this case. If in 2013 the distance between entities' compliance indexes was not significant, in 2017 company C is clearly delimited from the other two organizations in the same industry and this can be correlated with a sharp increase in the market capitalization and foreign ownership. As per the *agency theory*, varied economic interests can be met by IFRS application, by limiting the information asymmetry through a more transparent and qualitative financial disclosure (Samaha and Khlif, 2016; Nurunnabi, 2015). *Capital needs theory* suggests that IFRS could be used in order to satisfy financing necessities, thus the reporting being more transparent and the information disclosure more complex. In this case, internationality is an answer for the capital raising question, and company C's case seems to confirm this theory.

Both company A and company B are part of the premium category, while company C is a standard entity, subsidiary of an international company. However, this did not seem to be relevant, because despite not being in the first category, for the latter company the membership in a foreign business network was more important for the compliance level than the status it had on a local stock exchange.

7. Conclusions

The aim of this paper was to identify why the level of compliance varies across companies in pharmaceuticals industry in Romania.

We found that *IAS 18 Revenue* compliance levels were the highest for the three analysed companies, but when it comes to assets' impairment or intangible assets, the entities either do not disclose enough information in order to assess the compliance level (the case of *IAS 36 Impairment of assets*) or it is an unsatisfactory one, especially for a standard which is particularly relevant for the industry (*IAS 38 Intangible Assets*).

Coercive isomorphism applies regarding the IFRS adoption, meaning that when the standards became mandatory, all companies adopted them, claiming compliance, whilst mimetic isomorphism does not apply in our case study. Having in this group an entity which is a subsidiary of an international company (company C), thus having a higher compliance level did not influence the other two entities (Company A and Company C) to mimic its' practices and way of disclosing financial information.

We noticed that when the auditor type changed from a mid-tier one into a local audit firm, the audit opinion also changed from qualified to unqualified one, in the case of Company A. Also, we emphasize that assets levels did not necessarily influence compliance levels, because there could not be found a direct link between the two elements. However, market capitalization significantly increased for Company C, which is part of an international group, while in the case of the other two entities, mostly owned by Romanian legal persons it decreased. Moreover, for one entity the compliance index decreased as well (Company B), while for Company A the evolution of the compliance index values was not significant (increase of less than 2%).

Further, more recent research can be carried out and the sample of entities can be extended in order to be able to generalize the results and provide a deeper understanding of the compliance level in Romania and the way institutional theories work in an emerging economy context.

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PS13 EMERGING ISSUES

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Participatory budgeting in public sector entities: Framework development

Gabriela Lidia Tănase

Aurelia Ștefănescu

Ileana Cosmina Pitulice

Adoption and implementation of IPSASs in Cyprus: A lesson to learn

Amar Sayed Ahmad

Stock and flow in accounting. Balance sheet and income statement approaches

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Participatory budgeting in public sector entities - framework development

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Abstract: *Previous research on the participatory budgeting system in Romania reveals two particularly important aspects. First of all, citizens want active involvement in the process of public resource allocation and the adoption of a participatory budgeting system. Secondly, such a system is perceived by citizens as useful in efficiently allocating limited public resources, in line with citizens' priorities and needs, and a system that will allow for greater credibility and transparency in the public sector. Although in Romania participatory budgeting and active involvement of citizens is still a rare practice, citizens' desire to be heard does not, however, remain without an impact on the public system. Participatory practices begin to be used, although on a small scale. Being a new practice, difficult to achieve, it is necessary to establish the conceptual coordinates regarding the participatory budgeting practices in the public sector. In this context, the main objective of this paper is to establish the stages for the efficient implementation of the participatory budgeting process in the public sector, starting from the analysis of participatory practices in the international literature. We believe that the conceptualization of the participatory budgeting framework will support the adoption of an efficient participatory system and the active involvement of citizens in the allocation of public funds, and that at the same time it constitutes the basis for implementing legal regulations on the matter. Moreover, we believe that this conceptual framework may be useful to all countries wishing to implement a participatory budgeting system.*

Keywords: *Public sector, participatory budgeting, general framework, citizens, Romania.*

1. Introduction

The premises of this research are represented by the results of the study performed by Ștefănescu and Tănase (2017) concerning participatory budgeting in Romania, by the novelty of this concept in our country and generally, by the particularities of public sector.

The results of the study performed by Ştefănescu and Tănase (2017) regarding citizens' perception of participatory budgeting in the Romanian public sector highlighted the following: the respondents' support for adopting the participative budgeting system for the public sector and also, their active involvement within it; through involvement, they will influence the process of public resources' allocation and views of community members will be taken into account; the benefits of participatory budgeting, which are: streamlining public resources' allocation, involvement of citizens in budget decision

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making, increasing the credibility of the public sector, allocating public resources according to community's projects and needs, providing benefits both to community and public sector entities; the profile of participants in the participatory budgeting process: all citizens, persons over the age of 18, people who have graduated from specialized studies, respectively have experience in the field.

The second argument, complementary to the first is the conceptual pioneering of participatory budgeting in Romania. The implementation of participatory budgeting was only considered as a pilot project phase, in the period 2013-2015, at the level of Cluj-Napoca, initially in the Mănăștur neighbourhood, then expanding to the whole city. As to the profile of the participants, the project was addressed to young people aged between 14 and 35, as they contributed to the title of European Youth Capital for Cluj-Napoca (http://bp.primariaclujnapoca.ro/). The overall objectives of the pilot project on participatory budgeting in the Mănăştur neighbourhood were the following: reducing communication and collaboration barriers between citizens and representatives of local public administration; increasing the sustainability of public policies and investments at local community level; creating and promoting a participatory culture both among the citizens and at the institutional level in the local public administration (Report on the implementation of the participatory budgeting pilot project in the Mănăștur neighbourhood, Cluj-Napoca, 2013). Therefore, there has not been developed and there is currently no regulation on participatory budgeting in the public sector.

The third premise is represented by the particularities of the public sector, including: the complexity of the public sector; the need for public financial resources, significant in value; the dynamics of community members' needs; community's contributions to the formation of public budget resources; the unequal contribution of community members to the formation of public budget resources; the complexity and variety of the types of services offered; the fact that the beneficiaries of public services are not always the members of the community who participate in the formation of public budget resources; information asymmetry between public sector entities and community members.

In this context, the present paper has as main research objective the conceptual development of a general framework for implementing a participatory budgeting system for the public sector, starting from the existing practices presented in the international dedicated literature.

We consider that the development of a general framework of participatory budgeting in the public sector will add value to the public administration, from the following points of view: facilitating the adoption of participatory budgeting; reducing the informational asymmetry between the community and the public sector; increasing the degree of accuracy and transparency regarding the correlation: public resources - meeting the real needs of the community; awareness of the importance of community's involvement in allocating public resources according to its needs; increasing community trust in how regional or local public administrations use public resources.

The paper is structured in the following sections: the first section is devoted to the stage of knowledge about participatory budgeting in the public sector; the second includes research methodology; the third section presents the general framework of participatory budgeting in the public sector, while the last section is dedicated to the final conclusions of the research, the limits and future directions of the research.

2. Research methodology

In order to achieve the main objective of the research, namely the establishment of a conceptual framework for the implementation of an efficient participatory budgeting system, the present paper calls for qualitative research.

Beginning with the literature review, the key coordinates for the implementation of a participatory process of allocating the budgetary resources, respectively the stages that the public sector should consider in adopting such a system, are identified. The literature review reveals different practices, different systems, a lack of uniformity in the implementation of a participatory budgeting system in the public sector as well as a lack of detailed measures that public sector entities should implement for allocating efficiently resources based on the active involvement of citizens. In order to respond to these shortcomings, this research proposes, based on the information gathered from the dedicated literature, 11 steps for the implementation and evaluation of a public sector participatory budgeting system.

The research details the stages of the public sector participatory budgeting process, starting with the need for legal regulations that include key coordinates for substantiating such a process, ways of informing citizens and involving them in the allocation of budgetary resources, dissemination of information and communicating the results obtained as well as the assessment of the participatory system of resource allocation and applying sanctions if irregularities or abuses are found. Each step is detailed, including the main coordinates to be considered in order to make the participatory budgeting system more efficient.

The purpose of presenting these steps is to support the public sector in Romania and other countries in adopting and implementing a participatory budgeting system. From this point of view, the framework can be considered an adoption or implementation guide that sets out the main coordinates to be taken in consideration by public authorities. Moreover, we consider that the conceptual stages of the implementation of the participatory system of budget allocation also presents a prerequisite for the implementation of the legal regulations that will have to be drawn in the countries that will want to adopt a participatory budgeting system.

3. Literature review

The literature review reveals that participatory budgeting in the public sector presents different approaches. The participatory budgeting process within the public sector has expanded since its inception and has grown both in practical experience and in analytical studies in the literature.

Gonçalves (2014) believes that public spending is a tool for guaranteeing citizens' access to goods and services. Thus, their allocation process plays an essential role in the budgeting process. Under another vision, participatory budgeting is a democratic process in which citizens determine how public funds are used (Augsberger *et al.*, 2017).

Cohen (2012) brings to the fore the differences between participatory budgeting practices. Thus, participatory budgeting may allow the allocation of a separate amount of money from the main budget or a part of the general budget; it may allow citizens to choose projects from a predefined list or give them the opportunity to specify the projects they want; it may take place over a longer period of time or in a single session; it may involve a polling system directly, electronically or by post, etc.

Among the benefits that a participatory budgeting system should generate, can be enumerated: improving the governance system, increasing the decision-making power of citizens, improving the quality of democracy, improving the quality of life and increasing social justice (Boulding & Wampler, 2010). Participatory budgeting improves the flow of information between political decision-makers and citizens in their capacity as users of public services, allows the deliverance of goods and services that are closer to citizens' wishes and needs, and raises the responsibility of politicians (Gonçalves, 2014).

In order for the participatory budgeting system to be effective and to fulfil its role, it is necessary to establish a general framework of participatory budgeting, based on coherent, relevant, credible and integrated coordinates.

In Brazil, for example, the participatory budgeting process is the responsibility of the local council, which has to inform the public and organize the sessions, as well as to provide all the technical information needed for the participants (Gonçalves, 2014). The participatory process starts by organizing local assemblies (in representative neighbourhoods), where participation of all citizens is allowed. Within them, local needs, local preferences for investment projects are discussed, and citizens' representatives (counsellors and delegates) are elected. They participate in meetings coordinated by the municipality, where final proposals for investment priorities are set out, which are then submitted to the executive and participatory council. After approving the budget, citizens' representatives are responsible for overseeing the execution, reporting on issues that have arisen.

Augsberger *et al.* (2017) considers among the key phases of participatory budgeting: pre-planning, collecting ideas, designing projects, and voting.

Gomez *et al.* (2013) presents as common stages of participatory budgeting the following: selection of participants, selection of representatives by participants, use of questionnaires, preparation of documents on problems and results of the process, informing participants, structuring the problems (establishing the criteria for selecting proposals, with prospect projects and costs associated, difficulties, etc.), setting the preferences of the participants, the debate, negotiation, arbitration and voting. In addition to these stages, participatory budgeting must be based on a set of clearly defined principles and rules that support the participation of all categories of citizens and their real involvement in the decision-making process and the allocation of public funds.

The following elements are useful in designing an efficient participatory budgeting system: collecting relevant information from citizens; authorities supply relevant and comprehensible information for citizens; maximizing information flow; maximizing the number of participants and involving diverse groups in the decision-making process; maximizing transparency (to increase the trustworthiness of public authorities); maximizing the degree of representation to include all points of view; maximizing objectivity/fairness in the allocation of public funds, without discrimination and minimizing the duration of the process, in order to limit the effort of citizens and increase the participation rate (Gomez *et al.*, 2013).

To accomplish the objective, Kamrowska-Zaluska (2016) proposes the following co-ordinates of participatory budgeting: giving citizens the opportunity to submit proposals; establishing a high level of accuracy of project prices; organizing public debates; giving a reasoned rejection of projects by public authorities; the selection of projects by citizens, the participation in the vote of citizens who have this right (entitled residents) and the implementation of selected projects.

According to the World Bank Workshop, participatory budgeting phases should include: local meetings, participatory budgeting committee activities, and approval for implementation (http://web.worldbank.org/archive/website01337/WEB/0__CO-82.HTM-The Participatory Budget: Concept and Practices). Meetings at the local level should last for 2 months, during which there should be developed campaigns to promote the participatory budgeting process, citizens' information and training sessions, public information on participatory budgeting rules and local projects in progress, discussions with citizens on investment priorities as well as the selection of those to be implemented. As a last step, this stage includes electing at local level the representatives for the participatory budgeting committee. Two months will be allocated to the activities of the participatory budgeting committee. In the view of the World Bank, this committee should be equally composed of citizens and representatives of the local public authority. Within this committee, the investment priorities, the budgetary capacities of the local authorities and the current investments will be presented and analysed. Within the next two months, local public institutions involved in the participatory budgeting process analyse both technical and financial aspects of the proposals, prioritize and discuss them with municipal council members, and allocate budget resources according to the prioritization, correlating the budget with the decisions adopted. The final stage is to approve the budget proposal by the participatory budgeting committee, followed by the municipal council approval. This approval implies a strong participation of citizens. The final step is to implement the approved budget with its monitoring by citizens and representatives, together with discussions on possible changes needed in the budgeting process.

But the difficulty of adopting and implementing a participatory budgeting system is not just laying down essential steps and principles, but putting them into practice. Thus, although participatory budgeting involves collecting relevant information from citizens, this can be a difficult phase.

Participatory budgeting requires active citizens. This involves forming people as responsible citizens who know their rights and are interested in participating in the decision-making process. McCowan (2006) believes that simply creating structures to facilitate participation is insufficient, as people are accustomed to being excluded and they need to be educated to participate effectively. Education is also a right that must be guaranteed to all citizens, so it is a part of the concept of citizenship, a mean that supports people in exercising their citizenship rights in a more efficient manner. Thus, citizenship is approached as a form of education.

In Pelotas city, in Brazil, McCowan (2006) shows that in participatory budgeting the main focus is on active political participation as a right of citizens and a mean of achieving social justice for all and a critical, independent attitude towards authorities is encouraged, instead of promoting allegiance to the state. Thus, there is a need to create a participatory culture based on rights, equality and freedom of expression, in which citizens perceive participation both as a right and as an obligation to improve the public system.

Gomez *et al.* (2016) discuss the difficulty of obtaining relevant information for participatory budgeting from the citizens, due to the existence of barriers such as lack of a clear link for citizens between their involvement and the results, complexity of the language and techniques of the budgeting process, the lack of time for participatory budgeting. This leads to other important aspects that should be considered in designing a participatory budgeting system. First, there must be a real participation and an effective cooperation between citizens and public representatives. Moreover, representatives of the public authority must be willing to share decision-making power and to explain the essentials to the citizens, providing them with all necessary and relevant decision making information.

Kuruppu *et al.* (2016) addresses the failure of participatory budgeting system in Sri Lanka and refers to the fact that it can generate the monopolization of power and exercising domination.

Therefore, we consider that a first step, and perhaps the most important for establishing an effective participatory budgeting process in public institutions is represented by the real empowerment of citizens and by the breaking down of communication barriers and status between civil servants and citizens. Another critical issue is the need for granting a feedback to the citizens in order to maintain relationships based on trust and to evidence the participation-effect relationship. Last but not least, the time necessary for participatory budgeting is relevant. Citizens do not have an unlimited time to attend meetings. It is therefore recommended that the participatory process is not lengthy. In supporting this idea, a useful tool in participatory budgeting process is the information and communications technology, which ensures wider, simpler and more transparent participation of citizens in decision-making process (Gomez *et al.*, 2016). Information and communications technology can be used to determine, for example, an online voting system and for keeping citizens informed. This will also allow the involvement of a greater number of citizens in the decision making process.

Citizens' involvement in the participatory budgeting process raises a series of question regarding the category they should belong to, namely: Who should be involved? All citizens who want to? Only adults? The taxpayers? All citizens? Young people and children should be involved?

In terms of the categories of persons included in this system, the participatory budgeting is done mainly by involving adult population (Augsberger *et al.*, 2017). However, the authors noted that, in recent years, studies have begun to focus on the benefits of youth involvement in government decision making, although there aren't too many empirical studies related to their inclusion in participatory budgeting system. The argument for involving young people in political and social decisions is supported by the above mentioned authors in respect of three philosophies: young people have the right to participate as citizens of a democratic state; their involvement in decisions that affect their lives is a model of good policies and practices; by engaging and empowering youth in decision-making decision, they will become active citizenship in adulthood.

Augsberger *et al.* (2017) analyses the first participatory budgeting program led by young people in the United States, conducted in three stages: collection of ideas (1) development of proposals (2) and voting (3).

(1) Collecting ideas was made by young people in the council, responsible for educating young people about participatory budgeting process and for encouraging them in formulating ideas to be voted. In this respect, they visited community centres, residential organizations and posted on social media (Facebook, Twitter and Instagram), talked to friends, colleagues, relatives, attended meetings and community events, visited schools etc. and encouraged citizens to come up with proposals and ideas for the problems they face.

(2) Development of proposals for voting was based on ideas collected. Then, in stage (3) the voting of the projects selected for the final stage (each with a cost-associated) by young people aged between 12 and 25 years. A very important thing to be mentioned is that young people were supported and guided in all three stages by hall staff. Therefore, the authors consider it important that in the participatory budgeting process, young people should achieve a partnership with adults at every stage.

Although the involvement of young people aged between 12 and 25 years in the participatory budgeting in the public sector can be beneficial, it is also problematic. As Augsberger *et al.* (2017) mentioned, the main difficulties include perceptions of adults over young people (who are often underestimated) and their reluctance to share their power.

To Adu-Gyamfi (2013), children and young people should be involved in the participatory budgeting in the public sector, according to children's rights. However, although the involvement of children and young people in the participatory process is desirable, the power they receive is not concretely defined. Adu-Gyamfi (2013) shows from literature review, the forms of children's participation. A first example is based on eight levels: manipulation (when children are involved in issues they do not understand); use of children (decoration) to promote causes that they do not understand; the apparent granting of an opportunity to formulate their own views (tokenism); children are assigned tasks and are informed (assigned but informed); children are consulted and informed (consulted and informed), their views being taken seriously; projects initiated by adults, in which decisions are taken together with children (adult initiated, shared decisions with children); projects initiated and run by children (child initiated and directed); projects initiated by children, in which decisions are taken together with adults (child initiated, shared decisions with adults).

A second model in dedicated literature is based on five levels: children are listened only if they take the initiative to express their views; children are supported in expressing opinions by adults; children's views are taken into account when possible and when not accounting for them, they will receive an argument for this; children are involved in decision making process, going over the role of consultants; children share power and responsibility regarding decision making process. Adu-Gyamfi (2013) believes that success of children participation depends on adults' role that can facilitate this process.

Another difficulty of participatory budgeting refers to the level of resources that can be allocated and to the quantification of the impact of participation. Analysis undertaken by Boulding & Wampler (2010) over 220 cities in Brazil using participatory budgeting system reveals an allocation slightly higher to health and education programs and the existence of limited evidence that these reallocations would have a measurable impact. Moreover, the authors bring up another issue often ignored in determining the effects of government programs on the welfare of citizens, namely, the level of resources available for investment in new programs, which can sometimes be too small to solve important issues as poverty and inequality. Thus, the authors believe that the simple improvement of citizens' access to the governing system in the absence of additional resources, will not lead to improved services delivered to society and its citizens, advocating in this context for the improvement of the system of tax collection and other ways to increase revenue or public funds.

The research shows that from a conceptual perspective, participatory budgeting in the public sector is beneficial to the community, but development and implementation of a participatory budgeting process proves to be difficult.

4. General framework for participatory budgeting in public sector

Given the conceptual issues to participatory budgeting, the existence of a still limited approach to participatory budgeting in the Romanian public sector, both at the conceptual level and in the practice field, we propose a general framework, applicable to any public sector. The general framework of participatory budgeting is based on the following coordinates:

a. Regulation of the participatory budgeting system;
b. Promotion of the participatory budgeting process and information of citizens;
c. Involvement of all citizens in the participatory process by various methods.
d. Gathering data regarding citizens' wishes and drafting project proposals.
e. Ensuring transparency by publishing information on project proposals.
f. Voting of project proposals.
g. Ensuring transparency by publishing information on funded projects.
h. Implementation of project proposals.
i. Ensuring transparency by publishing information on projects' implementation.
j. Organizing regular meetings to discuss the implementation of projects.
k. Checking the participatory budgeting system, its efficiency and the quality of its implementation.

a) Regulation of the participatory budgeting system

This stage involves establishing a legal framework to regulate the participatory budgeting process and that includes defining elements such as: definition of participatory budgeting, specific terms, stages of such a system and their rules, ways of involving citizens, territorial representatives for the implementation of the participatory budgeting system, the responsible persons at the level of public sector entities, the maximum level of the resources allocated through the participatory budgeting system, the control and evaluation procedures, rules ensuring the guarantee of the participation of all citizens, the periods of the participatory budgeting works, the sanctions to be applied if the legal provisions are not respected or if there are abuses and other key elements for formulating a general framework. We consider it essential that this legislative framework also includes elements such as sanctions provided for civil servants in case of obstruction of the participatory budgetary system, the methods of control and supervision of the participatory system, as well as the ways of appeal for the citizens whose right to participation has been violated.

The legal framework must be clear, concise and understandable so that it can be intelligible to all citizens who wish to engage in participative governance system, regardless of education or knowledge. It must be subject to approval by both the governing bodies and the citizens. We believe that this step should take place before the adoption of a participatory budgeting system in Romania.

b) Promotion of the participatory budgeting process and information of citizens

This second stage aims to educate and inform people about the periods and methods of participation.

Participatory budgeting system must be based primarily on the creation of a participatory culture in the population. Citizens must get used to the participatory budgeting process and they have to perceive participation as a right and a civic obligation, designed to improve the public system and living conditions. For this purpose, it is necessary to educate population through information and communication. This can be done through schools, media, social media, etc.

Also, before initiating the participatory budgeting process there must be a public informing campaign to ensure citizens' participation in a considerably large number. Again, it is of high importance to use various informational channels to reach all citizens (e.g. information in periodicals or newspapers for older audience, information through radio/TV for middle-aged citizens and informing through social media like Facebook, Twitter, etc. for young citizens). We consider as necessary to post information on websites of public institutions that organize it. Thus, this stage envisages coverage of participatory governance system through mass media (newspapers, TV, radio), websites and social networks, websites of public authorities, posters, banners, etc.

Elements of advertising and information should include contacts that people can use to access additional information and to understand the participatory process steps and rules for the allocation of budgetary resources. It can be considered the establishment of a phone line and an online contact system through which people can ask questions and obtain information. The information provided to citizens must be clear, concise and intelligible, drafted in plain language, easy to understand and active participation of citizens must be presented as both a right and a responsibility. This step must take place at least two months before the beginning of the implementation of the participatory system.

c) Involvement of all citizens in the participatory process by various methods

This stage involves carrying out activities enabling citizens to express their views on how public resources should be allocated. To achieve this phase, the following aspects will be considered: informing citizens about the real level of resources that will be available for allocation in participatory budgeting system; the resources available for allocation in participatory budgeting system should be large enough to allow the implementation of important projects for citizens; informing citizens on the proposed allocation of budgetary resources by local authorities; enabling citizens to express their opinions on the allocation of budgetary resources by providing them the opportunity to vote for one of the authorities' proposals or to formulate new proposals; the right to express their opinions should be granted to all categories of citizens regardless of age, sex, origin, nationality, religion, political affiliation, etc.; compliance with the non-discrimination criterion, both in terms of citizens' participation, and the allocation of resources; granting the right to express their opinions through: face-to-face meetings, a voting system (physical and online), and also an online system for opinion formulation, etc.; electing citizens' representatives to maintain contact with public authorities.

All citizens should have access to public meetings. Within these meetings, citizens must be able to express via a written or an online form (for centralization and to ensure taking into account the opinion of all those present as they may not have all the occasion to speak) and through discussions and debates on the most efficient allocation of resources. At these meetings, at least one representative of public authority is required (with duties stipulated in the job description) to manage the debates, to record citizens' opinions and validate the session. In opening the session, the representative of the public authority will have to mention the existing budgetary sources, default allocations and the funds allocated for participatory budgeting. During these meetings, citizens will have the chance to vote for representatives that will have to come to work with the public institutions and their representatives in carrying out the next steps. The number of citizens' representatives shall be determined according to the number of people registered in the public authority area.

At this stage four aspects are to be considered. First, all categories of citizens: women, men, young people, elderly, regardless of religion, gender, nationality or other criteria will be included in the participatory process. The participatory budgeting process will be non-discriminatory both in terms of citizen participation and allocation of resources. Secondly, in order to maximize citizens' participation, the participatory budgeting system must also provide the online opportunity to express an opinion on the allocation of resources, based on the same form that is filled in by the participants in the meeting. Thirdly, for the efficiency of the process and for the benefit of citizens, the participatory system does not have to last for a very long time. Finally, in order for this process to be effective, it requires effective, permanent communication, based on respect and understanding between the public sector entities' representatives and the citizens. Moreover, public representatives should have the duty to explain and provide information to citizens when appropriate, in a clear, understandable and objective manner. This stage should take about one month to collect the proposals.

d) Gathering data regarding citizens' wishes and drafting project proposals

After the end of the ideas' collection period, they will be centralized and analysed by public representatives and citizens' representatives (elected by vote in the previous stage), and feasible options will be selected. The project proposals to be rejected will be centralized and the objective reasons for rejection will be mentioned for each one of them. For the selected projects, a project proposal will be drawn up, which will necessarily mention the estimated implementation costs with the highest degree of accuracy. This stage will probably be the longest phase of the participatory budgeting process due to the difficulty of developing feasible project proposals and estimating related costs. In terms of its duration, this phase should take about two months after the citizens' proposals were collected.

e) Ensuring transparency by publishing information on project proposals

This stage is mainly concerned with presenting to citizens, through online publishing, the project proposals both the accepted and the rejected ones (with the argument behind their elimination). Once the project proposals have been elaborated, they will be made public in order to be accessible for consultation with citizens. We also consider it necessary at this stage a beforehand informing of citizens, through various means of communication. Another key element is the publication of rejected ideas and the reasons behind these decisions to ensure the transparency and objectivity of the participatory system. In addition to the information on project proposals, it is necessary to provide citizens with the online publication of the period and voting procedures for project proposals. It will allow citizens enough time to access the information and become familiar with the proposed projects before starting the voting process. This stage should take about a month.

f) Voting of project proposals

At this stage, on the dates set above, the citizens will vote on proposed projects. Voting will be based on a personal numerical code to avoid multiple votes or any kind of fraud. Voting will take place both online and at the public sector entities' offices for people who cannot access the online environment (e.g. older people, people in rural areas, etc.). Also at this stage the centralization of votes has to be made and the winning projects have to be established. This stage should take about a month.

g) Ensuring transparency by publishing information on funded projects

This stage takes place after the completion of the voting process and ensures for the online publication of the information on the winning projects (according to the voters' preferences expressed and the available funds), projects that are to be implemented and the results of the votes (how many citizens voted, how many votes received each proposal, etc.).

It is recommended at this stage to have sessions where citizens can express their opinions and possible dissatisfaction, and where the process can be explained to them in detail. The citizens' dissatisfaction should be clarified by authority's representatives. It is also recommended to set up a telephone line and an online contact system through which citizens can be able to express their possible dissatisfaction and through which they can get clarifications from the responsible officials appointed by the public authorities. This can ensure the transparency and trust of citizens in the public system. This stage must take place immediately after the voting process is completed and it should last for about 1 month.

h) Implementation of project proposals

This stage is about implementing the projects and allocating the public funds according to the vote expressed by the citizens. Winning proposals will be implemented by public sector entities that are responsible for the funds allocated, with the aim of continuing to work with citizens' representatives. The length of this phase may vary, depending on the complexity of the projects implemented.

i) Ensuring transparency by publishing information on projects' implementation

Under this issue, public authorities have to consider: the regular online information of the citizens on the implemented, in process or completed projects; providing information on the state of implementation of projects selected by citizens; the publication of any relevant information on possible problems, necessary delays, etc. Information will be published online.

This stage allows citizens to track the impact or influence of their active participation, and to quantify the impact of their involvement. Informing citizens will be carried out periodically throughout the implementation of projects targeting the allocation of funds through the participatory budgeting system.

j) Organizing regular meetings to discuss the implementation of projects

In order to ensure the transparency and trust of citizens in the public system, meetings with citizens and their representatives can be held regularly. Meetings will be announced online, in advance. Within these meetings, public authorities will report to citizens on the progress and state of implementation of the projects, and citizens will have the opportunity to express their views on the implementation procedures and the status of the projects or to bring to question the grievances they have. It is recommended for those who cannot participate in organized meetings the establishment of telephone lines and an online contact system through which citizens can express their possible dissatisfaction and opinions about the procedures of implementation and the status of the projects. This will allow citizens to assess or observe the impact of decisions they have taken, their outcome (cause-effect relationship), thus reducing the risk of dissatisfaction with the participatory process. This phase will be carried out periodically, throughout the implementation of projects, targeting the allocation of funds through the participatory system.

k) Checking the participatory budgeting system, its efficiency and the quality of its implementation

In order to avoid abuse of public authorities, lack of effective participation or manipulation of winning results and projects, it is necessary to carry out quality and efficiency checks of the participatory budgeting system, for the accountability of public sector entities. The responsible persons or departments held for achieving this stage will be established through the legal regulatory framework and they will report on the quality of the budgeting system. This report will be available to citizens and will be published online. Appropriate sanctions should be applied, as appropriate, according to the legislation established in the regulatory phase (Stage 1). This step will also aim at assessing citizens' satisfaction with participatory budgeting practices and collecting proposals to improve this system. The duration of this phase will be about two months after the completion of the projects implementing the allocation of funds through the participatory system.

5. Conclusions

The circumstances in which the concept of participatory budgeting is born and developed are based on the fact that public systems are confronted with limited resources that can be made available to citizens, and on the theory that citizens know better than public authorities what are their needs and priorities for allocating budget funds in order to improve the quality of life. Starting from the idea of active involvement of citizens in the allocation of public funds, participatory budgeting contributes to the efficient allocation of resources according to the citizens 'requirements, to the increase of the citizens' trust in the public authorities, to the improvement of the governance system and not only.

Research on the particular case of Romania reveals three important aspects. First of all, citizens want to be involved in the process of allocating budget funds and want the adoption and implementation of a participatory budgeting system. Secondly, they see this as a way to efficiently allocate limited public resources, according to their requirements. And last but not least, it is noted that in Romania, participatory budgeting is rarely encountered, in an incipient form and only at a low level.

The analysis of the dedicated literature suggests that although internationally there are countries implementing a participatory system for allocating resources to the public sector, the adopted practices are different and not very detailed.

Thus, given the importance of a participatory budgeting and the desire for uniformity and understanding of its implementation process, the present research aims to establish the main stages that an efficient participatory budgeting system within the public sector should follow. Thus, eleven stages of implementation are established, each of them having specific coordinates to be taken into account in order to make the process of active involvement of citizens in the allocation of public resources more efficient. The eleven stages start from the establishment of the legal regulations that will form the basis of the participatory budgeting process, continue with the education and information of the citizens, their involvement in the establishment of the projects to be financed from the public funds, the information on the implemented projects and finalizing with the evaluation of the participatory budgeting system and granting possible sanctions for non-compliance with the legal provisions on matter.

We believe that this conceptual framework will allow the standardization of participative budgeting practices, will support the development of legal regulations on the implementation of participatory budgeting systems, will act as a practical guide in the implementation of participatory practices of public funds allocation and will be useful to any country or public institution which will want to implement a participatory budgeting system.

The main limit of our research is the lack of practical implementation and testing of the proposed participatory budgeting framework. Under these circumstances, a future research direction will focus on the practical implementation and evaluation of the proposed steps in the allocation of public funds through the active participation of citizens in a public sector entity.

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Adoption and implementation of IPSASs in Cyprus: A lesson to learn

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Abstract: *The International Public Sector Accounting Standards (IPSAS) are the latest solution purported in raising accountability and transparency of public-sector drivers of economic growth. IPSASs are as well giving more precise judgments on financial reports and hence clear choices and effective decision making. There exist two types of approaches; the cash-based approach and the accrual-based approach. Cyprus is one of the countries that adopted a cash-based IPSAS approach instead of the accrual-based approach. Adopting IPSAS led to Cyprus government gaining trust from the citizens -who act as taxpayers- as well as creating a good image of resource allocation within the state from other countries that are yet to adopt IPSAS. The primary objective of the study is to identify the steps of adoption, the benefits and the challenges that Cyprus encountered in adoption and implementation. This acts as guidelines to the Lebanese government which is in the process of implementing the same. The research uses a quantitative research technique – where a survey of 200 accountants and stakeholders is preferred- as the method of collecting data which is used to examine the process of implementation and development of IPSAS in Cyprus. The research gives a general outlay of the IPSASs concept, the steps and finally the impacts of implementation of IPSAS in Cyprus. The survey results show the readiness and willingness of financial workers as well as classifying the participants in terms of their gender, age and opinions towards adopting IPSASs. The research findings outline the challenges that the Cyprus republic faced as well as the perception of the participants towards different approaches of IPSAS. A set of necessary recommendations are garnered in the conclusion part that if embraced will help other governments to implement IPSAS more easily.*

Keywords: *IPSASs; IPSAS implementation; financial workers; Cyprus; adoption of IPSASs.*

1. Introduction

According to the principles of agency theory, organizations dealing with funds and properties that can be equated to monetary forms are obliged to provide a proper account on how funds and properties are utilized (Pozzoli & Ranucci, 2013). The organization shareholders, stakeholders and the members of the public often call for higher levels of accountability and transparency in areas of fiscal spending (Kalulu, 2015). The study performed by the World Bank in 1992 found out that there is a strong relationship between the good governance and high level of performance, hence the need to ensure that appropriate accounting methods are deployed in organizations. The outcome of the study by the World Bank in 1992 led to the introduction of the International Public Sector Accounting Standards (IPSASs). The purpose of IPSASs

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was to improve the management and the control of resources in the public sector through appropriate reporting of financial statements (Pozzoli & Ranucci, 2013). Accountability and transparency are the key indicators that are foremost brought along by IPSAS and can be relied upon to maintain trust and honesty in handling public funds in both public and private organizations (Aliyu & Balaraba, 2014). The organization management often emphasizes the challenges pertaining to corruption, non-accountability and funds misappropriation.

The International Public Sector Accounting Standards Board (IPSASB) focuses on the accounting and financial reporting needs of national, regional and local governments, related governmental agencies, and the constituencies they serve. The International Public Sector Accounting Standards (IPSAS) are the latest solution purported in raising accountability and transparency of public-sector drivers of economic growth. IPSASs are as well giving more precise judgments on financial reports and hence clear choices and effective decision making. Cyprus is one of the countries that has adopted a cash-based IPSAS approach which focuses on the realization of revenues after they have been received and not earned.

Numerous legislations and strategies exist to ensure accountability and transparency in public funds utilization, as a result of IPSAS introduction, there has been a remarkable fall of cases filed against misappropriation of funds (Gourwinkel, 2016). Moreover, Cyprus is reported to exhibit low influx of remittance rates of less than 5% from various organizations agencies as estimated by the World Bank (Rogosic & Palos, 2017). Embezzlement of both public and private funds operations including the money laundering and cyber money thefts exponentially decreased in 2015 after the adoption of IPSAS in 2014. The rate at which the financial and operations activities of the Cyprus government organizations and private organizations are reported has shown a lot of improvement since then and hence IPSAS can be viewed as a legislative provision accredited to provide a transparent and accurate financial overview of governments and listed organizations across the globe by deploying accrual accounting as opposed to cash accounting.

The full adoption of IPSASs in the public sector has the potential of radically changing the accounting and financial reporting practices, hence the ability to eliminate corruption cases in the public sector (Majzoub & Aga, 2015).

Different counties have taken different approaches to adopt IPSASs in their financial systems. Some countries have wholly embraced the IPSASs provisions while other countries -such as Lebanon -have slightly modified the standards. As such, the level of success with the standards greatly varies from one country to another with other countries failing to realize the significance of the standards totally. The adoption of IPSASs has gained momentum across the world hence no country should be left out. The common goal while implementing IPSASs guidelines is to ensure transparency and accountability in government and private financial reporting (Baboojee, 2011). The guidelines are highly significant after the studies have indicated that IPSASs has the potential of drastically reducing the malpractices in accounting and financial reporting systems (Adamu & Ahmed, 2014).

Cyprus in the year 2014 opted to adopt and implement cash based IPSASs and forego the accrual-based IPSASs. This was led to the main beneficial factor that was prevalent in the economy at the time of adoption. The cash-based system initially considered as being more appropriate for the public sector, the emphasis was on compliance with rules and regulations. One of the results of this system is the budget out-turn report looked upon as a basic part of the usual financial statements in the public sector. Cyprus, therefore, considered Cash-based IPSAS in the formulation of its budget (van & Reichard, 2018).

However recently Cyprus is in the process of adopting the accrual-based standards considering the advantages of the same that surpasses the advantages of a cash-based accounting approach. Some of the advantages that Cyprus is considering are; under the accrual method, transactions are counted when the order is made, the item is delivered, or the services occur, regardless of when the money for them (receivables) is actually received or paid. In other words, income is counted when the sale occurs, and expenses are counted when are received the goods or services. The advantages and disadvantages of accrual basis accounting are the follow: accrual accounting measures current income more accurately than the cash method. This means that the balance sheet is a more accurate estimate of financial position (value). Accurate, current information makes it easier to predict future income and financial position (Sigit *et al.*, 2018)

However easy it may seem, Cyprus has faced a lot of challenges in the implementation of cash based IPSAS approach especially following public and institutional rigidity in the economy. In their report, Adamu & Ahmed (2014) suggest that while some countries in the Middle East and Eastern Mediterranean have adopted IPSAS, some local companies and private organizations are yet using methods of financial reporting that truly fits their needs and hence bringing rigidity to change.

This brings the objective of the study which will be to identify steps of adoption, the benefits and the challenges encountered in adoption and implementation of IPSASs to the Cyprus government. Cyprus has been chosen for this study as its information is readily available and also the political ties between Lebanon and Cyprus are well established. This adoption of cash based IPSASs will help Lebanon – which is in the process of implementation – to elicit lessons that will help the financial strategists in coming up with the best approach and steps that will not only be cost effective but also of maximal social benefit. The specific objectives will include to assess the impacts of implementation of IPSASs on accounting systems in Lebanon as a lesson from Cyprus and to determine the acceptability of staff to comply with the IPSASs requirements in managing accounting systems in Lebanon.

2. Literature review

The implementation of IPSASs in Asian countries including Lebanon is facing a lot of challenges. According to the report by Ryan, Guthrie & Day (2008), Lebanon is using the IPSASs system however in a much weaker form. Therefore, there is a need to strengthen the strategies put in place to monitor IPSASs implementation in Lebanon. The strategies can be improved through collaboration with the competent authorities such as the International Public Sector Accounting Standards Board (IPSASB) to train accountants and financial managers in Lebanon. The training will improve the efficiency of the staff using the IPSASs guidelines (Barton, 2009). Lebanese accountants have also been experiencing challenges with IPSASs implementation, such as difficulties in valuing particular asset types, incomplete or absence or inaccurate records to determine the opening balance and complex financial instruments. In order to reduce the corruption incidences and funds misappropriation in Lebanon, IPSASs was introduced as the functional unit for holistic reporting of all financial transactions and positions (Adejola, 2012).

Lebanon has been characterised largely by the banking sector, with just ten listed companies. This means that the economy is reliant on financial markets and good accounting practices. Cyprus adoption of IPSAS is a plus to the Lebanese government as it is in the process of adopting and implementing (Country Reports – Lebanon, 2018). The study, therefore, seeks to identify the steps, the benefits, and challenges of implementation of IPSASs in Cyprus. This will in return help the Lebanese government to elicit lessons that may help in the process of implementation. The major key things and their relation to Cyprus and financial workers are discussed below in their respective categories.

2.1. IPSAS concept

A tentative agreement was reached to deploy an initiated financial management reform programs that would attract foreign direct investments in multiple countries (Adejola, 2012). Adopting IPSAS as part of the broader reform programs was highly welcomed by most nations hence encouraging countries across the world to make financial statements concerning the adoption of standards based on cash IPSASs or the accrual IPSASs (Jayasinghe *et al.*, 2015). This was facilitated by the need for greater accountability and transparency in government institutions handling funds and resources was heightened by the global financial crisis which led to reduced resources available for both the government and private sector.

IPSAS are issued by the International Public Sector Accounting Standards Board (IPSASB) which is a non-dependent accounting organ of International Federation of Accountants. These standards conform to the International Financial Reporting Standards and are categorized by their two approaches. One is the cash-based IPSAS approach, which focuses on the balances of cash and the fluctuations. The second approach is an accrual based IPSAS which focuses on revenue recognition after it has been earned and not after it has been received (Baboojee, 2011). Cash or the accrual IPSASs may as well refer to accounting standards that are applied by state agencies, local government, and even national government.

IPSAS standards are widely used by intergovernmental organizations or institutions though they do not apply to government business enterprises. IPSAS aim to improve the quality of general purpose financial reporting by public sector entities, leading to better informed assessments of the resource allocation decisions made by governments, thereby increasing transparency and accountability and is based on the International Financial Reporting Standards that are issued by the International Accounting Standards Board (Rogosik & Palos, 2017).

Cyprus opted to adopt and implement cash based IPSASs and forego the accrual-based IPSASs. However recently Cyprus is in the process of adopting the accrual-based standards considering the advantages of the same that surpasses the advantages of a cash-based accounting approach ("The need for International Public Sector Accounting Standards - Accountants in Cyprus/Cyprus Accountants Portal", 2019).

2.2. Steps of adoption

The first step towards adoption is through creating public awareness to the accountants and the general public at large. Through that, the Cyprus government was able to gain support from the citizen who acted as the taxpayers and who needed some trust from the government. The government would convince the members of the public how the adoption of IPSAS would bring along accountability and transparency in financial reporting and hence inducing courage to the general public regarding adoption. The government as well made the accountants aware of the reporting changes which reduced mental rigidity and incorporate dynamicity in terms of their perceptions and actions (Varnava & Clarke, 2014).

Secondly, the government used public training to all workers in financial institutions and incorporated skills on how to work according to IPSAS standards. The government organized open seminars and conferences for all the workers and stakeholders in financial institutions to incorporate them with skills that will help them adapt to the changes in financial reporting at the short run and be able to progress effectively. The government would as well present the advantages of adopting IPSAS which gave the accountants and the stakeholders' confidence in the approach. Furthermore, a cash-based IPSAS was practically self-appealing as straight records of cash inflow and outflow was seen and hence giving confidence to the students (Varnava & Clarke, 2014).

Lastly, Cyprus allocated capital that will facilitate a shift from the already existing accounting approach to IPSAS based accounting standards. As a step towards the change, Cyprus made capital available to facilitate the shift towards an IPSASs guided economy. This was a major move as the capital facilitated major activities such as training which required major investments (Varnava & Clarke, 2014).

Some of the benefits and challenges of adoption are as discussed below.

2.2.1. Benefits of IPSAS adoption to Cyprus Government

The study conducted by Rogosik & Palos (2017) on the IPSASs implementation in European nations indicates that IPSASs adoption provides significant and common advantages. The key benefits of IPSASs pointed out by Sour (2012) include greater accountability and transparency, better decision making, improved decision making, and data consistency and application. The financial statements prepared using the IPSASs guidelines capture all income and expenditure as well as owns and owes hence the ability to track the movement of funds easily. Thus, it becomes easy to curb frauds and corruption cases (Argento *et al.*, 2009).

Karamanou (2017) suggests that IPSAS implementation leads to better decision making. IPSAS implementation in Cyprus made the country realize its financial positions and effects of policies such as high tax rates to the citizens. By knowing these financial positions of the economy, the investors are able to get equipped on the sectors of the economy that are more productive than the others as well as making good public decisions about some entities in the economy. The investors are as well informed on the perfect times when they should take risks and invest in the economy following observation of trends in the financial positions reported in different time intervals or periods (Criban and Nistor, 2016).

The adoption of IPSAS in Cyprus has led to improved professionalism of finance and accounting across the public sector. This adoption influences the capitalization of new entrants into the Cyprus accounting sectors by ensuring that the economy becomes a hotbed of vibrant accountant professionalism. Furthermore, more standardized processes are being used which enhance data analysis and make accounting a desirable career destination choice of Cyprus accountants (Albu, 2013).

Finally, IPSAS adoption in Cyprus has improved the country's International comparability. Speaking of one language in accounting has brought along international comparability in the public sectors as well as strengthening through uniformity. This has as well made the government look more stable through a good investment climate, job vacancies and recording of higher incomes (Josedilton *et al.*, 2015)

2.2.2 Challenges encountered in implementing IPSAS

The level of knowledge on the IPSASs guidelines differs across the public sector entities, the political class and the academicians accustomed to cash accounting principles. Adejola (2012) suggests that the degree of awareness of IPSAS varies across every jurisdiction. This causes some barriers as institutions and people who are yet to gain knowledge on IPSAS exhibit Institution and personal rigidity as they don't want to change to the current standards of accounting. Bringing such people and institutions into the light of IPSAS in Cyprus was a road map that required great devotion and time and hence challenging IPSAS implementation in the country.

Krambia & Zopiatis (2011) suggest that in order to implement IPSAS, all the stakeholders and workers in financial institutions need to have a knowledge base in the area. In Cyprus, by the time of implementation, not all workers had relevant skills regarding IPSAS. Government laying them off and employing new workers would not have been economically possible as that would be more cost intensive but rather, the government had to equip the existing ones with skills that will enable them to move as per the requirements of the IPSAS. This was not only time consuming but also cost intensive as such training was conducted across both private and public sectors at the cost of the government.

In conclusion, the challenges facing the implementation of IPSASs can be classified into stakeholder engagement challenges, legal and structural transformational challenges, change management issues, skills capacity, the cost of implementation, the technological and infrastructural challenges, implementation approaches adopted by the nations and the external supports as illustrated above. (Adamu & Ahmed, 2014).

3. Methodology

The study was performed in Cyprus among accountants and other financial stakeholders. A sample size of 200 participants was selected randomly-irrespective of the institution-but with a gender sensitivity of 50-50 selection among accountants and stakeholders practising in Cyprus. In this case, the stakeholder comprises any other person that is working with an accounting firm. The participants were obtained through the online filling of the questionnaire-with the help of a friend working as an accountant in Cyprus, who disseminated them to fellow workmates and stakeholders. The results were combined irrespective of the working status and without any incidences of biases. The sample size data was calculated using the following formula from a chi-square test to show the independence of IPSAS adoption and implementation in relation to gender and the results shown that there is no relationship of IPSAS implementation with gender.

$$x^2 = \sum \frac{(oij - eij)^2}{eij}$$

Where;
eij is an expected frequency;
oi is a marginal column frequency;
oj is a marginal row frequency;
N is the total sample size

The study assumed a cross-section quantitative study design where the primary data was collected using a Likert five scale semi-structured questionnaire. The five Likert Scales deployed in the questionnaire were strongly disagree (5), Disagree (4), Undecided (3), Agree (2) and strongly agree (1). The questionnaire used in the study was divided into three sections. Section one entailed pre-qualifying information to prove that the participants actually worked with financial institutions, section two composed demographic data about the study participant and their perceptions towards IPSASs and section three entailed queries on the use of IPSASs in Cyprus. The reason to use a questionnaire is that it covers a large sample at a very low cost.

However, the questionnaire is also disadvantageous in that it may have a low response rate, a situation whereby some of the respondents may not be willing to fill the questionnaires. Secondly, questionnaires may bring along uncontentious and dishonest replies where the target population may give wrong responses regarding the topic questions. Finally, the questionnaires lack personalization hence hidden agendas that may be expressed through facial gestures and expressions may not be simple to realize. However, in our case, the response from the questionnaire was obtained, sampled and recorded. The sample allows collecting response from a smaller group of accountants and stakeholders that truly represents the bigger part of the population working in Cyprus republic accounting sector. The primary data gathered was entered into and analysed using the Statistical Package for Social Science (SPSS). Descriptive statistics were used to analyse the data and a chi-square test applied.

As said earlier, data from 200 participants were collected from accountants and stakeholders who worked in or had a contribution in financial institutions in Cyprus. In this case, a financial institution may be regarded as a banking or any institution that provides services as intermediaries of financial markets. The data was first analysed in terms of gender, where males and female responses were grouped and tallied, then age, where age range of five years was used and finally the occupancy where the participants were grouped into two; the accountants, and other stakeholders. To ensure that the participation was not biased, the number of males was equated to the number of females for the study as shown in table 1 below. Classifying the respondents as per their ages gave the majority an age bracket of 30 to 35 years followed by 35 to 40 years as shown in table 2 below. Around 150 participants of the survey were accountants at any level in the financial institution which dictated to around 75% of the total while the rest 50 participants were stakeholders which stood at 25% as shown in table 3 below.

Table1. **Data classification as per the gender**

	Frequency	Valid Percentage	Cumulative Percentage
Female	100	50.0	50.0
Male	100	50.0	
Total	200	100.0	100.0

(*Source*: Author's own research)

Table 2. **Classification of respondents by their ages**

	Frequency	Valid Percentage	Cumulative Percentage
20-25 years	20	10.0	10.0
26-30 years	20	10.0	20.0
31-35 years	64	32.0	52.0
36- 40 years	48	24.0	76.0
41-45 years	24	12.0	88.0
46-50 years	16	8.0	96.0
51 years and above	8	4.0	
Total	200	100	100.0

(*Source*: Author's own research)

Table 3. **Classification as per occupancy**

Participants	Frequency	Valid Percentage	Cumulative Percentage
Accountants	150	75.0	75.0
Other Stakeholders	50	25.0	
Total	200	100.0	100.0

(*Source*: Author's own research)

4. Results and discussions

To test the familiarity of IPSAS in Cyprus, most of the respondents confirmed knowing the cash-based IPSASs. Only 3% of the total respondents were not able to tell what IPSAS was. The researchers classified them in the category of those who were mentally rigid and did not bother getting deeper into understanding the accounting standards as the sample size focused on the accounting sector and all the participants chosen were accountants and stakeholders. The results are as shown in table 4 below.

Table 4. **Number of respondents aware of International Public Sector Accounting Standards and their respective percentage proportions**

	Frequency	Valid percentage	Cumulative percentage
Valid			
Yes	194	97.0	97.0
No	6	3.0	
Total	200	100.0	100.0

(*Source*: Author's own research)

The research findings have indicated that the challenges facing the deployment of IPSASs in Cyprus included lack of comprehensive understanding of IPSASs requirements that applies in accounting practices. This includes its objective to improve the quality of general purpose financial reporting by public sector entities, leading to better informed assessments of the resource allocation decisions made by governments, thereby increasing transparency and accountability. Also, there is a lack of prior experience with the IPSASs and hence little knowledge on the same or knowledge in the hands of the few who may not stand to teach the whole state about the same, slow legal and structural transformation, difficulty in deciding on the implementation approach and finally high cost of IPSASs implementation and poor integration of the technology that challenges the flow of financial information (Rogosic & Palos, 2017).

The findings in tables 5 to 16 show that more than 50% of the respondents agree that IPSASs implementation is associated with high cost. The findings are in agreement with what was reported by Adamu & Ahmed (2014) that the resources required to roll out IPSASs fully are quite expensive. The results in the table as well shown that more than 70% of the respondents believe that there is an opportunity for staff training. Additionally, more than 75% believe that lack of training reduces confidence and willingness of people to adopt IPSAS principle. However, this does not give them an option as it is a countrywide move of adoption. 55% of the total respondents disagree with the notion that the public sector is flexible enough to adapt to changes required by the IPSAS implementation. 21% remain neutral while the rest agree that public sector is flexible to changes. Over 50% of the respondents believe that government structure, low level of technology, lack of complimentary technical factors and high costs are major challenges towards IPSASs implementation. On the other hand, just slightly above 30% of respondents believe that the benefits of implementation surpass the implementation costs. 41% decide to stay neutral on the notion that the government recognizes transparency and accountability. Over 50% of respondents say disagree that they have prior experience in using IPSAS and lack a comprehensive understanding of IPSAS requirements. Finally, 60% of the respondents suggest that there is no policy that supports IPSAS implementation while 28% decide to be neutral. Just 12% oppose that by denying the notion aforementioned.

Table 5. **Opportunities for staff training and recruitment in IPSAS**

	5 **F (%)**	4 **F (%)**	3 **F (%)**	2 **F (%)**	1 **F (%)**
There are opportunities for staff training and recruitment in IPSAS.	20 10.0	28 14.0	52 26.0	68 34.0	32 16.0

(*Source*: Author's own research)

Table 6. **Lack of IPSAS-related training reduces confidence and willingness to adopt IPSAS principles results**

	5 **F (%)**	4 **F (%)**	3 **F (%)**	2 **F (%)**	1 **F (%)**
The lack of IPSAS-related training reduces confidence and willingness to adopt IPSAS principles.	2 1.0	8 4.0	22 11.0	124 62.0	44 22.0

(*Source*: Author's own research)

Table 7. **Flexibility of the public sector to adapt to changes required by the IPSAS implementation.**

	5 **F (%)**	4 **F (%)**	3 **F (%)**	2 **F (%)**	1 **F (%)**
The public sector is flexible enough to adapt to changes required by the IPSAS implementation.	30 15.0	80 40.0	42 21.0	34 17.0	14 7.0

(*Source*: Author's own research)

Table 8. **Effect of fixed and hierarchal structure of government agencies on the IPSAS implementation standings**

	5 **F (%)**	4 **F (%)**	3 **F (%)**	2 **F (%)**	1 **F (%)**
The fixed and hierarchal structure of government agencies challenges the IPSAS implementation.	0 0.0	22 11.0	26 13.0	122 61.0	30 15.0

(*Source*: Author's own research)

Table 9. **Effect of poor integration of technology on the flow of financial information and the adoption of IPSAS**

	5 **F (%)**	4 **F (%)**	3 **F (%)**	2 **F (%)**	1 **F (%)**
Poor integration of technology challenges the flow of financial information and the adoption of IPSAS	0 0.0	48 24.0	28 14.0	82 41.0	42 21.0

(*Source*: Author's own research)

Table 10. **Supply of technical resources to adopt IPSAS**

	5 **F (%)**	4 **F (%)**	3 **F (%)**	2 **F (%)**	1 **F (%)**
My organization lacks technical resources to adopt IPSAS.	2 1.0	24 12.0	22 11.0	110 55.0	42 21.0

(*Source*: Author's own research)

Table 11. **Association between IPSAS implementation and high costs**

	5 **F (%)**	4 **F (%)**	3 **F (%)**	2 **F (%)**	1 **F (%)**
The IPSAS implementation is associated with high costs.	50 25.0	22 11.0	28 14.0	72 36.0	28 14.0

(*Source*: Author's own research)

Table 12. **Benefits and implementation costs associated with IPSAS**

	5 **F (%)**	4 **F (%)**	3 **F (%)**	2 **F (%)**	1 **F (%)**
The benefits associated with IPSAS overweigh implementation costs.	12 6.0	34 17.0	90 45.0	54 27.0	10 5.0

(*Source*: Author's own research)

Table 13. **Existence of policy supporting or promoting use of IPSAS**

	5 **F (%)**	4 **F (%)**	3 **F (%)**	2 **F (%)**	1 **F (%)**
There is no policy supporting or promoting the IPSAS use.	0 0.0	24 12.0	56 28.0	96 48.0	24 12.0

(*Source*: Author's own research)

Table 14. **Recognition by the government of the values of accountability and transparency**

	5 **F (%)**	4 **F (%)**	3 **F (%)**	2 **F (%)**	1 **F (%)**
The government recognizes the values of accountability and transparency.	30 15.0	52 26.0	82 41.0	20 10.0	16 8.0

(*Source*: Author's own research)

Table 15. **Prior experience of accountants in using IPSAS for creating financial statements**

	5 **F (%)**	4 **F (%)**	3 **F (%)**	2 **F (%)**	1 **F (%)**
I have prior experience in using IPSAS in creating financial statements.	48 24.0	90 45.0	12 6.0	36 18.0	14 7.0

(*Source*: Author's own research)

Table 16. **Comprehensive understanding of IPSAS requirements by accountants when applied to the accounting practice**

	5 **F (%)**	4 **F (%)**	3 **F (%)**	2 **F (%)**	1 **F (%)**
I lack a comprehensive understanding of IPSAS requirements when applied to the accounting practice.	20 10.0	58 29.0	28 14.0	74 37.0	20 10.0

(*Source*: Author's own research)

5. Conclusion

The study sought to find out the steps, the benefits, and challenges that Cyprus faced while adopting cash based IPSASs and the lessons that Lebanon can elicit from Cyprus as it is in the process of adopting the standards. The study revealed that there are two types of approaches which are the cash and accrual based approaches. Though all the approaches have their advantages and disadvantages, Cyprus adopted cash based IPSAS but is in the process of changing to accrual based IPSASs.

Adoption of IPSAS has been a major contribution to the growth of the Cyprus economy. This is a good inference to deduct for the Lebanese government. However, despite how easy it may seem, the research has outlined some of the major steps that the Lebanese government can use in the preparation of IPSAS adoption. These steps include high costs of transition as well as creating public awareness to avoid major complications in implementation. The Lebanese government, for example, can make the public be aware of IPSAS standards through introduction into the learning curriculum at high school or tertiary levels. This will not only ease the process of implementation but also prepare learners mentally such that things like personal and institutional rigidity are taken down.

However, despite the many advantages of IPSAS, the Lebanese government should be ready to face and overcome challenges that may affect implementation. This will be facilitated by laying down strategies that specifically favours the adoption of IPSASs. Such strategies include setting up cash reserves that will enhance the smooth flow of activities and also curb any niche that maybe along the way towards implementation.

The IPSASs guidelines should be incorporated as part of a training program for students undertaking accounting and finance courses in both colleges and universities. This will enhance understanding of the IPSASs concept and its significance and ability to embrace the guidelines.

Additionally, the government should set aside enough funds to support the implementation of the IPSASs in all financial organizations and government agencies in Lebanon as a way of relieving the organizations from the cost burdens that they might be incurred in the process of implementation.

Finally, the government should strengthen the auditing firms across Lebanon to ensure that they are complying with IPSASs provisions. Auditing organizations that fail to comply with IPSASs guidelines should be deregistered or suspended from operating in Lebanon and those already in operation, their licenses should not be renewed at whatever cost. Any malpractices that might be partaken by some of the organizations should be highly penalized before deregistration of those concerned organizations.

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Stock and flow in accounting. Balance sheet and income statement approaches

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Abstract: *This study examines the effectiveness of the discussion on balance sheet and income statement approaches. The following points were clarified through this examination: (1) Other conditions remaining constant, the method of profit calculation is the same in both approaches; (2) Both approaches converge on discussions on stock and not on stock or flow; (3) The two, balance sheet approach and fair value, and income statement approach and acquisition cost are not directly linked; (4) The balance sheet approach adopts the viewpoint of a company with assets and liabilities while the income statement approach adopts the investors' viewpoint, which is related to equity; and (5) From an information provision viewpoint, the derivation method can be adopted in either approach. Given these observations, a comprehensive consideration of individual issues using these approaches may further complicate the discussion. Therefore, this study highlights that there are problems with the two widely used terms.*

Keywords: *Stock; flow; balance sheet approach; income statement approach.*

1. Introduction

Although the terms "balance sheet approach" and "income statement approach" have been used in many previous studies since their use in FASB (1976), little attention has been paid to confirming the usefulness of using these terms. FASB (1976) considered numerous views that placed importance on assets and liabilities, as in the balance sheet approach, and numerous others that emphasized income and expense, as in the income statement approach. These might not have been academic jargons at that time. However, although these are not proven to derive first-best accounting standards, they are often considered benchmarks for discussions on accounting standards.

How do these terms, which appear in discussions on accounting standards in practice, contribute academically? Is it true that our accounting standards are balance sheet oriented? Specifically, is this a discussion as to which of the two, balance sheet and income statement, provides important information to users? In addition, these terms are sometimes used in conflict and sometimes related to discussions on the valuation of assets and liabilities, such as historical cost or fair value, and on the concept of earnings calculation, such as the matching concept that has fallen out of favour with the IASB (Zimmerman and Bloom, 2016). How meaningful is it to discuss the accounting issues associated with these approaches? In this study, we will examine how the process of reviewing two or more elements of the two approaches can affect accounting.

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We structure our argument as follows. In Section 1, we examine the general concepts of stock and flow and the accounting concepts of income and expense, applied on the former. Section 3 discusses the definitions of the balance sheet and income statement approaches and notes that there are no differences in their earnings calculations under certain conditions and that both approaches converge to a discussion on stock. In addition, we highlight that the balance sheet approach is intended to represent a corporate viewpoint while the income statement approach adopts the viewpoint of investors, as far as earnings calculations are concerned. Moreover, the balance sheet and fair value, and the income statement and historical cost are not immediately linked. Lastly, the bookkeeping inventory and derivation methods are also not directly related to these approaches. By examining concrete accounting treatments, we confirm the significance of the work so far in Section 4. The conclusions are presented in Section 5. In general, it is highlighted that combining two or more points under the two approaches used by several researchers can pose obstacles to accounting analysis.

2. Premise of discussion

2.1. General idea of stock and flow

To facilitate later discussions, we confirm the general concept of stock and flow before discussing them in reference to financial statements. Here, the amount of an object being observed at a specific point of time is defined as "stock," and the variation in stock within a period is defined as a "flow." Stock can be obtained by determining the object to be observed and specifying the point in time; on the other hand, flow can be computed as the variation in stock over a given period. While stock is relatively specific, flow is defined only in terms of variation. In this regard, although it may be possible to define flow just as "a variant" separately, there is nothing to support the existence of flow; hence, its definition is unlikely to have operability.

Note that the definition of flow depends on stock. Stock is the quantity at a point of time, which can be determined on its own. However, without confirming the stock, it is impossible to calculate the flow, which is the variation in stock. Of course, given a certain rule, such as a function of the change in stock, one could decide an arbitrary flow without observing the actual underlying stock. Therefore, it could be said that stock information is unnecessary in this situation. For example, if there is no uncertainty, the future trend would be obvious such that stock changes would be obvious; hence, calculating flows may not make sense. On the other hand, in the real world with its future uncertainties, it is impossible to specify a rule on the change in stock; hence, information about the flow explaining the change in stock becomes more important.

2.2. Concept of stock and flow in financial statements

How is the relationship between stock and flow understood in accounting? In financial statements, various stock measures including net assets, shareholders' equity, and cash equivalent are shown along with various flows such as comprehensive income, net income, and corresponding cash flows. For some key flows, financial statements such as comprehensive income, income, and cash flow statements, explain the process of computing flows.

In order to simplify the discussion, we consider only a balance sheet and income statement with a clean surplus relationship. Nevertheless, the conclusion of this review would be effective as an essential element when considering actual financial statements. Any issues that are not treated in this study could still be assumed to be inherently important.

The balance sheet specifies assets, liabilities, and capital wherein the profit (i.e., flow) basically exhibits how much the capital (i.e., stock) has changed. By comparing the capital at the beginning and at the end, we can calculate the profit itself as a figure. However, we cannot identify which type of activity earned that profit with these figures alone. Therefore, in addition to the balance sheet, we explain the profit calculation process by preparing an income statement that indicates the details of the flow. In this regard, the balance sheet and income statement play complementary roles and it is natural to regard this as increasing the usefulness of information provided. The question as to which financial statements are needed is not discussed here.

Is it possible to define income and expense first, and then use them to derive capital, i.e., to define flow and use it to compute stock thereafter, in accounting? For example, IFRS (2018) defines profit as the increase in economic benefits during the accounting period, in the form of inflows or increase in assets or decrease in liabilities that result in increased equity; expenses are defined as decreases in economic benefits during the accounting period in the form of outflows or depletion of assets or incurrence of liabilities that result in decreased equity (F 4.25). Income (expense) is said to be an increase (decrease) in equity excluding any capital transactions. Flow is defined and computed as a variation in stock, after the concept of stock itself has been defined. The concept of flow does not derive the concept of stock. Paton and Littleton (1940) also emphasize that the amount of the profit in excess of the capital can be distributed at the beginning of the year.

Given the definitions of income and expense above, defining the concept of capital must take precedence. Otherwise, “change in equity” cannot be defined, which implies that income and expense could not have been computed in the first place. At the same time, capital transactions cannot be defined; hence, we cannot divide flows into capital transactions and transactions for income and expenses. As such, we are unable to define income and expense. As in the previous discussion, even in accounting, flows are defined as variations in stock. Therefore, after defining capital, revenues and expenses are determined as variations in capital.

However, even though there is no problem in defining stock variations as flows, it may be argued that stocks are processed in order to calculate flows based on a given intent. Despite this and even in this case, there is no difference in defining the variation in stock as a flow. Such operations, which may be deemed ingenious accounting practices, might complicate the issue. This point will be discussed later.

3. Review of two approaches

3.1. Definition

According to FASB (1976), assets and liabilities are the key concepts in the balance sheet approach while income is viewed as the difference in capital excluding capital transactions over a given period (par. 34). On the other hand, in the income statement approach, income and expenses are the key concepts and the direct determinants of income (par. 39). It is not clearly indicated which approach is preferred by any accounting standard setting bodies, but many previous studies point out that current accounting standards tend to favour the balance sheet approach (Penman, 2007; Barker and Penman, 2017). For now, we confirm the academic implications of these terms by examining the various aspects discussed under the two approaches.

3.2. Method of profit calculation

Based on previous studies of the two approaches, their profit calculation methods are approximately the same. Excluding capital transactions, the balance sheet approach calculates profit as the difference in capital between the beginning and the end of the period specified. Meanwhile, in the income statement approach, profit is calculated by deducting expenses from income. Given a fixed balance sheet, income statement, and other conditions such as asset valuation, comparing the two definitions amounts to ascertaining whether or not profit is expense deducted from income in the balance sheet approach, and the difference between the beginning and end period capital in the income statement approach.

Assuming general bookkeeping and financial statements and as per the above discussion, the resulting profit computations using the two approaches are consistent. Specifically, end-of-term capital − beginning capital = profit, and revenue − expense = profit. Moreover, end-of-term capital − beginning capital = revenue − expenses. As a result, the change in capital and profit are consistent. Naturally, if one were to examine the two approaches under different conditions, such as the asset valuation method, the same results may not always be obtained. However, if other conditions remain unchanged and only the method of calculating profit is considered, the two results match. There is no point in discussing this issue at this point.

3.3. Order of definition and interpretation of capital

Although it is clear from the definition, it can be stated that the income statement approach emphasizes flow rather than stock. However, from the discussion in Section 3.2, the income and expense definitions depend on the definition of capital. Therefore, it should be noted that the income statement approach is based on stock as well. Regardless of the approach employed, eventually stock would be involved. However, the meaning of stock in the two approaches is not the same. The difference lies in whether stock is defined in terms of the difference between asset and liabilities or differences in capital. Specifically, this amounts to whether capital is defined as a difference between assets and liabilities after these have been determined, or whether assets and liabilities are determined after defining capital directly. While this concerns the order of the definitions, there are other issues as well.

In the balance sheet approach, it is natural to consider the definition and scope of assets and liabilities from the viewpoint of a company to be observed. After ascertaining the companies to be studied, their assets and liabilities are determined, and then, capital is defined in terms of the difference in the two. On the other hand, taking into account the previous argument, in the income statement approach, capital is directly defined to determine income and expenses. By ascribing meaning to the amount of the entrusted company's capital-related activities, we focus on investors. In this manner, in order to determine stock, its attributing entity must be clarified. The two approaches differ based on whether they are premised on companies to be observed or on investors. To say nothing of the discussion on non-controlling interest and employee stock options, these differences lead to differences in actual accounting practices, in particular, whether they are debt or capital.

However, while such differences might affect income and expense transactions, the impact on capital transactions is less obvious. Where there is an issue of share at discount, neither approach will evaluate capital at the fair share value. In the balance sheet approach, cash as an asset would prescribe the amount of capital; in the income statement approach, cash should also prescribe the amount of capital in terms of the entrusted capital. Indeed, in the case of the latter, there might be a view that paying attention to shareholders amounts to paying attention to the stock price associated with investment. However, this is a problem that conflicts with the entity concept whereby the principle is that accounts are kept for entities as opposed to the persons associated with those entities.

Indeed, in capital transactions, while the amount of highly abstract capital, such as contribution in kind, may be unclear, capital evaluation is based on asset valuation. Certainly, in the case of mergers and acquisitions etc., capital is sometimes evaluated based on the issued shares. The relationship between measurements of assets and capital in capital transactions is unclear. However, it seems natural to evaluate capital based on the amount of the assets invested. Moreover, evaluating capital on the basis of the issued share prices may be considered akin to cash contributions. In any case, these discussions may not be issues depending on which approach is adopted.

3.4. Evaluation of assets and liabilities

It is said that the balance sheet approach emphasizes the valuation of assets and liabilities while the income statement approach focuses on income and expenses; hence, such assessments are not considered important. Many previous studies, including Kusano (2012), point out that the balance sheet approach is based on fair value to evaluate assets and liabilities while the income statement approach is based on historical costs. Needless to say, assessment of assets and liabilities is one of the important problems in accounting. The problem here is whether to evaluate these assets and liabilities using the two approaches.

In the first place, if assets and liabilities are emphasized, will fair value be inevitably selected? Fair value is basically information from markets external to the company as well as from investors. While only companies can grasp the basic information on how much firms have sold the goods they purchase, does it mean that disclosing information outside the company in the financial statements emphasizes the valuation of assets and liabilities?

In addition, fair value basically only shows market equilibrium. As shown in Barker and Penman (2017), the fair value is likely to include uncertainties in assessing the economic value of the company. Therefore, there is the possibility of confusing investors with respect to assets intended for business investment. Since both companies and investors are investing under uncertainty, it is necessary to provide information on what is certain. In this regard, evaluation by historical costs does not immediately disregard the representation of such economic resources. It can be argued that acquisition cost is more advantageous in terms of showing the investment destination of the entrusted cash. Even though the balance sheet approach is defined using assets and liabilities, it does not immediately mean that the assets and liabilities are valued fairly. Moreover, note that, given a balance sheet and income statement, fair value considerations do not directly translate to paying little attention on income and expenses.

FASB (1976) says that certain measurements are not connected automatically to each approach (par. 47). Fair value using the balance sheet approach is concerned only with stocks while the income statement approach is concerned only with flows. This is because the realization basis and matching concept that we have not hitherto considered are requests for flow, and the balance sheet approach might not be interested in such a request. However, as per the discussion above, note that both approaches converge to a stock concept while both have flows. This realization is based on how investment risks are viewed, regardless of which approach is taken as the premise. Assets can be evaluated at fair value or at historical costs. Discussing the evaluation of assets and liabilities, which do not correspond directly to the two approaches here, may be confusing.

3.5. Inventory and derivation methods

In Japan, the income statement approach may sometimes be expressed in terms of measuring the flow of profit through the time allocation of cash flows (Saito, 2009). In Accounting Principles for Business Enterprises (Kigyokaikeigensoku) in Japan, all income and expenses are measured based on cash flows. Conceptually, first, the cash flow for that period is calculated, then the figures are modified from the viewpoint of profit calculation, and as a result the stock is processed to produce the modified flow. In allocating such cash flows, since account books are indispensable as they are necessary to record changes in cash, the income statement approach is related to the derivation method. At least the figures are recorded in the account books; hence, it is unlikely to be possible by the inventory method.

On the other hand, if the balance sheet approach is primarily concerned with stocks such as assets, there may not be a direct reason to focus on cash flows. However, we cannot deny that the balance sheet approach may be consistent with the inventory method, although there are other options. Even with the derivation method, it is possible to manage the information associated with assets at the end of the period. In the first place, without tracking flows by account books, companies cannot maintain information on the transactions made during the period nor explain changes in stock; as such, the information contents would be poor. As confirmed earlier, only in a situation where changes in stock can be predicted, the stock information is important and flow information is unimportant. However, such a situation is unrealistic. We cannot accurately predict the future. There would be no problem if there were a clear relationship such as in the case of the derivation method for the income statement approach or the inventory method for the balance sheet approach; however, there is no logic to guarantee that. Hence, there is no point in discussing the issue here based on each approach.

4. Specific accounting treatments

Barker and Penman (2017) contend that terms such as balance sheet approach and income statement approach are confusing and can be made conceptually more comprehensive by a mixture of the two approaches (p. 32). We confirm the considerations made so far through some concrete accounting processes.

We consider the depreciation of fixed assets, which is a typical cost allocation procedure. This may be considered compatible with the income statement approach and may possibly contradict the definition of flow as a difference in stock. In the depreciation procedure, first, the stock after the estimated period is deducted from the original stock quantum to calculate the total cost of the flow. Next, annual flow is derived as an expense. Here, flow is calculated as the difference in stocks and the cost allocation method simultaneously determines the stock evaluation. Depreciation does not evaluate the stock at fair value directly, which is an annual stock valuation to make a stable allocation as initially planned. Therefore, this does not contradict the definition of flow as the difference in stock.

The process of depreciation intuitively differs from the impairment process. It may be intuitive to make the impairment procedure correspond to the balance sheet approach from the viewpoint of asset valuation and to the income statement approach from the viewpoint of cost allocation, and then discuss them in a confrontational manner. However, although we focus on the original historical cost and the estimated residual value in order to stably allocate costs, we have calculated the flow based on the stock even in the depreciation procedure. Furthermore, even in the impairment process, flow naturally arises from an evaluation of stock. Although this differs in terms of whether the evaluation is directly at fair value or dependent on the depreciation procedure, in either case, there is no difference in that the difference in stock is a flow. There are important arguments on how to depreciate, whether to depreciate, and whether to handle all impairments. However, there is not much significance to discussing these under the two approaches, given other considerations.

Next, we consider the treatment of allowance. This is basically recognized as the future uncertain negative asset or liability attributable to events prior to the current period. The discussion on it can be understood as modifying the stock to recognize the flow. The examination of the details of recognition and measurement is beyond the scope of this discussion, but there are issues such as whether the allowance at least shows economic depreciation or is merely fictitious accounting. However, given the articulation of the balance sheet and the income statement, we can explain the allowance from a liability perspective, depending on the above definition whereby a reduction in stock will result in a flow.

For example, we consider the allowance for doubtful accounts. Generally, if we recognize income before collecting cash, we cannot strictly calculate profit released from risk because there is the risk of collection in trade receivables. Therefore, provision of allowance as an expense is recorded to deduct that risk from profit. However, stocks change even if they are focused on flows. Of course, there is no definitive legal obligation at the end of the period. However, stocks are depreciated in that some receivables are not expected to be collected. Therefore, regardless of which approach we rely on, flow is calculated as a difference in stock. Individual issues such as whether to emphasize flow or stock should be discussed on a case by case basis. There is not much significance to discussing these issues under the two approaches, which also include other issues.

Deferred and accrued accounts, such as prepaid expenses, unearned revenue, accrued expenses, and accrued income, are also often treated as accounting for flow calculations. In the accounting cycle, these items appear when modifying income and expenses during the period through closing adjustments. In this sense, it might be said that it constitutes an accounting process for calculating a flow. However, as previously discussed, the essence of that is the correction of the stock of assets, liabilities, or capital. Even in the evaluation of stocks at fair value or to calculate the intended flow, there is no contradiction in the definition of the difference in stock as a flow.

Whether deferred and accrued accounts meet the definition of assets or liabilities is an important issue to be discussed. However, it is not inevitable to do that based on a discussion of the two approaches. FASB (1976) points out that realization principles and matching concept can be a means of recognizing changes in assets and liabilities under the balance sheet approach, and recognition of changes in assets and liabilities can be a means of recognizing income or a matching expense with income under the income statement approach (par. 46).

5. Conclusions

This study examined the effectiveness of the discussion on balance sheet and income statement approaches on the premise of clean surplus, thereby yielding the following points. For each approach, it was discussed whether the profit is calculated as the difference between the capital at the beginning and the end or by deducting expenses from income. However, other conditions remaining constant, the result remained the same across both approaches. It is also revealed that income and expenses account for changes in capital, and the discussion of the two approaches converges to a discussion of stock and not either stock or flow.

Moreover, it is highlighted that the balance sheet approach and fair value, and the income statement approach and the acquisition cost are not directly linked, and that it is unnecessary to discuss the stock valuation under the two approaches. In addition, we highlighted that the balance sheet approach adopts the viewpoint of the companies owning assets and liabilities while the income statement approach adopts the viewpoint of investors associated with these companies. Furthermore, in terms of information provision, we pointed out that the derivation method can be adopted in either approach.

Based on these studies, the significance of a comprehensive discussion of multiple issues was questioned under the two approaches. Under each approach, if a multidimensional solution is uniquely derived, these are valid concepts in accounting, but the results of the examination differed. In the first place, there is no proof that the rationale of either of the two approaches is the optimal solution or the final goal. Nevertheless, considering individual issues comprehensively using these approaches can further complicate the discussion. In accounting science, it is meaningful to carefully examine individual subjects rather than simply conflicting ideas using these approaches.

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PS14 CSR

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Multidisciplinary approach of sustainable performance – financial performance nexus. The perspective of energy industry corporations

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Multidisciplinary approach of sustainable performance – financial performance nexus. The perspective of energy industry corporations

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Abstract: *This study relies on previous research mixed results on corporate performance, using a multidisciplinary energy-economics approach. Economics-specific research methods are combined with energy specific research methods to enrich and explain the associations between corporate sustainable performance and corporate financial performance from a bidirectional perspective. Specifically, the research hypothesis is constructed to integrate previous unidirectional associations based on Granger causality tests. Environmental, social and governance (ESG) facet of corporate performance is connected to the shareholders-oriented performance measured by financial accounting and market ratios. The limit of sample's heterogeneity is leveraged by the discretionary focus on a specific sustainability-sensitive industry: the energy sector. The study contributes to current knowledge by including into research a multidimensional score reflecting the sustainability-oriented policies of the companies around the world, as well as advanced discussion on controversies-focused measure of corporate sustainable performance. The results show a feedback relationship between return on equity and the aggregated ESG score. The financial growth hypothesis is verified for the market measure of financial performance related to corporate sustainable performance measured by the aggregated ESG score. The results are partially validated by the OLS regressions. Moreover, unidirectional causality is found for the impact of sustainable performance on the financial performance for the majority of measures, while the financial performance is found as a significant trigger only for the aggregated sustainable performance. Particular policies and practices on the corporate performance could be drawn in terms of decision-making process.*

Keywords: *Corporate sustainable performance, Corporate financial performance, Granger causality, ESG score, Controversies score.*

1. Introduction

Climate change caused a global crisis demanding an enhanced worldwide responsibility on environmental, social and governance policies. Professionals, academics and organizations are all concerned about responsible ways of designing the business model in order to mitigate social and environmental footprint. To answer these issues, the organizations had to remodel their corporate practices, by extending the objective of maximizing the financial performance for shareholders towards long-term value creation for both companies and stakeholders (Lungu *et al.*, 2017). This approach

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provides more relevant information and creates the premises for an improved corporate transparency and accountability (Vaz *et al.*, 2016; Dumay *et al.*, 2016).

Reviewing the relevant literature, Lu *et al.* (2014) observed concepts similar to corporate social responsibility, used often interchangeably: corporate social performance, corporate citizenship, or sustainable development. Thinking globally, the holistic concept of sustainable development is needed to map the relationship between increasing awareness on environmental problems' exponential growing and socio-economic issues related to poverty, inequality and healthy future for humanity (Hopwood *et al.*, 2005). Cantele and Zardini (2018) consider relevant for businesses to shift the macro level of sustainable development towards a sustainable management strategy embedding all sustainability dimensions measured and reported on an integrated basis. The contribution of a single company to sustainable development is largely dependent on the company's perceptions of the advantages of sustainability strategies and consequent practices. In this context, companies may contribute to the further integration of sustainability with consequences on corporate strategic planning and decision-making (Gunarathne and Senaratne, 2017).

One particular and recurrent topic found in the papers reviewing the literature on corporate sustainability is the relationship between corporate social responsibility and financial performance. Even though the subject has drawn researchers' attention for the last decades and the association seems to be typically positive, no general consistency has been reached (Wang and Choi, 2013; Quazi and Richardson, 2012). Quazi and Richardson (2012) analyse the possible sources of variation among results. The study finds sample size and methodology as significant sources of variation in assessing the relationship between the two variables. Following the analysis of 101 research papers concerning the relationship between sustainability and business performance, Goyal *et al.* (2013) identify different results by reference to various cultural and economic contexts.

The aim of this paper is to draw from prior research of the sustainable performance-financial performance nexus (Makni *et al.*, 2009; Cho *et al.*, 2010; Lu *et al.*, 2014; Hirigoyen and Poulain-Rehm, 2015) with the purpose of investigating the bidirectional link between corporate sustainable performance and corporate financial performance based on the short-run causality. The general research hypothesis is sequentially tested by using various measures of sustainable performance (Thomson Reuters ESG scores) and financial performance (return on assets - ROA, return on equity - ROE, and market to book value - MBV) for the companies activating in the energy sector, worldwide.

As a contribution seeking to differentiate from previous studies, and to control for the limit of heterogeneity reflected by the specific characteristics of each industry in terms of sustainability-related policies, the sample used in this research consists of companies that activate in energy sector, only. Arguments for choosing energy industry start with the pioneering sustainability-oriented activities (Hughey and Sulkowski, 2012) and relay on the increasing importance conferred by researchers and scientific journals' editors, overtime (Soytas *et al.*, 2017; Patari *et al.*, 2014; Lu *et al.*, 2014).

Different research methodologies are instrumented in previous research, from case studies focusing on market leaders in energy sectors as British Petroleum (Mobus, 2012) or Royal Dutch Shell (Ekatah *et al.*, 2011), to semi-structured interviews in UK energy industry (Sharratt *et al.*, 2007), content analysis in emerging countries (Jindrichovska and Purcărea, 2011), and regression analysis at a global level for energy industry (Patari *et al.*, 2014; Hughey and Sulkowski, 2012). For this paper, the bidirectional relation is addressed by using the causality test (Granger, 1969) and the linear regression analysis (Gujarati, 2003) for two mirrored models. To respond to possible endogeneity issues, prior to determine the short-run relationships between the variables, stationarity tests are applied to the data series. Possible influences of other factors that might distort the results of the causal relationship between the two main categories of performance variables in this study are considered by extending the econometric models with a number of control variables.

Another contribution of this study is the control for data reliability inferred by the accounting standards used by the companies to prepare and report financial information. The argument is that different standards applied by companies could distort the values of financial performance, given different accounting recognition treatment used by various companies, or even by the same company for each of the two years of study.

As in Hirigoyen and Poulain-Rehm (2015), the Granger causality tests could not support any bidirectional relationships when different measures of corporate sustainable performance are paired with corporate financial performance measured as ROA and MBV. However, adding to the literature, the feedback hypothesis is supported in the case of ROE and sustainable performance measured as an aggregated score. Significant pairwise relationship is also found when MBV is considered as corporate financial performance measure in energy industry. Thus, the financial growth hypothesis may be supported, that a change in corporate financial performance may generate a change in corporate sustainable performance. The results are similar with other studies (Patari *et al.*, 2014; Nelling and Webb, 2009) for energy industry, when ROA variable is used to measure financial performance. This study contributes to the literature by extending the research area to other two variables, ROE and MBV, for which significant result are found.

This paper also contributes to the seminal research by advancing the aggregated measure of sustainable performance, with the controversies generated by the scandals the companies were involved in, and with the governance dimension considered to be a corporate legitimacy-related measure.

The remainder of this paper advances as follows: the second section reviews the prior research and builds on the conceptual model and research hypothesis, while the third section presents the research methodology, referring to method, study design, and sample. The fourth section is dedicated to disclosure and interpretation of the results and their overall implications on the microeconomic reality and corporate sustainable-oriented policies and practices. Concluding remarks, discussions, limitations, and future research are provided in the fifth section.

2. Theoretical foundation, conceptual model, and hypothesis development

The focus on environmental, social and governance corporate policies and reporting had increasingly become significant, as companies' failures, the global financial concerns, sustainability-related issues as climate change became current concerns (Haji and Anifowose, 2017). The elderly emerged (1950s, according to Caroll, 1999) corporate social responsibility has flourished when *stakeholder theory* of Freeman (1984) stated that company's responsibility needs to encounter the interests of people involved (stakeholders) while delivering business performance and success (Lu *et al.*, 2014). Hackett (2017:6) considers it „a strategic tool in the relationship between business, government and stakeholders alike". The *legitimacy theory*, underlined by researchers, extends the idea that companies should behave in a socially responsible way (Gray and Bebbington, 2000; Jones, 2010). Corporate social responsibility has been widely investigated as a concept (Caroll, 1999) that generated competitive advantage for companies (Ceglinski and Wisniewska, 2017). Stakeholders awareness about corporate responsibility enhances the visibility, legitimacy and reputation of the company, hence its performance through value-creation. From this perspective, corporate sustainability may be leveraged through an informative disclosure that reinforces the company capabilities to gain a competitive advantage. This disclosure signals the added value of the company, otherwise unnoticed by stakeholders (Toms, 2002).

To contribute to harmonizing the global attention on sustainability, with companies' individual interest in improving financial performance through a responsible behaviour, this study explores the relationships between sustainable performance and financial performance of companies activating in the energy industry, a highly sensitive sector to environmental, social and governance issues. To achieve this goal, seminal research on CSP – CFP nexus is analysed (e.g. Preston and O'Bannon, 1997; Makni *et al.*, 2009; Lu *et al.*, 2014; Hirigoyen and Poulain-Rehm, 2015) to identify the primary causalities previously highlighted.

Lu *et al.* (2014) critically review a final list of 84 empirical studies from 1,178 journal articles published on the first decade of the 2000s on the social performance – financial performance nexus. Their findings show a dynamic linkage between CSP (corporate sustainable performance) and CFP (corporate financial performance), and an increasingly debate on corporate social responsibility for various sensitive industries (mining, water etc.), both globally and in particular country-contexts. The mixed results showing positive, negative, or neutral relationships reported between CSP and CFP partially aim to provide an economic justification for corporate sustainability-related policies and practice.

Wang *et al.* (2008, cited by Lu *et al.*, 2014) notice that corporate social responsibility programmes' costs are highly enough and competing for companies' financial resources unless undisputable benefits stimulate them. However, Soytas *et al.* (2017) find that sustainable investments are costlier for highly efficient companies. New evidence on the impact of sustainable practices on CFP is provided by Alshehhi *et al.* (2018) when reviewing 132 articles on the topic, published in highly-ranked journals. The findings show a high rate of reporting a positive relation between corporate sustainability and financial performance, however a slow process of swapping the narrowed corporate social responsibility concept with the corporate sustainability concept.

In order to construct a multidisciplinary approach, Ozturk's (2010) four hypotheses applied to energy industry addressing the macroeconomic relationship between energy policy and growth are adapted to microeconomic level, considering the energy sector's companies.

Table 1 summarises the theoretical foundation of the topic. Underlying on Ozturk (2010), Preston and O'Bannon, (1997) and Hirigoyen and Poulain-Rehm (2015) studies, the four conceptual hypotheses advanced in this research are briefly explained. *Sustainable growth hypothesis* defines a causality running from CSP to CFP that could have adverse influences on CFP. Under social impact hypothesis, CSP may slightly positively influence CFP by meeting expectations and demands of different stakeholders, but according to the trade-off assumption, CFP might be negatively influenced because of additional costs required for responsible corporate behaviour. *Financial growth hypothesis* shows a causality running from CFP to CSP with a positive influence under the slack resources' hypothesis and a negative one when management opportunism is involved. Companies with limited resources are more responsible managing them, so they act sustainable and have increasingly financial performance. Adversely, senior managers pursue their pecuniary interest and do not act responsible when financial performance is high. While financial performance declines, they will engage the company in sustainable programmes. *Feedback hypothesis* describes a bidirectional linkage between CSP and CFP with positive effects on CFP under positive synergy assumption and negative impact under the negative synergy hypothesis. Moreover, high levels of sustainable practices and performance may cause higher, as well as poorer levels of corporate financial performance. *Neutrality hypothesis* indicates no causality between CSP and CFP. More accurately, the CSP - CFP nexus has a great level of hazard that bias the conclusion of a strong and defined link of those two.

Table 1. **Extended hypotheses on CSP – CFP causality**

CSP – CFP causality	Positive	Negative
Sustainable growth hypothesis CSP $\rightarrow$ CFP	Social impact hypothesis (Freeman, 1984)	Trade-off hypothesis (Friedman, 1962, 1970; Vance, 1975; Balabanis *et al.*, 1998)
Financial growth hypothesis CFP $\rightarrow$ CSP	Slack resources hypothesis (Waddock and Graves, 1997)	Managerial Opportunism hypothesis (Preston and O'Bannon, 1997)
Feedback hypothesis CSP $\leftrightarrow$ CFP	Positive synergy hypothesis (Waddock and Graves, 1997)	Negative synergy hypothesis (Preston and O'Bannon, 1997)
Neutrality hypothesis CSP $\neq$ CFP	Gomez (2001)	

(Source: Adapted and extended based on Hirigoyen and Poulain-Rehm (2015:21) and Ozturk (2010))

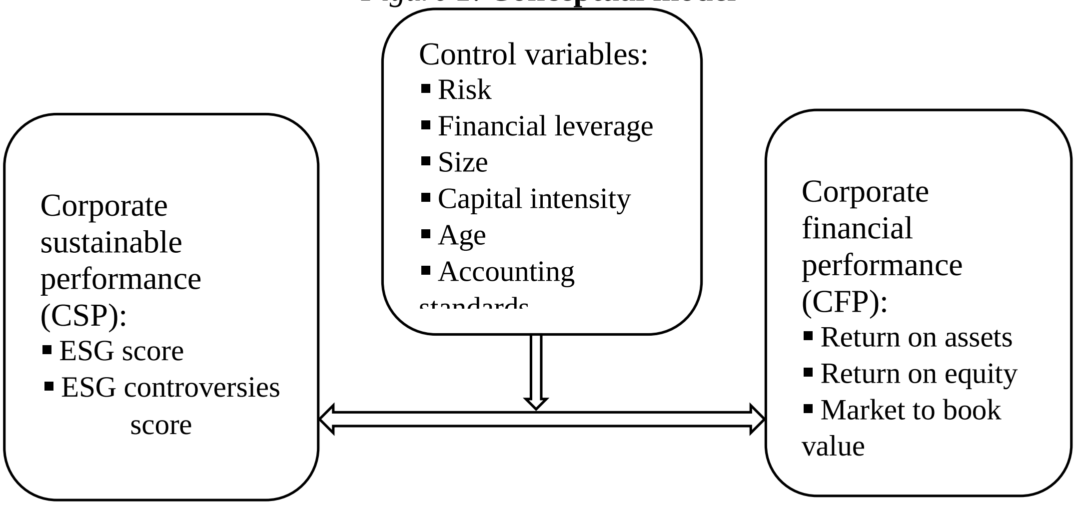
Advancing on previous studies' mixed results (Makni *et al.*, 2009; Lu *et al.*, 2014), this research addresses the bidirectional relationship between sustainable performance and financial performance using the Granger causality approach by testing the following research hypothesis:

RH: Higher (lower) levels of corporate sustainable performance (corporate financial performance) Granger cause higher (lower) levels of corporate financial performance (corporate sustainable performance) for the energy industry.

The study contributes to current knowledge by including into research a multidimensional score reflecting the sustainability-oriented policies of the companies around the world as well as advanced discussion on controversies-focused measures and governance pillar of corporate sustainable performance. At the same time, the corporate financial performance is captured based on both accounting and market measures already validated by seminar seminal research in this area. Control variables are also considered in order to respond to the endogeneity concerns. Consequently, the research hypothesis is built on the conceptual model illustrated in *Figure 1*.

Seminal research in this area uses a combined score to measure the sustainable performance of the companies. Part of the authors measure sustainability by referring to institutional databases as Thomson Reuters Asset4 (Ecless *et al.*, 2014) or Kinder, Lydenberg & Domini (KLD) social performance ratings (Garcia-Castro *et al.*, 2010; Makni *et al.*, 2009; Cho *et al.*, 2010; Wang and Choi, 2013). Other authors constructed the measure based on content analysis or survey (Schoenherr and Talluri, 2013). Corporate sustainability revealed through the environmental, social and governance (ESG) practices was previously used to assess non-financial performance of companies (Achim and Borlea, 2015), as well as to investigate the impact of ESG activities on company's value (Fatemi *et al.*, 2017) or to seek for an association amid corporate financial profile and an enhanced ESG performance (Garcia *et al.*, 2017).

Figure 1. **Conceptual model**



(*Source:* Adapted and extended from Makni *et al.* (2009:411); Cho *et al.* (2010); Hirigoyen and Poulain-Rehm (2015:23))

For this research, the Thomson Reuters ESG Scores (Thomson Reuters, 2018) are used to transparently and objectively measure the sustainable performance of the companies. An overall *ESG Combined score* is provided by Thomson Reuters to discount the ESG score for news' controversies which materially impact the corporations. However, for the purpose of this research the two individual scores are considered: *ESG score* and *ESG Controversies score*.

Three secondary scores contribute to the measurement of the *ESG score*: Environmental score, Social score, and Governance score. Information is gathered by Thomson Reuters (2018:3) from company's publicly available data, organised by pillar (see details in Appendix 1):

- Environmental: Resource Use, Emissions, Innovation;
- Social: Workforce, Human Rights, Community, Product Responsibility:
- Governance: Management, Shareholders, CSR Strategy.

The *ESG Controversies (ESGC) score* is used to capture the scandals the companies were involved in, during previous year, and their impact on current year activity. Aspects related to community, human rights, management, product responsibility, resource use, shareholders and workforce are included with details assessed through 23 indicators.

The accounting measures of corporate financial performance (return on assets and return on equity) are variables commonly used in studies of the relationship between sustainability and financial performance (Waddock and Graves, 1997; Preston and O'Bannon, 1997; Makni *et al.*, 2009; Cho *et al.*, 2010; Hirigoyen and Poulain-Rehm, 2015; Soytas *et al.*, 2017; Worae and Ngwakwe, 2017). The market measure of corporate financial performance (market to book value) is used for robustness (Makni *et al.*, 2009) and validity of the research, as it pairs the accounting dimension with a market dimension of the financial performance.

Moreover, the bidirectional relationships between corporate sustainable and financial performance is analysed under the influence of a number of control variables, to better isolate the effect of CSP and CFP. Company's characteristics as risk level, financial leverage, size, capital intensity, age and accounting standards (US GAAP, IFRS and others) are included in the conceptual model (*Figure 1*), based on various approaches found in the literature. Waddock and Graves (1997) notice that the socially responsible behaviour may depend on the size of the company, as well as on the industry. For example, companies activating in environmentally sensitive industries (chemical, metals, mining, petroleum etc.) provide extensive environmental disclosure (Cho *et al.*, 2010). Alongside size and industry, researchers argue that the risk level has also an impact on the relationship between sustainable performance and financial performance. Roberts (1992) concludes that companies with a stable return model and high involvement in socially responsible activities are those companies with a low risk level. The capital intensity is another control variable found significantly associated with environmental disclosure (Cho *et al.*, 2010; Clarkson *et al.*, 2008). Even though not consistently argued in research on sustainable performance – financial performance nexus, the age (Cho *et al.*, 2010) and the accounting standards are two other control variables included in the conceptual model.

3. Research methodology

3.1. Database and sample selection

This research is based on data provided by Thomson Reuters Eikon. The sample used in this study consists of companies included in Thomson Reuters ESG database, that met the criteria of having a financial year ended between June 30, 2017 and December 31, 2017, and of having ESG scores calculated by Thomson Reuters. First, there were identified 2916 companies in energy sector, which are included in the Thomson Reuters database. Of these, a total sample of 408 companies met the second criteria for the year 2017 and 378 companies for the year 2016, and constitute the final sample. Other limiting factor contributing to the final number of observations included in the econometric model is the availability of financial data for the companies. To perform the statistical tests various subsamples are used. The samples of the 408 companies in 2017 and 378 companies in 2016 are considered for applying OLS regressions, while a cumulative sample of 682 company-year observations, common for both years and for all six studied variables is used for stationarity and Granger causality tests. Sub-samples for companies applying various accounting standards are also analysed. Descriptives of data are presented in detail in the section 4.1 of this paper.

3.2. Sustainable and financial performance measures and control variables

This section presents the variables of the study, organised in three groups: the corporate sustainable performance variables, the corporate financial performance variables and the control variables reflecting the company's characteristics (*Appendix 2*).

The *sustainability-related variables* are measured by various cumulative and individual dimensions reflecting the corporate performance related to environmental, social and governance policies of the companies (*Appendix 2*). The Thomson Reuters ESG Database is used to extract the sustainable performance scores: *ESG score* and *ESG Controversies score*. The extended number of metrics used to assess the scores ensure the legitimacy of data and differentiate between companies that have limited reporting, scarce transparency or minimal policies' implementation and execution, and companies that are considered leaders in their industries or regions.

Three variables are selected for measuring the corporate financial performance of the companies (*Appendix 2*). The rate of return on assets (ROA) and the rate of return on equity (ROE) illustrate the accounting dimension of financial performance. The third variable used is the market to book value (MBV) that reflects the stock market value of equity relative to its accounting value.

Finally, a number of control variables are considered for this research, as various researchers highlighted over time that the specific characteristics of company may influence the relationship between sustainable performance and financial performance. The size of the company is measured using the natural logarithm of total assets (LNASSETS). The level of risk that may affect the hypothesised relationship is controlled by using two variables: long-term debt to total assets (DEBT) and beta factor calculated by Thomson Reuters with weekly data on a three-years basis (BETA). The heterogeneity induced by industry is eliminated by the focus only on energy industry. The focus on the energy industry is the reason this study also controls for the capital intensity (CAPINT). To debate on Cho *et al.* (2010) results, the age variable is also included. Finally, to control for accounting standards' influence on corporate sustainable and financial performance, three binary variables are identified and used, as described in *Appendix 2*.

3.3. Research method

The research hypothesis focusing on the relationships between corporate sustainable and financial performance, measured with various indicators is addressed by using Granger causality test (Granger, 1969), further validated by OLS regression analysis (Gujarati, 2003).

The Granger causality test, previously used in sustainable performance research area (Makni *et al.*, 2009; Hirigoyen and Poulain-Rehm, 2015; Patari *et al.*, 2014) is applied in this research to test for the short-run relationships between sustainable and financial performance of companies in energy industry. Additional to other research in the field, the objective here is to discuss the precedence in time rather than the same year relations between the variables.

Therefore, a one-year lag is considered when estimating the following regressions:

$$Yt = \sum_{i=1}^{n} \alpha_i X_{t-i} + \sum_{j=1}^{n} \beta_j Y_{t-j} + \varepsilon_{1t},$$

and

$$Xt = \sum_{i=1}^{m} \lambda_i X_{t-i} + \sum_{j=1}^{m} \delta_j Y_{t-j} + \varepsilon_{2t},$$

where Y and X are the variables measuring the sustainable and financial performance, and it is assumed that the errors ε_{1t} and ε_{2t} are uncorrelated.

To respond to possible endogeneity issues, prior to determine the short-run relationships between the variables, stationarity tests are applied to the data series. The unit root tests developed in the literature by Dickey and Fuller (1979, 1981) as Augmented Dickey-Fuller (ADF) test, by Phillips and Perron (1988) as Phillips-Perron (PP) test, and by Im *et al.* (2003) as Im, Pesaran, and Shin test, and integrated in the statistical research tools, are used to check the stationarity of the data. Gujarati (2003) shows that the stationarity test is applied by running the following regression:

$$\Delta Y_t = \alpha + \delta Y_{t-1} + \beta \Sigma \Delta Y_{t-1} + \varepsilon_t$$

where α is the intercept, ε_t is the error, and ΔY_{t-1} is the lagged difference term.

Possible influences of other factors that might distort the results of the causal relationship between the two main categories of performance variables in this study are considered by extending the econometric models with a number of control variables. This idea supports the use of linear regression analysis as complemented statistical tests for concluding on the research hypothesis. The ordinary least squares multiple regression is the statistical model used by Cho *et al.* (2010), Makni *et al.* (2009), Hirigoyen and Poulain-Rehm (2015), or Patari *et al.* (2014) for examining the relationship between different dimensions of sustainable performance and the financial performance of companies activating in various industries. Some of the authors included control variables to overcome the influence of external factors found to be related to corporate performance.

Accordingly, two sets of causal models are implemented:

$$CSP_{i,t} = \alpha_0 + \alpha_1 CSP_{i,t-i} + \alpha_2 CFP_{i,t-i} + + \sum_{j=3}^{n} \alpha_j CV_{i,t-1} \qquad \text{(Model 1)},$$

and

$$CFP_{i,t} = \beta_0 + \beta_1 CFP_{i,t-i} + \beta_2 CSP_{i,t-i} + + \sum_{j=3}^{n} \beta_j CV_{i,t-1} \qquad \text{(Model 2)},$$

where *i* represents the company, and *t* represents the time, *CSP* is the generic variable illustrating the corporate sustainable performance, *CFP* is the generic variable for corporate financial performance, while *CV* is the generic measure for control variables.

The dependent, independent and control variables refer to the indicators calculated for each company *i*, for two consecutive years, *t*, and *t-1*.

4. Results

4.1. Descriptive statistics and correlation analysis

At a first-level analysis, descriptive statistics are determined for the continuous regression variables. *Table 2* reports the descriptive statistics of sustainable performance scores, financial performance variables and control variables.

Table 2. **Descriptive statistics**

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
ESG_2017	408	13.1863	92.8714	50.6717	17.8803	0.1625	0.1208	-0.8019	0.2411
ESG_2016	378	17.9441	92.0576	50.7083	17.6340	0.2309	0.1255	-0.7892	0.2503
ESGC_2017	408	0.2092	71.4286	50.8400	21.3956	-1.3248	0.1208	-0.0127	0.2411
ESGC_2016	378	0.2024	68.7500	50.9979	20.1205	-1.4808	0.1255	0.4488	0.2503
ROA_2017	405	-1.6425	12.6711	0.0193	0.6573	17.6479	0.1213	342.0583	0.2420
ROA_2016	405	-10.0813	2.5928	-0.0577	0.5412	-15.5466	0.1213	294.1252	0.2420
ROE_2017	386	-4.6832	4.6414	-0.0187	0.5169	-1.9515	0.1242	45.4286	0.2478
ROE_2016	383	-12.9823	1.3501	-0.1336	0.8481	-10.7308	0.1247	147.1301	0.2487
MBV_2017	381	0.1088	33.4179	1.8556	2.3547	7.7576	0.1250	89.5865	0.2494
MBV_2016	375	0.0849	103.7044	2.5468	7.2200	10.2690	0.1260	122.7897	0.2513
BETA_2016	400	-4.1617	9.7229	1.6011	1.3444	1.4512	0.1220	5.6534	0.2434
DEBT_2016	407	0.0000	3.8772	0.2633	0.3137	5.5203	0.1210	50.7927	0.2414
LNASSETS_2016	408	14.6782	26.7425	21.8332	2.0281	-0.4317	0.1208	0.8844	0.2411
CAPINT_2016	402	0.1801	915.0705	13.2501	70.0451	9.7215	0.1217	102.8946	0.2428
AGE_2017	394	0.0000	135.0000	23.6472	21.0002	1.7955	0.1229	4.1751	0.2453
ACC_US	408	0.0000	1.0000	0.3652	0.4821	0.5620	0.1208	-1.6925	0.2411
ACC_IFRS	408	0.0000	1.0000	0.5392	0.4991	-0.1579	0.1208	-1.9848	0.2411
ACC_OTH	408	0.0000	1.0000	0.0956	0.2944	2.7610	0.1208	5.6509	0.2411

Note: The variables listed are defined in Appendix 2.

(*Source*: Compiled by the authors)

Due to the positive skewness, the total assets variable, characterizing the size of the company is transformed using natural logarithm. The dependent variables expressed by ESG and ESGC scores are characterized by skewness and kurtosis statistics which withstand the normality of data distribution. The financial performance measures expressed by ROA and ROE present values ranging between -12.9823% and +12.6711%, with standard deviations less than 1%, and with mean values similar for each of the two years, considered in the study, 2016 and 2017. The MBV has a larger range between minimum and maximum value, compared to the other variables, however the means do not differ in 2016 and 2017. The descriptive statistics, presented in *Table 2*, stand for the assumption that the data are normally distributed and a regression model based on those variables is valid.

The status of accounting standards used by the companies included in the study is measured by ACC_US, ACC_IFRS, and ACC_OTH, also presented in *Table 2*. The total sample of the study consists of 408 companies, of which 149 companies (36.52%) apply US GAAP for 2016 and 2017 financial statements, respectively. A number of 220 companies (53.92%) apply IFRS and only 39 companies (9.56%) apply other accounting standards, as in national accounting standards.

The strength of the association between the sustainable performance variables and the financial performance of the companies is tested using both parametric and nonparametric correlations.

The Pearson and Spearman correlations' values are reported in *Appendix 3*. Significant positive correlations are shown between sustainable performance and financial performance variables in 2016 and their corresponding values in 2017. Furthermore, the correlation analysis suggests possible associations between ESG score and ROA, and ESGC score and ROA, with a significance level of 0.05. No significant direct associations might be found between sustainable performance variables and other financial measures of performance.

However, possible associations might be found when the impact is tested in a regression with control variables. Generally, the low intensity or the lack of the association between corporate sustainable performance and corporate financial performance variables indicates the need to control for other variables which may have an influence.

4.2. Results of regression models

4.2.1. Stationarity test and Granger causality results

As the basic assumption of testing Granger causality is the stationarity of the data, the first test performed for the corporate sustainable performance (CSP) and corporate financial performance (CFP) series is the unit root test developed for cross-sectional data. Because different tests are based on different assumptions, the robustness of the results is triangulated using the three tests described in the Research methodology section: Augmented Dickey-Fuller, Phillips-Perron, and Im, Pesaran, and Shin tests.

To perform the stationarity and Granger causality tests implemented in statistical software the database is displayed using the company-year observations, including only the data with values for all six studied variables (ESG score and ESGC score for corporate sustainable performance) and (ROA, ROE, and MBV for corporate financial performance). Consequently, the database consists of a number of 682 company-year common observations.

Table 3 presents the results of the unit root tests at level and for the first difference, showing the change in the variables' values from 2016 to 2017. The results imply that the six series of data are stationary at level and for the first difference and generate similar results when all three tests are applied, with a probability $p < .01$. Thus, the Granger causality tests may be applied to initial data series.

Table 3. **Panel unit root test results (Energy industry companies for 2016, 2017)**

Unit root tests	At level	Change (1st difference)
Augmented Dickey-Fuller (ADF): Fischer Chi-square	1,395.02***	1,086.68***
Augmented Dickey-Fuller (ADF): Choi Z-stat	-36.577***	-32.082***
Phillips-Perron (PP): Fischer Chi-square	1,306.90***	147.365***
Phillips-Perron (PP): Choi Z-stat	-35.322***	-10.519***
Im, Pesaran, and Shin test, with:	-62.342***	-93.737***
ESG statistics	*-18.746****	*-32.218****
ESGC statistics	*-20.908****	*-29.185****
ROA statistics	*-20.825****	*-27.047****
ROE statistics	*-25.977****	*-30.341****
MBV statistics	*-23.854****	*-30.559****

Note: The variables listed are defined in Appendix 2. The probability is computed assuming asymptotic normality. Number of lags included in the test equation is 1 lag. The sample consists of 682 company-year observations, constructed by extending the common sample number of companies of 341 for the two years of data. The tests are run considering the individual effects of exogenous variables.

(*Source*: Compiled by the authors)

Table 4 presents the results of Granger causality testing the research hypothesis. As highlighted in the table, the pairwise tests indicate mixed results when different measures of corporate sustainable performance and corporate financial performance are applied.

The neutrality hypothesis is found for the majority of the relationships. Thus, no bidirectional relation between corporate sustainable performance and corporate financial performance could be identified in the case of ROA and MBV paired with each of the three corporate sustainable performance variables, respectively.

However, the feedback hypothesis is supported in the case of ROE and ESG score, with a probability p<.10. Using similar variables for financial performance, Hirigoyen and Poulain-Rehm (2014) couldn't support any bidirectional or unidirectional relation between social responsibility measures and either of the three financial performance variables, tested for a sample of 329 companies around the world activating in six industries.

Table 4. **Granger causality tests**

Null hypothesis	F-Statistic	Probability	Conceptual model hypothesis
ROA does not Granger cause ESG	0.032	0.8576	Neutrality
ESG does not Granger cause ROA	1.403	0.2367	
ROE does not Granger cause ESG	*3.284**	*0.0704*	Feedback
ESG does not Granger cause ROE	*3.007**	*0.0833*	
MBV does not Granger cause ESG	*3.669**	*0.0558*	Financial growth
ESG does not Granger cause MBV	0.036	0.8494	
ROA does not Granger cause ESGC	0.004	0.9509	Neutrality
ESGC does not Granger cause ROA	0.849	0.3572	
ROE does not Granger cause ESGC	0.008	0.9294	Neutrality
ESGC does not Granger cause ROE	1.183	0.2771	
MBV does not Granger cause ESGC	1.109	0.2926	Neutrality
ESGC does not Granger cause MBV	0.337	0.5619	

Note: The variables listed are defined in Appendix 2. Number of lags included in the test equation is 1 lag. The sample consists of 682 company-year observations, constructed by extending the common sample number of companies of 341 for the two years of data.
*** Significance at the 0.01 level.
** Significance at the 0.05 level.
* Significance at the 0.10 level.

(*Source*: Compiled by the authors)

Adding to the literature, this study finds significant pairwise relationship when MBV is considered as corporate financial performance measure in energy industry. Thus, the financial growth hypothesis may be argued, as a change in corporate financial performance may generate a change in corporate sustainable performance. The results are similar with other studies (Patari *et al.*, 2014; Nelling and Webb, 2009) for energy industry, when ROA variable is used to measure financial performance.

4.2.2. OLS regression results

The research hypothesis is tested primarily for the bidirectional relations between corporate sustainable performance measured by the aggregated ESG score and different measures of corporate financial performance, when control variables are also considered in the econometric model.

Table 5 reports the results of regression analysis testing the Granger causality between the ESG score and the three performance measures (ROA, ROE, and MBV), respectively. The OLS regression in models (1) and (2) are designed with a one-year lag between the dependent variable and the primary independent variables. Thus, the dependent variables relate to the year 2017, while the primary independent variables are corporate sustainable performance scores and corporate financial performance metrics for the year 2016. The fixed effects regression is used to control for the impact of various accounting standards applied by the companies. The sample observations were pooled for the three categories of accounting standards (US GAAP, IFRS, and Other) and the statistics tool, used arbitrarily, established the IFRS category as reference in the regression models.

As highlighted in *Table 5*, the two models are statistically significant based on the model F-statistic computed by using ANOVA tests. The results show different impact when various measures for sustainable performance and financial performance are considered, respectively.

Table 5. **Results of OLS regression analysis**

testing the bidirectional relations between sustainable performance measured by the overall ESG score and different measures of financial performance

	ESG_2017		**ROA_2017**		**ESG_2017**		**ROE_2017**		**ESG_2017**		**MBV_2017**	
	Model (1)		**Model (2)**		**Model (1)**		**Model (2)**		**Model (1)**		**Model (2)**	
	Coef.	**t**	**Coef.**	**t**	**Coef.**	**t**	**Coef.**	**t**	**Coef.**	**t**	**Coef.**	**t**
(Constant)	-7.899	-1.951	-0.398	-4.111	-7.93	-1.939	-1.113	-3.463	-7.63	-1.884	8.171	5.128
ESG_2016	.893***	39.434	-.001*	-1.729	.893***	39.231	-0.001	-0.808	.892***	39.025	.020**	2.247
ROA_2016	-1.428	-0.939	.218***	6.004								
ROE_2016					-.839**	-2.285	0.036	0.778				
MBV_2016									.136***	3.073	.105***	6.204
BETA_2016	0.139	0.579	-0.007	-1.24	0.036	0.144	-0.011	-0.577	0.119	0.476	-.269***	-2.805
DEBT_2016	0.127	0.127	.041*	1.687	-0.619	-0.295	-0.181	-1.109	-1.156	-0.537	0.622	0.74
LNASSETS_2016	.646***	3.12	.020***	4.094	.671***	3.159	0.055***	3.307	.640***	3.039	-.340***	-4.126
CAPINT_2016	0.004	1.027	0	-1.355	0.004	0.897	-8.00E-05	-0.242	0.004	0.944	-0.002	-0.993
AGE_2017	0.003	0.191	0	-0.272	0	-0.01	0	-0.176	0.005	0.327	-0.001	-0.181
ACC_US	0.014	0.02	0.02	1.196	-0.117	-0.158	0.031	0.529	-0.169	-0.227	.479*	1.679
ACC_OTH	0.166	0.153	0.036	1.379	-0.381	-0.346	0.13	1.524	-0.456	-0.413	0.65	1.535
R	0.944		0.463		0.945		0.265		0.945		0.43	
R Square	0.891		0.214		0.894		0.07		0.893		0.185	
Adjusted R Square	0.888		0.194		0.891		0.044		0.89		0.162	
Durbin-Watson	1.989		1.81		2.024		1.859		2.057		2.048	
ANOVA F-stat.	312.474		10.365		305.362		2.711		301.682		8.072	
Sig.	0		0		0		0.005		0		0	

Note: The regressions are run for Model 1 and Model 2 equations with ESG score as sustainable performance measure. The financial performance variable is replaced subsequently by ROA, ROE, and MBV. All the variables are defined in Appendix 2.

*** Significance at the 0.01 level.

** Significance at the 0.05 level.

* Significance at the 0.10 level.

(*Source*: Compiled by the authors)

Table 6. **Results of OLS regression analysis**

testing the bidirectional relations between sustainable performance measured by the ESGC score and different measures of financial performance

	ESGC_2017		ROA_2017		ESGC_2017		ROE_2017		ESGC_2017		MBV_2017	
	Model (1)		Model (2)		Model (1)		Model (2)		Model (1)		Model (2)	
	Coef.	t	Coef.	t	Coef.	t	Coef.	t	Coef.	t	Coef.	t
(Constant)	119.259	7.861	-0.474	-4.262	120.77	7.865	-1.558	-4.257	120.197	7.897	8.928	4.882
ESGC_2016	.284***	5.178	.001**	2.051	.307***	5.549	.003**	2.556	.314***	5.587	-.012*	-1.834
ROA_2016	-1.226	-0.248	.218***	6.006								
ROE_2016					-0.756	-0.631	0.03	0.665				
MBV_2016									-0.008	-0.056	.105***	6.172
BETA_2016	0.53	0.678	-0.007	-1.29	0.427	0.525	-0.014	-0.698	0.655	0.8	-.266***	-2.756
DEBT_2016	3.07	0.936	.040*	1.678	6.063	0.894	-0.199	-1.23	7.423	1.056	0.616	0.731
LNASSETS_2016	-3.826***	-6.037	.020***	4.266	-3.932***	-6.02	.065***	4.159	-3.977***	-6.155	-.303***	-3.903
CAPINT_2016	-0.004	-0.29	0	-1.285	-0.007	-0.479	-6.00E-05	-0.175	-0.006	-0.394	-0.002	-1.059
AGE_2017	-.084*	-1.682	0	-0.67	-.098*	-1.931	0	-0.326	-0.083	-1.629	0.002	0.348
ACC_US	3.236	1.421	0.025	1.474	2.321	0.979	0.03	0.535	2.136	0.892	0.399	1.411
ACC_OTH	-2.81	-0.796	0.032	1.221	-3.569	-0.995	0.11	1.298	-3.366	-0.929	.708*	1.661
R	0.547		0.466		0.571		0.294		0.566		0.425	
R Square	0.299		0.217		0.326		0.087		0.321		0.18	
Adjusted R Square	0.281		0.196		0.307		0.061		0.302		0.157	
Durbin-Watson	1.922		1.827		1.861		1.858		1.895		2.022	
F	16.271		10.535		17.56		3.412		17.115		7.846	
Sig.	0		0		0		0.001		0		0	

Note: The regressions are run for Model 1 and Model 2 equations with ESG score as sustainable performance measure. The financial performance variable is replaced subsequently by ROA, ROE, and MBV. All the variables are defined in Appendix 2.

*** Significance at the 0.01 level.

** Significance at the 0.05 level.

* Significance at the 0.10 level.

(*Source*: Compiled by the authors)

Based on the model (1), the findings support the research hypothesis that financial performance measured by ROE (with p=.023) and by MBV (with p=.002) Granger cause the sustainable performance, commitment and effectiveness of companies in energy sector, measured by ESG score. However, the negative impact found for ROE measure of financial performance variable places the energy companies in the managerial opportunism hypothesis described by Preston and O'Brannon (1997, cited by Makni *et al.*, 2009). They state that in companies with high financial performance, the management tend to pursue their own interests to the detriment of the stakeholders, while, in companies with weak financial performance the managers tend to get involved in extensive number of sustainability-related activities, not necessarily supported by the real activity of the company.

As related to ROA measure of financial performance, no statistically significant support could be found for the companies activating in the energy sector. The results are partially consistent with Makni *et al.* (2009) findings showing no significant impact of ROA, ROE or MBV either on the aggregate sustainable performance when Canadian companies from ten different industries are considered. This aspect supports the choice of researching the causality for a recognized sustainability-sensitive industry, as energy.

The reverse relationship, tested in model (2) indicate a possible causality from sustainable performance (ESG score) towards financial performance measured by ROA (with p=.085) and MBV (with p=.0.025). The statistical coefficients show a weak, however significant, negative impact of ESG score on ROA placing the companies in energy sector in the trade-off hypothesis (Waddock and Graves, 1997). Thus, the development of a sustainable behaviour of the management would generate a reduction in the financial resources, with a smaller overall investment in non-current assets. However, when the market financial performance measured by MBV is considered, a positive and higher impact of ESG score is found. Responding to stakeholders needs and claims may enhance the company's financial performance in terms of market values, as showed by the stakeholder theory (Freeman, 1984). No significant relationship is found for the ESG impact on ROE.

With the exception of LNASSETS and the lagged corresponding ESG score, no statistical significance is found for the control variables in case of model (1). However, the impact of various control variables on financial performance measures (model (2)) show a significant positive influence of financial debt (DEBT) on ROA, while the risk level (BETA) negatively influences the MBV.

4.2.3. Particularities of controversies-related measure of sustainable performance

Advances of the research hypothesis determined an extended focus on sustainable performance measures, by using ESG controversies score (ESGC). Specifically, the models (1) and (2) are fitted by substituting the ESG score with the particular dimension previously stated. *Table 6* presents the results of OLS regression when ESGC score measures the corporate sustainable performance. Findings show similar results to those of aggregate ESG score and the case of corporate financial performance measured by ROA (*Table 7*).

No statistically significant impact of financial performance on sustainable performance could be found for the companies activating in the energy sector (model 1), in terms of

ESG controversies, while significant causality (with p=.041) arises from corporate sustainable performance, measured by ESGC score, towards financial performance, measured by ROA. The sustainable growth hypothesis verifies for ESGC – ROA paired variables.

The causality between ESGC and ROE is also unidirectional, but of reversed direction, situating the energy companies in the sustainable growth hypothesis, emerged from stakeholder theory of Freeman (1984) stating that meeting the sustainability-related needs of the stakeholders may lead to a favourable change in company's financial performance measured by ROE. Contrary to results presented for ESG score, the bidirectional causality cannot be established in case of ESGC and MBV measures of performance (*Table 7*). However, the sustainable growth hypothesis supporting the probability of sustainable performance causing an impact on financial performance is accepted with a probability of p=.068.

An interesting result is the significant positive high impact of national accounting standards on the MBV. Thus, the companies using national accounting standards tend to have a higher MBV as compared to companies applying IFRSs, when the relationship between ESG controversies and corporate financial performance is tested.

Table 7. **Results of OLS regression analysis on CSP-CFP causality**

Research hypothesis	OLS regression (Beta Coef.)	Conceptual model hypothesis
ROA => ESG	-1.428	Sustainable growth
ESG => ROA	-.001*	
ROE => ESG	-.839**	Financial growth
ESG =>ROE	-0.001	
MBV => ESG	.136***	Feedback
ESG => MBV	.020**	
ROA => ESGC	-1.226	Sustainable growth
ESGC => ROA	.001**	
ROE => ESGC	-0.756	Sustainable growth
ESGC => ROE	.003**	
MBV => ESGC	-0.008	Sustainable growth
ESGC => MBV	-.012*	
ROA => GOV	-2.278	Neutrality
GOV => ROA	0	
ROE => GOV	-0.624	Neutrality
GOV => ROE	0	
MBV =>GOV	0.068	Neutrality
GOV => MBV	0.005	

Note: The variables listed are defined in Appendix 2.
*** Significance at the 0.01 level; ** Significance at the 0.05 level; * Significance at the 0.10 level.
(*Source*: Compiled by the authors)

5. Conclusions

This research is undertaken to investigate the bidirectional relationship between corporate sustainable performance and corporate financial performance for companies activating in energy industry. Previous empirical evidence supports mixed results when unidirectional relationships are tested.

When different measures of corporate sustainable performance and corporate financial performance are applied, the neutrality hypothesis is found for the majority of the relationships. The results are similar to prior research for energy industry, when return on assets variable is used to measure financial performance. The majority of the relationships couldn't be supported for the companies in energy sector, as the results are not significant enough to prove that a measure of corporate sustainable performance Granger cause a measure of corporate financial performance. However, unilateral direction tested by OLS regression revealed significant impact of the sustainable performance on the corporate financial performance.

Detailing on the results, similar to Hirigoyen and Poulain-Rehm (2014), the Granger causality tests show no bidirectional relationships between corporate sustainable performance and corporate financial performance measured by ROA and MBV. Additionally, MBV is found to Granger cause ESG score, supporting the financial growth hypothesis. Thus, a change in the financial performance of the company lead to a significant change in the corporate sustainable performance. Adding to the literature, the feedback hypothesis is supported in the case of ROE and sustainable performance measured as an aggregated score. Accordingly, the change in the sustainable performance of one company may lead to a change in its financial performance measured by the market to book value, which may generate incentives for the company to reinvest in sustainability-related actions. In this case, the synergy hypothesis presented by Preston and O'Bannon (1997) is supported for the companies in the energy industry around the world.

Moreover, by applying OLS regression, advances on the positive or negative impact are discussed. Results similar with other studies (Patari *et al.*, 2014; Nelling and Webb, 2009) are found for energy industry, when ROA variable is used to measure financial performance, with no statistically significant support for the companies activating in the energy sector. The results are partially consistent with Makni *et al.* (2009) showing no significant impact of ROA on the aggregate sustainable performance, but significant negative impact in case of ROE, and significant positive impact in case of MBV. The sustainable growth hypothesis is supported in the case of MBV and ESG score, providing arguments for the managerial opportunism hypothesis described by Preston and O'Bannon (1997). An in-depth analysis is recommended, as the managerial opportunism hypothesis may be applied both ways. When financial performance is strong, managers may reduce the sustainability-related policies and expenses. However, when the financial performance is poor, the managers may use the sustainability-related policies as impression management policies.

This study contributes to the literature by extending the research area with a specific variable measuring the corporate sustainable performance, ESG controversies. The OLS regression results in case of causality between sustainable performance and ROE measure of financial performance, supporting the sustainable growth hypothesis when ESGC score is used, combined with the financial growth hypothesis in case the aggregate measure of ESG is used, may be considered an answer for robustness of the results obtained in case of Granger causality tests, supporting the feedback hypothesis for ESG score. These aspects support the choice of researching the causality for a recognized sustainability-sensitive industry, as energy.

Although the results of this study highlight particularities for companies activating in energy sector when various measures for financial and sustainable performance are used, future research may add to those results by considering the long-run relationship, by extending the studied period from two consecutive years to a lengthy time frame. Another limitation that need to be considered when interpreting the results of this study could be that, even prior research was considered for the designing of the empirical models, other factors may explain the causal relationship between corporate sustainable and financial performance. Other directions for future research may also consider specific corporate policies (environmental, social, and governance) oriented towards sustainability independently, as compared to an aggregated approach.

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Appendix 1. **The structure of ESG score, by pillar**

Pillar	Category	Indicators in Rating	Weights	Pillar Weights
Environmental	Resource Use	19	11%	(11%+12%+11%)
	Emissions	22	12%	
	Innovation	20	11%	
Social	Workforce	29	16%	(16%+4.5%+8%+7%)
	Human Rights	8	4.50%	
	Community	14	8%	
	Product Responsibility	12	7%	
Governance	Management	34	19%	(19%+7%+4.5%)
	Shareholders	12	7%	
	CSR Strategy	8	4.50%	
TOTAL		178	100%	

Source: Thomson Reuters (2018:8)

Appendix 2. **Variables' description**

Variables	Name	Characteristics
Sustainable performance:		
ESG	ESG Score	Thomson Reuters scoring methodology based on 178 indicators, integrated across 10 main categories, organised by environmental, social and governance pillars
ESGC	ESG Controversies Score	Thomson Reuters scoring methodology based on 23 controversy measures
Financial performance:		
ROA	Return on assets	A measure of the company's management effectiveness in using its assets to generate earnings: = Ordinary profit / Total assets
ROE	Return on equity	A measure of the company's management effectiveness in using its equity to generate earnings: = Net Income/ Shareholder's equity
MBV	Market to book value	Market capitalization to shareholder equity value
Control variables:		
BETA	Risk level	A statistical measure that compares the volatility of a stock against the volatility of the broader market Beta Up 3 years weekly
DEBT	Financial leverage	A financial ratio measuring the percentage of total assets financed by long-term liabilities =Long Term Debt / Total Assets, Percent
LNASSETS	Size of the company	Natural logarithm of total assets reported in USD
CAPINT	Capital intensity	Total assets divided by total revenues
AGE	Age of the company	Based on the date of incorporation, as of 2017 (last reporting year)
ACC_US	US General Accepted Accounting Standards	Binary variable: 1 if applied, 0 if not applied
ACC_IFRS	International Financial Reporting Standards	Binary variable: 1 if applied, 0 if not applied
ACC_OTH	National Accounting Standards, other than US GAAP or IFRS	Binary variable: 1 if applied, 0 if not applied

Note. The data are collected from Thomson Reuters Eikon Database, for the reporting years 2016 and 2017 (www.eikon.thomsonreuters.com).

Appendix 3. **Correlation analysis: Pearson/Spearman correlation matrix**

	ESG _2017	ESG _2016	ESGC _2017	ESGC _2016	ROA _2017	ROA _2016	ROE _2017	ROE _2016	MBV _2017	MBV _2016	BETA _2016	DEBT _2016	LNASSETS _2016	CAPINT _2016	AGE _2017
ESG_2017	1.000	.946**	-.392**	-.361**	-0.018	.103*	0.059	0.040	-0.011	-0.013	-0.045	-0.015	.585**	-.111*	.313**
ESG_2016	.942**	1.000	-.407**	-.363**	-0.034	.112*	0.061	0.088	-0.027	-0.077	-0.072	-0.012	.579**	-.139**	.346**
ESGC_2017	-.303**	-.322**	1.000	.409**	0.014	-0.074	-0.033	-0.074	0.045	0.044	0.058	0.050	-.454**	0.086	-.200**
ESGC_2016	-.296**	-.291**	.307**	1.000	-.109*	0.080	0.014	0.059	0.004	0.051	0.048	0.018	-.406**	0.087	-.136**
ROA_2017	.177**	.178**	0.063	-0.002	1.000	-.852**	.673**	0.032	-0.053	-0.054	-0.066	-0.013	-0.053	-.140**	-0.027
ROA_2016	.203**	.245**	-0.094	-0.094	.474**	1.000	.210**	.448**	0.012	-0.047	0.070	0.004	.258**	-.104*	0.051
ROE_2017	.209**	.214**	0.039	0.002	.963**	.498**	1.000	.117*	0.009	0.035	-0.062	-0.053	.190**	-0.060	0.020
ROE_2016	.177**	.232**	-0.058	-0.085	.493**	.962**	.521**	1.000	0.083	-.184**	-.127*	-.252**	0.085	-0.014	0.053
MBV_2017	0.079	0.067	0.004	0.028	.249**	.113*	.276**	.122*	1.000	.368**	-.137**	0.055	-.185**	-0.003	-0.013
MBV_2016	0.064	0.036	0.097	0.021	.305**	0.088	.332**	0.087	.839**	1.000	0.013	.223**	-0.042	-0.018	-0.018
BETA_2016	-0.018	-0.073	0.072	-0.003	-.230**	-.216**	-.264**	-.266**	-.223**	-0.091	1.000	.123*	0.030	-.105*	-.171**
DEBT_2016	0.066	0.069	-0.002	-0.049	-0.030	-0.088	0.001	-.111*	0.010	.124*	.238**	1.000	0.040	-0.078	-0.010
LNASSETS_2016	.593**	.581**	-.278**	-.366**	.259**	.334**	.274**	.283**	-0.027	0.037	-0.003	.231**	1.000	-.252**	.231**
CAPINT_2016	-.323**	-.344**	.232**	.183**	-.361**	-.390**	-.398**	-.401**	-.237**	-.153**	.253**	0.073	-.158**	1.000	-0.014
AGE_2017	.316**	.338**	-.149**	-0.028	0.042	.111*	0.059	0.090	0.041	0.016	-.215**	-0.068	.192**	-.188**	1.000

Note: In the table Pearson (Spearman) correlations are presented above (below) the diagonal of the matrix. The variables listed are defined in Appendix 2.

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed)

PS15 NON-FINANCIAL REPORTING

Chairperson: Sebastian Hoffmann, University of Edinburgh, UK

Sustainability reporting in the mining sector

Irena Jindrichovska

Margarita Korkhova

The adoption of integrated reporting in Lebanon

Malak Bou Diab

The evolution of integrated reporting practices - empirical evidence from recognized reporters

Alina Bratu

Sustainability reporting in the mining sector

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Abstract

Idea: *The mining sector is very environmentally exposed. Therefore, it would be interesting to focus more deeply on the way how companies deal with issues important for affected corporate stakeholders. In this paper, we strive to reveal whether there are any important matters having a direct impact on society in all three traditional CSR dimensions.*

Data: *We analyse the recent sustainability reports of two big companies operating in different parts of the word. The first being BHP Billiton, Ltd. an Australian company and the second one is Rio Tinto, plc. domiciled in the UK. The corresponding sustainability reports of both companies are available on the web.*

Tools: *Our principal tool is content analysis using relevant sustainability keywords for both companies. The analysis is performed at two different time periods, 2015 and 2017, allowing a time comparison.*

What's new? *We analyse the specific approach of companies towards sustainability and the way the companies care about the traditional three CSR dimensions.*

So, what? *Thanks to publishing the sustainability reports, the companies and international society will be able to review the main problems regarding the social, economic and environmental aspects. The said mining companies are eager to reduce risks, improve their capability to sustainably manage the resources and take care of people.*

Contribution: *Through this research we establish that leading companies in the mining segment need to pay special attention to areas where companies are extremely exposed, which is especially in social and community areas and impact on people.*

Keywords: *Corporate social responsibility, mining sector, sustainability, corporate stakeholders, communities.*

1. Introduction

In this study we are assessing the impact of new requirements on sustainability reporting and how it results in practice. We have chosen two companies from controversial segment, and we expect that the reporting features will be more apparent especially in environmental and social dimensions. This study is analysing practices of nonfinancial reporting of big mining multinationals. Sustainability reports are useful for key players on international markets, such as shareholders, joint venture partners, customers, suppliers, governments, and so on. These non-financial reports are also significant for large companies themselves, because they provide self-reflection and are motivated to improve and develop their approach towards responsibility and their global business.

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Here we study the two large companies operating on an international arena. The first one is BHP Billiton which is Anglo-Australian company headquartered in Melbourne. The second one is Rio Tinto which is also Anglo-Australian company, but it is domiciled in the UK.

In this paper, we analyse the content of sustainability reports of the said companies focussing on the traditional three CSR dimensions. We compare the published Sustainability reports at two time periods, the years 2015 and 2017. Our aim is to analyse the companies' approach towards social, economic and environmental responsibilities over the time periods and assess their impact on society. As for the time dimension, we are aware that the differences may be limited, because there are not very many years between individual reports, we suggest performing similar analysis in three to five years to be better able to assess the advances.

Sustainability is closely linked with corporate responsibility and CSR. This was defined by Klettner, Clarke and Boersma, who pointed out that corporate social responsibility is "at its simplest, is a commitment to operating in an economically, socially and environmentally sustainable manner". They also emphasized that "the responsible firm, whether under the label of citizenship, social responsibility or sustainability aims to minimise harms and maximise benefits in its relationship with stakeholders" (Klettner et al, 2014: 146).

To further understand the three traditional CSR dimensions in the mining industry, we provide an overview of the main companies' responsibilities. The first one is to support safety measures for the company's employees and take care of their physical and mental health and improve their wellbeing. The second one is to reduce greenhouse gas emissions, protect the environment, and increase productivity. The third one is to keep supporting communities and local small businesses globally. The fourth one is to be responsible towards the company's stakeholders, business partners, employees, and contractors, as well as governments, labour unions, media, non-government organizations, suppliers, customers, and so on. Both multinational corporations have their business standards and policies.

Generally, all large companies approach the mining industry responsibly and seriously. They treat sustainability as a key part of their decision-making process. The global companies' goals are consistent with the United Nations Sustainable Development Goals. However, there still remains the question of how effective these good intentions are. Furthermore, since this style of non-financial is generally required only since 2016 – at least in in Europe. Therefore, we cannot provide better comparison with respect to time differences – we think that there would be more apparent difference in the reporting style with bigger time gap.

This paper is organized as follows: Part one provides introduction to the problem, the second part summarizes previous literature in the field. Part three explains the used methodology followed by empirical findings in part four. Part five provides discussion and part six concludes.

2. Previous literature

In this section, we summarize the research since 2000. Many authors have recently investigated the situation around corporate social responsibility in mining companies in different parts of the world e.g. Hamann and Kapelus (2004) and Campbell (2012) who explored mining companies in Africa. Yakovleva and Vazquez-Brust (2012) focussed on South America and Lee (2017) on Australia. Yakovleva and Vazquez-Brust (2012) analysed the case of mining companies in South America, namely Argentina. Here the authors have established that in the forefront of shareholders´ interest are the environmental duties and local communities. Therefore, safety of environment and sustainability of local communities are the most important parts of CSR. Sustainability issues in Australia were also analysed by Lee (2017), who pointed out "a growing debate about the environmental sustainability issues surrounding the mining and metal industry both within Australia and globally" (Lee, 2017: 210). To moderate the growing debate, the Global Mining Initiative was created, in 1999, by nine large mining and metal corporations. The main goal of this association was to analyse the sustainability approach in the mining industry.

Environmental issues were discussed especially by Mudd (2008) who concentrates on the aspect of water consumption in mining and, in particular, it assesses the quantify of "'embodied water of mineral products" (p. 136). The paper has found that "For many mines, there is little evidence of improving efficiency over time, although some mines have made substantive improvements in reducing water consumed… so must be more completely accounted for to understand a fundamental aspect of sustainability and mining" (p. 136).

The ecological footprint in copper mining was the main focus in the paper by Northey, Haque and Mudd (2013). The researchers were screening 31 reports published between 2001 and 2006 by four major mining companies around the globe both in developed and developing countries under different companies. The authors recommend that "Sustainability reports should be published at regular intervals so that improvements towards more sustainable performance can be measured" and (LCA), life-cycle assessment, can be performed more readily, in particular, in the copper mining companies (p. 128).

Social commitments were highlighted by Perez and Sanchez (2009) asses the evolution of sustainability reporting in the mining sector assessing sustainability reports from 2001 to 2006 by four major mining companies. Authors concluded that "there is a clear evolution in reporting when concepts like „context and commitment" and "social performance" presented the best results and regular improvement" (p. 949). Second most frequents terms were environmental performance motives.

Social issues are also in the forefront of paper by Hodge (2014), who concentrates on community conflict arising from the clash of mining operation activities imposed on local communities by multinational companies and local communities that "are no longer willing to accept development options that appear inconsistent with their values and aspirations". The authors used qualitative methodology and concluded that "Moving forward, the key success factor for any mining operation is the creation of relationships with host communities and countries that are characterized by authenticity, respect, integrity, inclusiveness and transparency" (p. 27).

Fonseca, McAllister and Fitzpatrick (2014), explored sustainability reporting in the mining industry which is predominantly based on the GRI framework. The authors appreciate the efforts of many mining companies, although, at the same time, they warned that this way of reporting may be, in many cases, misleading, because it could omit “or even camouflage unsustainable practices, particularly at the site level” (p. 80). Other scholars were considering a new approach trying to improve the effectiveness of the GRI framework trying to make a more systematic consideration of site-level performance; however, the issue is very complicated because of the geographical dispersion of mining facilities and different mining conditions.

To conclude, the mining sector is very rich in environmental issues as it is directly and physically in contact with physical extracting ores, metals, or other raw materials. The activity has, by definition, a destroying character. In this segment the decisive role is played by the commodities markets on the one hand, and the environmental and social issues on the other. Large mining companies often endeavour to minimize their ecological footprint and impact on local communities.

As has been already hinted, social issues are very relevant, as many multinational companies operate in jurisdictions with weak legal structures. Therefore, the issue of human rights comes to the forefront in some companies. In this regard, some companies prepare so-called antislavery statements. This activity is encouraged by The International Council on Mining and Metals, which was founded in 2001. The goal of this association is to improve performance in terms of sustainability and human rights in the CSR perspective. The real impact of these reports still remains to be assessed (see International Council of Mining and Metals, 2019).

3. Method

The main method of our research into sustainability reporting is content analysis. The analysis was performed using the identified sustainability reports of Rio Tinto and BHP-Billiton. A basic rating scale (0 or 1) was used for noting the presence or absence of information and a final count was obtained for each aspect of the particular sustainability report. Nevertheless, and also in line with the most often used method in previous papers on sustainability in mining industry literature, we use content analysis and assess the most frequent keywords related to the three aspects of CSR and Sustainability.

The initial choice of keywords was based on the 39 CR keywords identified by the Business Civic Leadership Center of the US Chamber of Commerce Link (Cohen, 2010). Furthermore, we have explored the keywords from international academic literature, and keywords based on the Global Reporting Initiative G3 framework.

From academic papers, the major inspiration for the proposed qualitative methodology was based on methodology created by Yakovleva and Vazquez-Brust (2012), and Mutti, Yakovleva, Vazquez-Brust and Di Marco (2012). The framework of CSR keywords as suggested by Carroll (1991), for developed countries and Visser (2008), for developing countries, were also consulted.

After such identification of suitable keywords their frequency was measured in relevant reports for each CSR category – economic, social and environmental. The frequency was measured manually; this means that identification of keyword was performed separately by two researchers. Each researcher was working on selecting keywords and phrases individually and then after discussion the researchers we came to conclusion with are the most appropriate ones and those keywords were then selected. In the next step we attempted to bring in the context in which the keywords were expressed most often. Illustrative coding examples were included. Here we have used the three most frequent words in each category. Here the purpose was to bring in the context of the identified statement. Initial inspiration of approaches to analysis of narrative information has been provided by paper by Clatworthy and Jones (2006). For coding of selected statements in this paper we have employed the method of coding qualitative information proposed by Osma and Guillamón-Saorín (2011:204), who provided classification of statements according to their emphasis.

As with any style of qualitative methodology working with narratives, we need to stress that we are aware of the shortcomings this qualitative approach may bring and, therefore, we performed a double check of the coding by two independent scholars as explained above.

4. Empirical analysis and findings

To provide the relevant context for the industry when the relevant reports were created, we studied the recent development of the commodities markets. A historical assessment of commodities market prices during the period of 2015–2017 shows a wholesale decline in the value of nearly all metals over the course of 2015 – with copper, in particular, experiencing a drop-in value of approximately 30% (Bloomberg data). The source of such volatility is explained by the fact that the primary driver of the world's commodities demand over the past decade, China, accounts for nearly 50% of global demand for cement, copper, aluminium, steel, iron, nickel, coal, and even pork (Desjardins, 2018). Investor fears were fuelled in early 2015 by an announced decrease in the Chinese projected annual GDP growth rate to under 7% (Economist). While a growth range of 6–7% would, rightly, be considered a source of envy for most economies, both market and company analysts were expecting the inevitable Chinese slowdown to occur at a later time. Market reaction to these fears spurred China to step in with both monetary and fiscal stimulus packages, effectively stabilizing prices and investor sentiment (Financial Times, 2015). Since then, a relatively stable supply-demand environment has resulted with China providing additional fiscal stimulus in 2017.

On a company-level, the stock prices of Rio Tinto and BHP-Billiton took on much of the 2015 market volatility, experiencing maximum declines of 34% and 44% respectively (Bloomberg data). It should be noted that BHP's stronger valuation decline was amplified by the Mariana dam disaster, the worst environmental disaster in Brazil's history (BBC, 2019). This heightened covariance is further evidenced by the fact that, as of 2018, 45% of Rio Tinto's revenues originated from China (Rio Tinto, 2018). Despite considerable exposure to both China and commodities, it would be reasonable to conclude that both companies will remain going concerns due to their size and effective operating history and that China will continue to intervene in periods of significant commodity or GDP growth uncertainty (The Economist, 2015).

In the analysis of responsibility reports we perform content analysis using the relevant CSR keywords as explained in methodology part. The initial choice of keywords was based on the 39 CR key words identified by the Business Civic Leadership Center of the US Chamber of Commerce as indicated earlier. We analysed the traditional three CSR dimensions based on the BHP Billiton company sustainability reports of 2015 and 2017 and the Rio Tinto company sustainability reports of 2015 and 2017. The aim is to compare the given periods and analyse the results. We also examine the differences between these two multinational corporations regarding their approach to responsible business practices.

Table 1. **CSR Keywords, BHP Billiton Sustainability Report 2015**

Numbers	Economic Responsibility	Count of words	Social Responsibility	Count of words	Environmental Responsibility	Count of words
1	Asset	73	Program	124	Water	191
2	Share	34	Community	118	Emissions	77
3	Increase	32	Local	102	Climate	72
4	Production	32	Employees	84	Material	61
5	Financial	23	Health	84	Energy	45
6	Profit	15	Compliance	44	Mining	35
7	Produce	14	Employment	29	Carbon	24
8	Growth	13	Fatalities	14	Green	16
9	Price	10	Conditions	10	Metal	14
10	Balance Sheet	0	Workers	3	Waste	10
TOTAL		246		612		545

(*Source:* BHP Billiton, 2015, and authors' own elaboration)

In Table 1, above, the CSR keywords are organized in relevant categories. According to our findings, the most frequently mentioned CSR aspect, in 2015, was social responsibility with 612 codings in total for the BHP Billiton company. Keywords, program, community, and local, were mentioned the most. This refers to the fact that, in this period, the company created new jobs and provided different services and infrastructure to support local economies. BHP Billiton also contributed to developing economies by providing help in improving the quality of life. The company was the major supplier of goods to markets in developing countries (BHP Billiton, 2015: 54).

According to the World Food Programme of 2015, people who suffered from hunger the most were living in developing countries. BHP Billiton invested 1% of their pre-tax profit in supporting community programs in 2015. The main aim of that investment was to contribute to increasing living standards globally (BHP Billiton, 2015: 54). To help poor families and reduce poverty, the company created a particular program that was based on providing access to such important services as education, healthcare, water, housing, and so on. That program helped more than 400 farmers and over 1,300 community members (BHP Billiton, 2015: 57).

In accordance with the World Economic Forum of 2015, the main problems were hunger, lives lost, and poverty. The big increase in retail food prices resulted in hunger and poverty, especially in poor regions around the world.

According to our findings, the second most frequently mentioned category, in 2015, for the BHP Billiton Company was environmental responsibility with 545 codings, in total. This regards, especially, such keywords as water, emissions and climate. In the broad context, this can be explained by the fact that 2015 was a year of storms. According to the World Economic Forum, the main problems were global climate change, natural disasters, lives lost, and so on. BHP Billiton understands that its operations can have an effect on the environment. The company is also aware of the big competition for natural resources, such as water, land and related issues of biodiversity (BHP Billiton, 2015: 34). According to the Financial Times, climate change and the growth of biofuels influences the global increase in food prices. This may have an impact on developing economies, especially on the poor ones. The company points out the importance of forests. "They regulate hydrological cycles, stabilise natural landscapes and protect soils and water courses. Forests also contain some of the world's most important global biodiversity and ecosystems, provide livelihoods for local communities and the world's poorest people, and support Indigenous communities and cultures" (BHP Billiton, 2015: 19).

According to our findings, economic responsibility, with 246 codings, was in third position, in 2015, in the BHP Billiton sustainability report. Here we identified, especially, such keywords as asset, share and increase, which were mentioned most frequently. This can be explained by the fact that, in 2015, income disparities increased, according to the World Economic Forum that was held in 2015 (see World Economic Forum, 2015). Moreover, 2015 was called a year of volatile economic conditions (BHP Billiton, 2015: 1). But despite that, the company's approach was stable and responsible towards its shareholders and employees.

To put the most frequent keyword in each category in context we attempt to provide example statements. For results see table 2.

Table 2. **Example of sentences, BHP Billiton Sustainability Report 2015**

Economic Responsibility	"Our assets include those under exploration, projects in development or execution phases and closed operations. Our Group Functions and Marketing are also included". [1]
Social Responsibility	"We also voluntarily committed US$225 million in community programs that have a long-lasting and positive impact on the quality of life for people across the world". [1]
Environmental Responsibility	"A sustainable society depends on biodiversity and its associated ecosystem services, such as food, air and water". [36]

(*Source:* BHP Billiton, 2015, and authors' own elaboration)

To compare the approach to sustainability issues we have analysed the keywords of the second mining company Rio Tinto. The same approach was utilized in keyword search and their classification. The results are presented in table 3.

Table 3. **CSR Keywords, Rio Tinto Sustainability Report 2015**

Numbers	Economic Responsibility	Count of words	Social Responsibility	Count of words	Environmental Responsibility	Count of words
1	Production	18	Program	77	Mining	60
2	Share	13	Community	69	Water	57
3	Increase	11	Local	51	Waste	50
4	Produce	9	Employees	47	Energy	29
5	Financial	6	Health	40	Emissions	23
6	Growth	5	Compliance	23	Material	18
7	Asset	3	Employment	21	Green	7
8	Price	0	Conditions	11	Metal	5
9	Profit	0	Workers	5	Carbon	5
10	Balance Sheet	0	Fatalities	4	Climate	4
TOTAL		65		348		258

(*Source:* Rio Tinto, 2015 and authors' own elaboration)

According to our findings, the most frequently mentioned keywords for Rio Tinto were also in the area of social responsibility with 348 codings, in total, with especially, such keywords as program, community and local. These are the same frequent keywords as for the BHP Billiton company. The global economic, social and environmental problems that happened during 2015 affected both multinational corporations. But, the companies' responses towards these problems were different. Rio Tinto approached social responsibility in this way. The company invested over $100 million per year to support education, health, agriculture, and reduce poverty. Those investments helped local schools, and improved housing, clinics and infrastructure globally (Rio Tinto, 2015: 36). In 2015, the company also organized a career day for the children of companies' employees. Around 75 high school children attended that event and received useful information on their future career development (Rio Tinto, 2015: 38). The second most frequently mentioned group of keywords for Rio Tinto, in 2015, are from the area of environmental responsibility, with 258 codings. The same responsibility for BHP Billiton, in 2015. Especially, such keywords as mining, water and waste. This was a key priority for Rio Tinto, in 2015. For example, the company received awards in two categories such as the Eco-Warrior Award and the Biodiversity Award for its contribution to environmental care (Rio Tinto, 2015: 27).

The third frequently mentioned for Rio Tinto, in 2015, was economic responsibility with 65 codings in total. Especially such keywords as production, share and increase. These keywords are exactly at the same level of priority as for the BHP Billiton company in 2015. This can be explained by the fact that economic global problems affected all people, including young ones who were excluded from the mainstream. Those problems reduced the sustainability of economic growth. Rio Tinto approached economic responsibility this way. In 2015, the company supported "employment and established a database of unemployed youth in host communities" (Rio Tinto, 2015: 20).

To provide broader context of used approach we have used a sentence with the most frequent keyword in each category as example. Please see the following table 4:

Table 4. **Example of sentences, Rio Tinto Sustainability Report 2015**

Economic Responsibility	"There was a decrease across all three scopes of greenhouse gas emissions. Total emissions dropped by 25 per cent compared to 2014. This was mainly due to reduced production as a result of a worldwide reduction in product demand". [31]
Social Responsibility	"We have made a significant investment to meet the emissions targets set for 2020 and we are well on track. Our Energy Leadership Programme (ELP) has played a role in emissions reduction by delivering a reduction of over 30,000Mwh of electricity, approximately 30,500 tonnes of CO_2 equivalence". [4]
Environmental Responsibility	"The minerals we mine are biologically inactive and their extraction has little or no impact on forest regeneration. Since RBM's operations started, the mining of sand dunes has been followed by a rehabilitation programme". [17]

(*Source:* Rio Tinto, 2015, and authors' own elaboration)

For time comparison we have exercised the keyword analysis using sustainability report of the same company two years later. We are aware that there is a question whether this time gap is sufficient to reveal any substantial differences. Findings are in the following table 5.

Table 5. **CSR Keywords, BHP Billiton Sustainability Report 2017**

Numbers	Economic Responsibility	Count of words	Social Responsibility	Count of words	Environmental Responsibility	Count of words
1	Asset	107	Community	70	Water	109
2	Share	34	Program	65	Emissions	76
3	Increase	18	Health	55	Climate	48
4	Production	16	Employees	54	Material	47
5	Financial	16	Local	48	Energy	30
6	Profit	11	Employment	20	Mining	20
7	Growth	7	Compliance	14	Green	14
8	Produce	7	Workers	10	Metal	13
9	Price	4	Fatalities	9	Carbon	9
10	Balance Sheet	0	Conditions	3	Waste	4
TOTAL		220		348		370

(*Source:* BHP Billiton, 2017 and authors' own elaboration)

According to our findings, the most frequently mentioned keywords, in 2017, for the BHP Billiton company were those related to environmental responsibility with 370 codings, in total. Especially such keywords as water, emissions and climate were mentioned the most frequently. In 2015, BHP Billiton had the same frequent keywords. This can be explained by the fact that these three aspects are still top priorities for this company in both years 2015 and 2017. Let us look at the company's approach towards these key issues, in 2017. BHP Billiton understands the world competition for natural resources, such as land, water and natural resources. That kind of competition for natural resources among multinational corporations can be explained by the fact that climate change and global warming are still major problems. The company wants to approach them responsibly and contribute to protecting the environment (BHP Billiton, report, 2017: 36). BHP Billiton continues its program for reducing gas emissions. It also concentrates on biodiversity. In 2017, the company set a particular long-term goal to be achieved, in future, regarding international sustainability agreements, including the Paris Agreement. To achieve this goal, the company will approach all resources responsibly and take care of its employees (BHP Billiton, 2017: 11).

The second most frequently mentioned group of keywords for the BHP Billiton company, in 2017, were keywords from social responsibility with 348 codings, in total. Especially, such keywords as community, program and health. In comparison with 2015, the first two keywords stayed the same, but the third one has changed. This can be explained by the fact that health is still a major issue for all people, communities and nations. According to the UN, in 2017, the health problems were discussed globally as a matter of importance. Let us look at the company's approach, in 2017, towards community, program and health. BHP Billiton introduced the "Graduate Development Program", which was focused on supporting graduates to help them to go through the "transition into non-graduate roles" (BHP Billiton, 2017: 20). What is more, the company's employees "received 43 hours of training" devoted to health and safety issues in 2017 (BHP Billiton, 2017: 20).

The third most frequently mentioned group of keywords, in 2017, for BHP Billiton was economic responsibility with 220 codings in total. Especially, such keywords as asset, share and increase. These are exactly the same frequent keywords as in 2015. Let us look at the company's approach towards economic responsibility in 2017. For example, BHP Billiton created a project that would contribute to the tourism industry in northern Chile, to help regional development (BHP Billiton, 2017: 26). The company understands the importance of small local businesses and supports them. It creates jobs for local people and provides training for small businesses (BHP Billiton, 2017: 25).
To see he context of analysed keywords we use the sentences where the most frequent keyword in each category are represented. Results are in table 6:

Table 6. **Example of sentences, BHP Billiton Sustainability Report 2017**

Economic Responsibility	"Our approach to sustainability is defined by *Our Charter* and realised through *Our Requirements* standards. These clearly describe our mandatory minimum performance requirements and provide the foundation to develop and implement management systems at our assets". [6]
Social Responsibility	"Importantly, we also made significant contributions to the world we live in. Our voluntary social investment of US$2.3 billion in community programs since 2001 has benefitted communities across the globe". [2]
Environmental Responsibility	"At the end of FY2017, all our assets that identified water-related material risks implemented at least one project to improve the management of associated water resources, consistent with performance over the course of the target period". [37]

(*Source:* BHP Billiton, 2017, and authors' own elaboration)

Similarly, as for the year 2015 we exercise the keyword analysis of the second company Rio Tinto using sustainability report from 2017. Our findings are in table 7.

Table 7. **CSR Keywords. Rio Tinto Sustainability Report 2017**

Numbers	**Economic Responsibility**	**Count of words**	**Social Responsibility**	**Count of words**	**Environmental Responsibility**	**Count of words**
1	Share	52	Health	155	Water	211
2	Asset	29	Local	119	Emissions	108
3	Produce	26	Employees	98	Mining	74
4	Production	21	Community	92	Green	57
5	Increase	18	Program	82	Material	57
6	Growth	15	Employment	43	Energy	55
7	Price	13	Compliance	27	Climate	53
8	Financial	10	Fatalities	23	Carbon	47
9	Profit	0	Conditions	10	Waste	43
10	Balance Sheet	0	Workers	5	Metal	36
TOTAL		184		654		741

(*Source:* Rio Tinto, 2017 and authors' own elaboration)

According to our findings, the most frequently mentioned CSR area for the Rio Tinto company, in 2017, was environmental responsibility with 741 codings, in total. This concerns especially, such keywords as water, emissions and mining were mentioned the most often. We can see that BHP Billiton company has the same priority towards environmental responsibility in 2017. We pointed out the global competition for natural resources such as land, water, and so on. Both multinational corporations had the goal to approach the environment responsibly. The company also understands the importance of access to water and other resources through its responsible management.

For Rio Tinto, the second most frequently mentioned group of keywords was social responsibility with 654 codings in total in 2017. The keywords, health, local and employees were quoted the most often. We would like to point out that health stays the top priority issue for both corporations. Let us look at Rio Tinto's approach towards social responsibility and health issues. The company cares about safety – the physical safety and mental health of its employees. The company supports a positive work environment to improve employees' wellbeing and productivity (Rio Tinto, 2017: 21). What is more, "Rio Tinto is committed to empowering all employees to make positive choices towards a fulfilling life and healthier future. One of the initiatives supporting this includes participation in the Virgin Pulse Global Challenge in 2018" (Rio Tinto, 2017: 22).

For the Rio Tinto company, the third most frequently mentioned CSR area, in 2017, was economic responsibility with 184 codings, in total. We identified especially, such keywords as share, asset and produce. Let us look at the company's approach towards economic responsibility. In 2017, Rio Tinto created jobs, made investments and provided business opportunities for locals and communities. The company pointed out its progress towards sustainability. "We are equally proud of the economic contribution we make across communities and generations. From the Pilbara in Western Australia to the far north of Canada, with our partners, customers and suppliers" (Rio Tinto, 2017: 4).

Finally, to bring in the context for the most frequently used keywords we also provide sample sentences of the words used. Results are summarized in table 8.

Table 8. **Example of sentences, Rio Tinto Sustainability Report 2017**

Economic Responsibility	"We pursue opportunities for productivity improvements, cost reductions and prudent growth. Through enhancements like these, we aim to stay ahead, securing our activities so that we can deliver greater shared value for our stakeholders, for longer". [8]
Social Responsibility	"At Rio Tinto, we are committed to operating our business responsibly, with respect for the safety and health of our people, our communities and the risks and responsibilities of our business locally and globally". [6]
Environmental Responsibility	"For Rio Tinto, water is not solely about constrained supply. Each of our operations has its own water context – while some operations are located in water-scarce environments, others must manage intense rainfall. At some sites, mining below the water table brings challenges as to how we manage dewatering and water disposal". [35]

(*Source:* Rio Tinto, 2017, and authors' own elaboration)

5. Discussion

In this paper, we analysed two particular periods of time, the years 2015 and 2017, based on the companies' sustainability reports. The results of those years are distinct because of the different stress on the three traditional CSR dimensions.

We found out that, in 2015, social responsibility was the first priority for both BHP Billiton and Rio Tinto. Both companies mentioned such key issues as program, community and local. In 2015, they developed their future approaches towards all social investments and social responsibility itself. The second priority for both corporations, in 2015, was environmental responsibility. The most frequently mentioned keyword for BHP Billiton and Rio Tinto was water.

The companies were aware of the strong competition, in 2015, for all resources, including land and water. This is the reason BHP Billiton and Rio Tinto recognise the importance of approaching water resources responsibly and managing them appropriately. The water issue was also mentioned by Mudd (2008), who pointed out that some mining corporations have eventually managed to reduce water consumption. The third priority for both companies, in 2015, was economic responsibility. The most frequently mentioned keywords for them were share and increase. According to the sustainability reports of 2015 of BHP Billiton and Rio Tinto, the companies made investments to support community programs, especially such key areas as education, healthcare, agriculture, and so on.

We compared the 2015 results of both companies with the results of 2017 and found out that environmental responsibility was the first priority for BHP Billiton and Rio Tinto, in 2017. Especially, such keywords as water and emissions. We can see that water still remained a serious issue, over the years, for both corporations. They point out that water is a valuable resource and is significant for all global players. Moreover, both BHP Billiton and Rio Tinto managed to reduce their emissions.

For example, Rio Tinto reduced its greenhouse gas emissions intensity by 27% (Rio Tinto, 2017). According to the sustainability reports, since the emissions were reduced productivity has increased significantly, which is a positive aspect of the companies' economic responsibility. Northey, Haque and Mudd (2013), pointed out the importance of annual companies' sustainability reports reflecting their positive improvements towards sustainable development.

The second priority, in 2017, for BHP Billiton and Rio Tinto was social responsibility. Both companies concentrated mostly on health issues and put the physical and mental health, and the safety of their employees first. For example, BHP Billiton provided 43 hours of training to all its employees, in 2017, to improve their knowledge of key health and safety issues (BHP Billiton, 2017).

The third priority, in 2017, was economic responsibility for both companies. They concentrated mostly on assets and shares. We can see that the companies' approach to economic responsibility changed in comparison with 2015. For example, BHP Billiton "sponsored the Common Roots, Common Futures: International Indigenous Governance Conference in Australia in March 2017" (BHP Billiton, 2017: 29). That Conference had a positive effect on socio-economic development.

We would like to point out that sustainability has become an important part of companies' decision-making process. Corporations also appreciate the advices from experts on sustainability issues. For example, there is a Forum on Corporate Responsibility that is organised by BHP Billiton. This Forum is significant for company's stakeholders. Eight sustainability different experts attend the Forum and contribute to the company's approach to corporate social responsibility.

BHP Billiton operates in accordance with the United Nations' Sustainable Development Goals (SDGs) (BHP Billiton sustainability report, 2017: 7). The main goals are: improvement of the people's wellbeing, contribution to the future generations' development and addressing the international important issues regarding sustainable development. BHP Billiton is a global company and it contributes to sustainable development process by making social investments, managing its production, creating jobs and paying different taxes.

Rio Tinto is also a global company and it is a member of many international, national and regional organisations, including the above mentioned United Nations' Sustainable Development Goals (SDGs). "The SDGs are a set of 17 goals and 169 targets endorsed by the UN in 2015 that present a broad sustainability agenda focused on the need to end poverty, fight inequality and injustice and respond to climate change by 2030 (Rio Tinto sustainability report, 2017: 63).

6. Conclusions

We chose these two multinational corporations (MNCs) because they are the world's top producers in the mining sector. In our paper, we analysed their annual sustainability reports from two different time periods and compared the results. We should point out that both companies are coming, historically, from the Anglo-Saxon tradition and their reports are expected to follow the most conservative rules.

In this final part of the paper we would like to analyse MNCs approach globally. We have noticed that there is a growing debate on sustainable development issues and MNCs position in the world. The developing public interest in sustainability issues contributes to the debate and then, later on, to the discussion of the traditional three CSR dimensions.

Multinational Companies (MNCs) in the extractive industries, specifically those engaged in mining, are under intense pressure and scrutiny from various societal forces: environmental, indigenous peoples and human rights movements, which have been formed in response to concerns about the social and environmental impacts of operations, especially in developing countries e.g. Warhurst and Mitchell (2000); Warhurst (2001) and Kapelus (2002).

Moreover, top mining corporations are now perceived as responsible and flexible global players that can not only communicate effectively with their stakeholders, suppliers, customers, employees, and so on, but also facilitate the development of communities globally and support locals. In terms of performance, the main aspect is that CSR does have a significant effect on poverty reduction, especially in the poorer regions. CSR has also influenced society's wellbeing. The perception of MNCs has changed over the years. They are perceived positively if they manage their global business as responsibly as BHP Billiton and Rio Tinto multinational corporations.

For example, Rio Tinto's approach to communities and social performance is serious and responsible. The company manages to support good relationships with all communities, especially with those who were affected the most by its activities. The corporation has become a trusted partner to all communities (Rio Tinto, 2017). Rio Tinto manages all social risks and encourages long-term agreements with communities. The company is successful at this because it has particular local knowledge and understanding of key issues.

BHP Billiton has its own approach towards communities and locals. The company also respects good relationship with communities that are based on trust. BHP Billiton encourages long-term relationships and supports local cultures. The corporation helps economies to develop and increase people's living standards. It contributes to local economies by creating jobs, providing opportunities for people, supplying goods and services and supporting the development of infrastructure (BHP Billiton, 2017). BHP Billiton "contribute[s] to the achievement of the United Nations' (UN) Sustainable Development Goals" (BHP Billiton, 2017: 24).

When we analyse other MNCs we need to take into account the three challenges that multinational corporations usually cope with. The first one is global integration and standardization. The MNC needs to adopt these procedures to increase its productivity. The second one is local adaptation. A multinational corporation has to be locally responsible and seriously approach the social, cultural and environmental aspects of different countries and regions globally. The third challenge, that MNCs should encourage, is global learning to improve peoples' knowledge of particular important issues, provide training and increase innovation, see Cruz and Boehe (2010).

It is said that to increase its own competitive advantages and become the world's top producer, a company has to approach social and environmental issues seriously and take responsible actions towards people's wellbeing. Each time when MNCs operate in a different country or region it should be more attentive towards local community needs. What is more, MNCs should strategically use the main three CSR dimensions.

To conclude, we could add that MNCs may develop further and apply the particular knowledge that was gained during their international operations. Furthermore, MNCs should be always aware of the importance of their relationship with all groups of stakeholders.

As a limitation of this research can be seen the short time span between the Sustainability reports examined. Therefore, we would recommend repeating the research in about two or three years in the future to see the development and possible new topics arising.

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The adoption of integrated reporting in Lebanon

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Abstract: *Integrated thinking is the dynamic reflection of the relationships between the organization different operating and functional units and the capitals used as defined by the IIRC. The integrated decision making and actions that take short medium and long term value creation can be attained by adopting integrated thinking. Managers and employees must, however, be aware of a matrix of considerations that combines each of the six capitals (i.e. financial, manufactured, intellectual, human, social and natural) with each functional unit in an organization. Integrated reporting applies principles and concepts that emphasizes on having the reporting process more cohesive, efficient and adopting' integrated thinking'. It improves the quality of the information available to financial capital providers so that the allocation of capital is more efficient and productive. Previous researchers studied integrated reporting and its importance on the welfare of the organization; however, none of the studies investigated practically the effect of integrated reporting on business profitability and sustainability. The aim of this paper is to investigate the variable affecting the adoption of integrated reporting in Lebanon. The researcher will conduct a questionnaire in order to support the paper objectives. The sample will consist of banks, audit firms and multinational companies. This paper will help in extending the knowledge and the deep understanding of integrated reporting as a crucial basis in organization development and sustainability.*

Keywords: *Integrated reporting, <IR> Framework, International Integrated Reporting Council, Integrated thinking.*

1. Introduction

As businesses face universal competition, technological innovation and more regulation in response to financial disaster, the world economy is constantly changing. The accounting profession argues that the traditional model of financial reporting does not sufficiently meet the information needs of stakeholders to evaluate the current and future performance of a company (Flower, 2015).

Stakeholders want to know the environmental effects of the activities of companies and, most significantly, the financial position. Therefore, companies need to meet the stakeholder's needs by disclosing financial and nonfinancial information in order to be viable and attractive in the business world. The company therefore discloses financial and nonfinancial information through various reports. In support of IR, practitioners of integrated reporting claim that IR provides greater simplicity in the companies promise to sustainability by representing the financial and sustainable performance links in a single document (Adams, 2013; Eccles and Krzus, 2010).

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To meet the demands, organizations must focus on more than just maximizing profit. The company's long-term value is growing in importance. According to the IIRC the needed step in the corporate reporting development should be the communication on value creation which can be achieved through an integrated report (IIRC, 2013:1). The main aim of this paper is therefore to summarize some insights into integrated reporting, which can support the adoption of IR. In addition, it highlights integrated reporting features such as changes in business performance, integrated thoughts and enhanced reputation. These eventually respond why an integrated reporting system should be adopted by the company.

2. Literature review

This section starts with an integrated reporting philosophy and the definition of integrated reporting, and then we expand the basic integrated reporting concepts such as capital and value creation. Moreover, we will emphasize on integrated thinking and the principle-based approach.

2.1. Integrated reporting philosophy

A number of changes or developments are brought by integrated reporting. It catalyses a strategic rather than an operational centre, a long-term rather than a short-term outlook. Also it induces a prospective rather than a retrospective analysis. Moreover, it delivers both qualitative analysis and quantitative information. A broader business performance metric is reported in the integrated report compared to compliance with the audit (Owen, 2013:340). The integrated reporting framework specifically seeks to endorse long-term thinking, and to support decision-making, allocation of capital and to discourage short-term behaviour. A fundamentally different approach is promoted by the framework. In contrast to the disclosure of current financial and non-financial reports in a snapshot period, integrated reporting is moving towards a more transparent action. It is regularly used in most forms of media and communication (Soyka, 2013).

A more comprehensive, complex and clear representation of the company is provided by integrated reporting. The organization was provided by integrated reporting a richer picture based on a broad dimension of information origin, including subjective and quantifiable data. Integrated reporting matches the need of a user context contrary to the financial supervision which is the shareholder perspective. Accountability is applied when customers, creditors, suppliers, employees, the local community and the general public have all legitimate rights to publish information (Owen, 2013). The priority of the stakeholders depends on the organization social, political and economic perspective. By focusing on conciseness, reliability and materiality, the report details are reduced. Information requirements can be met through a shift to technology-based reporting.

2.2. Integrated reporting

Integrated reporting is described as the integrated thinking process that proceeds in a regular integrated report about the creation of value and communication of its aspects. (IR, 2016). It upgrades the organization way of thinking in reporting and planning their business story. The most important point of integrated reporting is creation of value and its effect on the organization. Therefore, integrated reporting is used for the communication of strong, brief integrated story to describe how all assets are involved in the value creation. Integrated reporting is assisting organizations in thinking about their plans, strategies, and managing their risks. Also it helps them to build stakeholders confidence and enhance the organization future performance to drive a universal development in corporate reporting (IR, 2016).

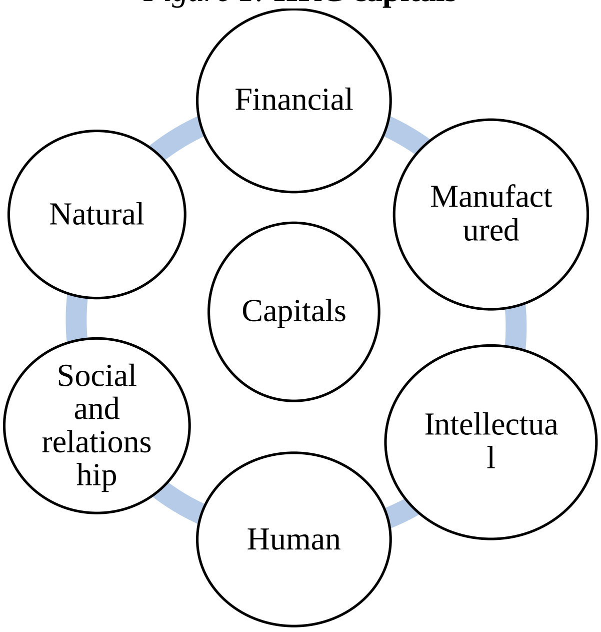
In august 2010, the IIRC was formulated. The accountancy profession, preparers and controllers represent around half of the council participants. The IIRC acknowledged the basic principles of social and ecological accounting, the impact on all resources of the society should be reflected by the company reporting (Flower, 2015). The success of the company is depending on different types of resources and connections. These resources and connections can be comprehended as variety capital forms (IIRC, 2011).

The integrated report should specify the way of value creation through the organizations activity. The measurement of this value is by changing these capitals value (Flower, 2015). Integrated reporting concentrates on the organization's capability of value creation. Integrated reporting stresses on the integrated thinking importance within the company (IIRC, 2013). The mentioned three aspects are integrated reporting fundamental concepts. The three important concepts are the six capitals used and enhanced by the business, the business model of the organization and the value creation (Busco *et al.*, 2013).

2.3. Capitals

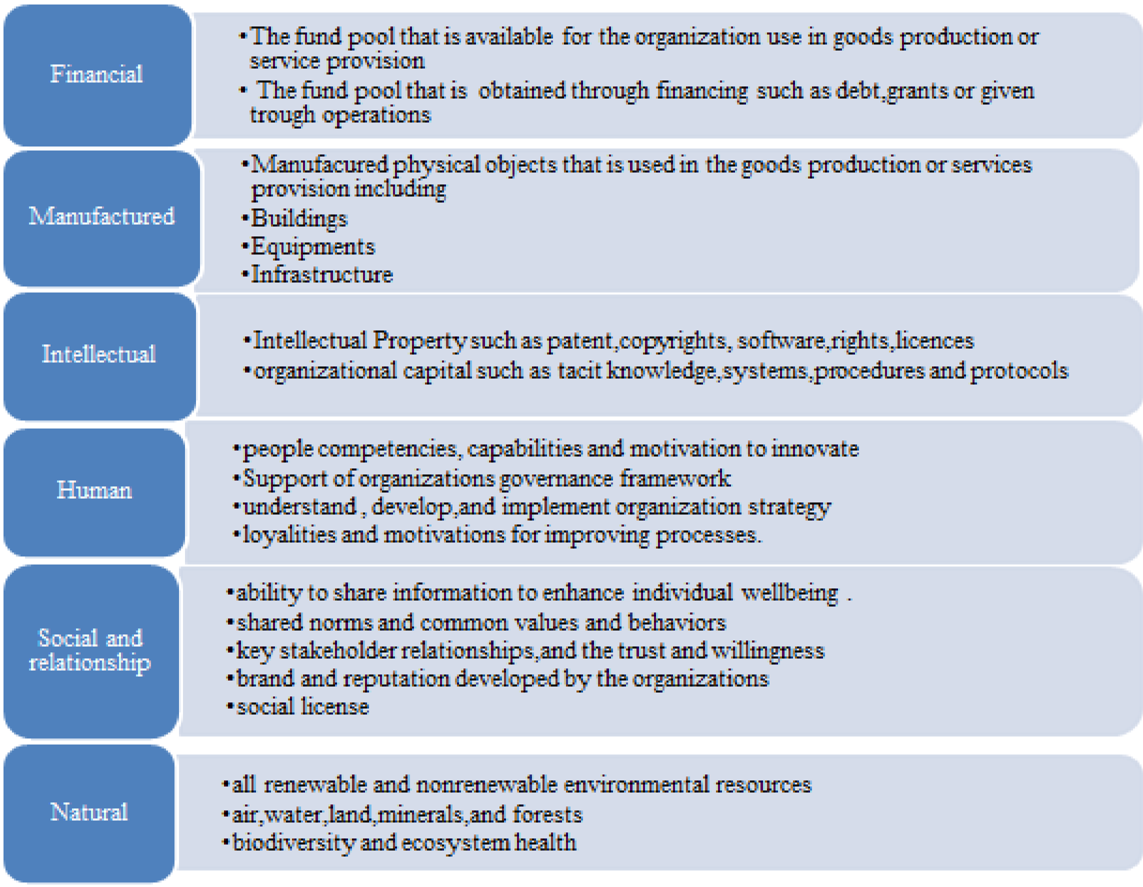
The capitals discussed in the integrated report are introduced by the IIRC. The capitals are resources and relationships that an organization use or affects. Figure 1 represent the classifications of the capitals and figure 2 elaborate its classifications. These categories are not required to be adopted by organizations but to be presented as a guideline to make sure that there is no capital used or affected is disregarded (IIRC, 2013).

Figure 1: **IIRC capitals**



(Source: Author, based on the IIRF)

Figure 2: **Description of the IIRC capitals**



(Source: Author, based on the IIRF)

2.3. Value creation

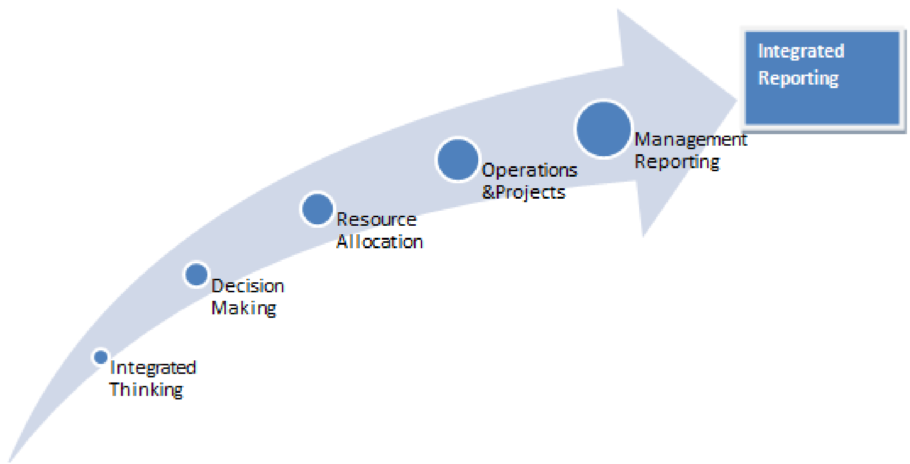
All stakeholders are assisted by the integrated report in order to be able to create value over time. The core purpose of integrated report is to clarify how the business creates value to financial capital sources, staffs, clients, providers, business partners, local groups, representatives, managers and policy creators (IIRC, 2013).

2.4. Integrated thinking

The IR framework is determined by integrated thinking, which should guide to the creation of value through integrated decision-making and implementation. Integrated thinking stimulates organizations focusing on connectivity and interdependencies between different factors that have a significant impact on their capability to create value (Busco *et al.*, 2013). Integrated reporting should therefore increase connectivity. The external report should be based on internal management information which should be reliable, independently verifiable. The accountant can be called a value creator, value enabler, value maintainer and value reporter. Moreover, accountant could be a communicator, manager and business leader. In addition, integrated reports should also be flexible and developable (Owen, 2013).

Figure 3 shows the steps to go from integrated thinking to integrated reporting.

Figure 3: **Path to reach integrated reporting**



(Source: Author, based on the IIRF)

A quantitative and qualitative information combination should report an organization's capability to create value. An integrated report makes the connectivity of information explicit in order to communicate the creation of value over time (IIRC, 2013). The materiality concept should be considered when composing the integrated report.

It can be concluded that the integrated report includes activities, relationships and interactions with material impact on an organization's capability to create value (IIRC, 2013).

Finally, the utmost vital characteristics of integrated reporting are:

- The creation of value of various principals over time, taking into consideration the short and long-term values and integrated, and
- A modification in decision-making processes, communication processes, substantive processes and risk identification should be affected by the first preparation of integrated report (Adams, 2015).

Other advantages identified in the preceding studies are:

- Greater accuracy in the non-financial information provided;
- Greater confidence levels for basic users; superior recognition of opportunities
- Higher engagement to investors and other collaborator
- Improved public appearance (Frias-Aceituno *et al.*, 2014).

Against the recommended advantages of integrated reporting, not everyone strengthens the adoption of an integrated report. Following the launch of the IIRC's integrated reporting framework in 2013, many authors criticize this version of the framework. They argue that accounting is a social structure that can be used as a political instrument (Rodrigue, 2015). His study spotlight on the link between accountability, human rights and public disclosure policy aspects.

According to Adams (2015), the integrated reporting purpose is not to address sustainability, but to shift the target of reporting to long - term comprehensive thinking about strategy, methods of value creation and the business model.

3. Methodology

There is a qualitative approach to this study. For two reasons, this was considered more appropriate for this study than a quantitative approach. First, the universal separation between qualitative and quantitative research is that qualitative research objective is to create a new theory, while quantitative research attempts to examine hypotheses and offered theories (Bryman & Bell 2003, p. 27).

Data were gathered by surveying managers and institutional employees. 98 questionnaires were distributed using Google form to local and international companies in Lebanon. By definition, data collection is the process in which primary data are collected from samples through surveys, questionnaires and interviews to answer the research question or problem in order to produce original research results (Bryman & Bell, 2015). Questionnaires have been the easiest and fastest method of data collection.

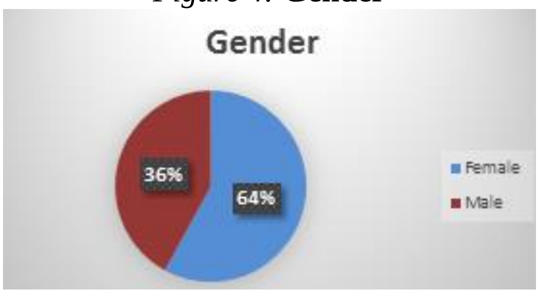
A descriptive analysis is applied in this study. Descriptive statistics are used in a controllable form to display quantitative descriptions. This method helps us to reasonably simplify large amounts of data. It reduces many data to a simpler summary. Regression analysis was conducted to verify the relation between the dependent variable (Adoption of integrated reporting) and the independent variables (Education, and Occupying a position in the accounting department). In order to be able to apply multiple regression, multicollinearity must be checked to exclude the correlated values with the lower level of significance. Multiple regression between the dependent variable (Adoption of integrated reporting) and the independent variables (Education and Occupying a position in the accounting department) proved that there is a significant impact of the independent variable on the adoption of integrated reporting.

4. Results and discussion

We collected the questionnaires and analysed the results according to responses. We will present a descriptive analysis of the results and the regression analysis results.

Gender. Figure 4 depicts the respondents' demographic according to the gender. Of the n=98 participants, 64% were female (n=63) and 35% were male (n=35). Female respondents were more outgoing and willing to participate in the area the research was conducted. This research result on gender can be related to Thompson and Conradie (2011:45), who mention that women's willingness to participate in community duties is motivated by their instinct as women to protect and secure an acceptable socio-economic level for the wellbeing of their families.

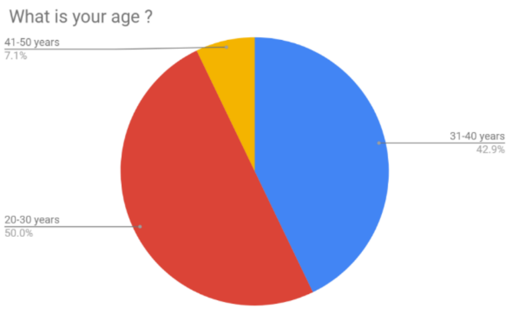
Figure 4: **Gender**



(Source: Author's projection)

Participants' age. The questionnaire had a category of age designed to describe a respondent's age. Respondents were asked to choose their respective categories of age. Figure 5 captures how the age was considered and what the responses were in each of the categories. This figure shows that the majority of respondents, n=49 (50%), were aged between 20-30 years. The second-highest category with the frequency of n=42 (42.9%) were respondents categorized between 30-40 years old. With a frequency of n=7, 7% were over 40 years old. From the research result, the majority of respondents were young.

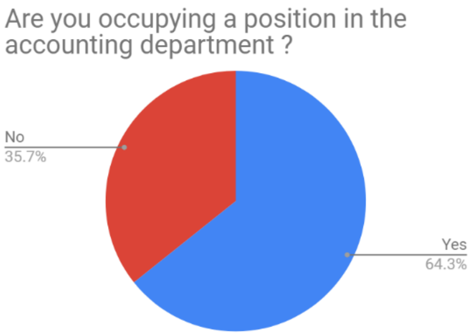
Figure 5: **Participants' age**



(Source: Author's projection)

Position occupied. The questionnaire had a question to identify the position occupied for the participant. Respondents were asked to answer if they are occupying a position in the accounting department. Figure 6 shows that the majority of respondents, n=63 (64.3%), are occupying position in the accounting department and only n=35 (35.7%) are not occupying a position in the accounting department. From the research result, the majority of respondents are occupying position so this will make our research more valid.

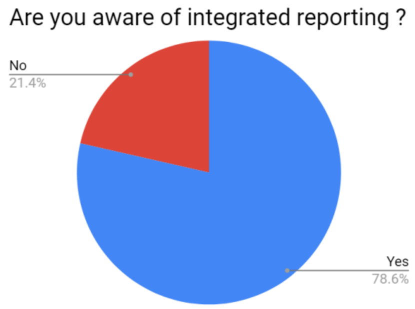
Figure 6: **Position occupied**



(Source: Author's projection)

Integrated reporting awareness. The most common result concerning whether **the employees are aware of integrated reporting** of the area the research where conducted were "Yes" with an n=77 representing (78.6%), answers that they are aware of integrated reporting. The remaining n=21 representing (21.4%) results were "no", they answered that they are not aware of integrated reporting. This means that the majority of the employees in the accounting department are aware of integrated reporting. Figure 7 represents the employee's awareness of integrated reporting

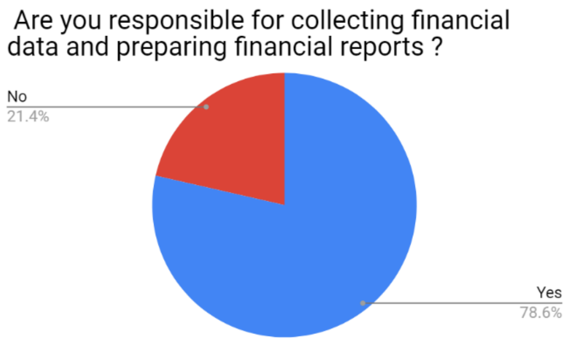
Figure 7: **Employee's awareness of integrated reporting**



(*Source:* Author's projection)

Collecting financial data and preparing financial reports. The question was asked to identify the responsibility of the respondent in the accounting field. The result shows an important factor in the answers of the respondents where n=77(78.6%) are responsible for collecting data and preparing financial reports and only n=21 (21.4%) answered No. The result also shows that the majority of the respondents are responsible for data collection and reporting.

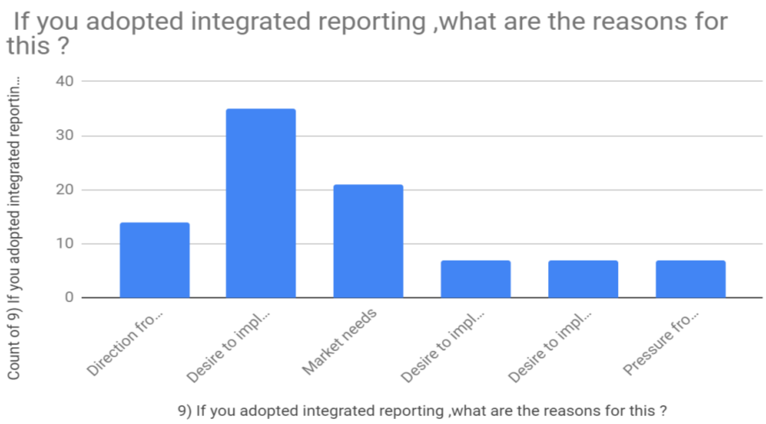
Figure 8: **Respondent's responsibilities**



(*Source:* Author's projection)

Reasons for adopting integrated reporting. The question was asked to identify the reason for adopting integrated reporting. The question was to tick the reasons for adopting integrated reporting, the choices were the following, pressure from regulators, desire to implement integrated thinking within your organization, direction from management, pressure from investors and market needs. The result shows the major reasons as shown in Figure 8 is desire to implement integrated thinking within your organization where n=35 respondents choose it where seven of respondents they answered desire to implement integrated thinking within your organization and market needs and n=7 answered desire to implement integrated thinking within your organization and direction from management and n=7 they answered desire to implement integrated thinking within your organization and pressure from investors. The results show also that the majority of the respondent answered they are willing to implement integrated thinking within your organization.

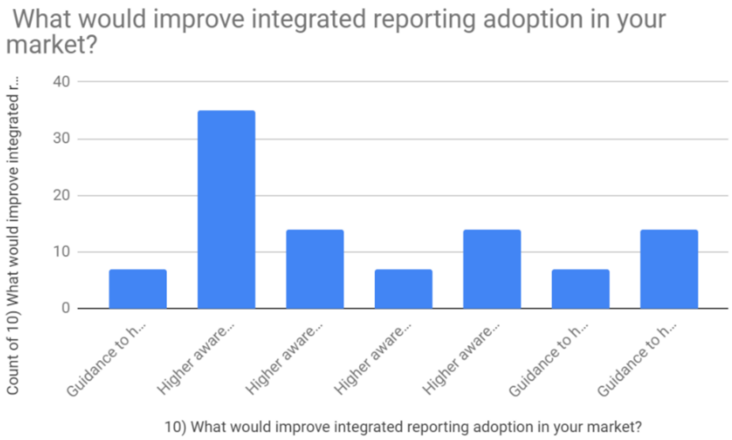
Figure 9: **Respondent's reasons for adopting integrated reporting**



(Source: Author's projection)

Integrated reporting ways of improvement. The question was asked to identify what will improve the adoption of integrated reporting. The question was to choose between higher awareness of integrated reporting and its goals, stronger endorsement from leading company, guidance to help preparers, evidence of benefits and training and guidance from established and approved providers. The major reason as shown in Figure 10 is higher awareness of integrated reporting and its goals.

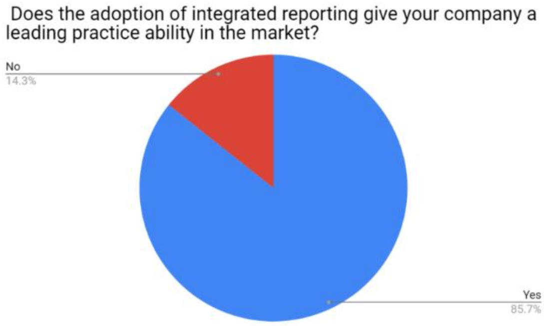
Figure 10: **Improvement for adopting integrated reporting**



(Source: Author's projection)

Integrated reporting adoption. The question was asked to identify if the adoption of integrated reporting will give leading practice ability in the market. As shown in the figure 10 where n=84 (85.7%) of the respondents answered "Yes" and only n=14 (14.3%) answered "No".

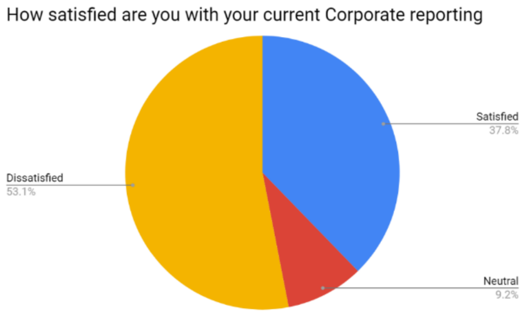
Figure 11: **Integrated reporting adoption**



(*Source:* Author's projection)

Current corporate reporting satisfaction. The question was asked to identify the level of satisfaction with the current corporate reporting. The results show that only n=37 (37.8%) are satisfied with their corporate reporting where the majority of the respondents are not satisfied representing 53.1% so there is a need to adopt integrated reporting in the market.

Figure 12: **Current corporate reporting satisfaction**



(*Source:* Author's projection)

Statistical relationship

Table 1. **Regression analysis**

Dependent Variable: ADOIR				
Method: Least Squares				
Date: 05/05/19 Time: 14:02				
Sample: 1 98				
Included observations: 98				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
EDU	0.411093	0.052581	7.818312	0.0000
POSA	0.315171	0.050089	6.292168	0.0000
C	0.365090	0.049396	7.391038	0.0000
R-squared	0.574062	Mean dependent var		0.857143
Adjusted R-squared	0.565095	S.D. dependent var		0.351726
S.E. of regression	0.231954	Akaike info criterion		-0.054421
Sum squared resid	5.111256	Schwarz criterion		0.024711
Log likelihood	5.666616	Hannan-Quinn criter.		-0.022414
F-statistic	64.01858	Durbin-Watson stat		2.012521
Prob(F-statistic)	0.000000			

ADOIR is referred to the adoption of integrated reporting (1=Yes, 0=No).
POSA is referred to Occupying a position in the accounting department (1=Yes, 0=No).
EDU: is referred to Education (Bachelor =0, Masters =1).

(*Source*: Compiled by the author)

The below equation was shown in table 1:

$$ADOIR=0.411\ EDU + 0.315\ POSA +0.365$$

R-squared is a goodness-of-fit measure for linear regression models. It indicates the percentage of the variance in the dependent variable that the independent variables explain collectively. R-squared measures the strength of the relationship between the model and the dependent variable on a convenient 0 – 100% scale. The R-squared is equal to 57 percent of the variation in y is explained by the variation in predictors EDU & POSA. R-squared of 57% reveals that 57% of the data fit the regression model. So the adoption of integrated reporting in Lebanon is affected by the educational background of the employees and the if they are occupying positions in the accounting department.

3. Conclusion

An integrated report tries to tell a story about the journey of an organization to reach its vision, reporting on its historical and intended performance. Most importantly an organization should demonstrate that its focused tactics and strategies underlie its values and are enacted towards reaching the vision during the reporting period. Integrated reporting should make accountability and performance in an organization transparent, but depends on the ethical qualities (such as honesty, fairness) embedded in the organization's values being upheld.

The main purpose of this paper was to find out why companies are slow at adopting IR and what needs to be done to ensure IR is embraced by all firms in developing countries, especially those on the African scene. Our purpose was achieved through an interview of senior officers of the professional accountancy bodies and regulators and various officers responsible for the preparation of integrated reports in listed firms in Uganda. Results suggest that firms are slow to adopt IR because of the scarce and minimal resources, culture and leadership, stakeholders demand, the regulatory requirement, the effect of globalization and the mind-set, lack of awareness about IR and the nature of business and size.

From the practical perspective, implementing IR could be complex, but what it can do for business entities is notable. Henceforth, this paper would like to recommend every business entity to adopt IR as their business reporting tool by each business entity in Lebanon. It is evident after the discussion that integrated reporting is the most operative method to communicate with stakeholders, demonstrating a company's whole image of upcoming aims and links between financial enactment and reporting on firm community and environmental accountabilities. IR also helps with its integrated thinking and decision-making process to improve the business model and strategy.

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The evolution of integrated reporting practices - empirical evidence from recognized reporters

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Abstract

Idea: *To assess the evolution of integrated reporting in practice. Insights on integrated reporting progress are developed based on a compliance level assessment. The IIRC Framework suggestions regarding content elements are applied for the integrated reports examination.*

Data: *Integrated reports belonging to 22 IIRC recognized reporters are analysed, on an eight-year period. Considering that the organizations did not publish integrated reports each year, the final sample contains 102 reports. The source for this data is the IR Examples Database.*

Tools: *This study employs a particular form of content analysis which includes a weighted scoring approach. This method enables categorizing reports on different levels of disclosure quality.*

What's new? *The integrated reporting practice has considerably progressed since the IIRC establishment as the global leading organization in policy development. Although the compliance level with the IIRC suggestions varies, since the publication of the Framework in 2013 all studied organizations have furtherly developed their reporting policies.*

So what? *Integrated reporting is a new corporate reporting paradigm, introduced by the IIRC as a solution to all shortcomings of traditional reporting. This reporting policy is rather new and many companies are still unsure of how to prepare a truly integrated report. This study aims to provide a better understanding on integrated reporting and how it should be implemented.*

Contribution: *Providing better understanding of integrated reporting and developing insights on the progression of this corporate reporting practice. This research contributes to relevant literature by analysing the translation in practice of integrated reporting.*

Keywords: *Content analysis, content elements, IIRC Framework, integrated reporting, scoring.*

1. Introduction

An increased tendency amongst companies to report on social and environmental issues is observed in the past twenty years. Accordingly, corporate reporting practices grew in complexity, as organizations have to disclose extensive information in order to meet the stakeholders' needs (Du Toit *et al.*, 2017). In addition, the accounting profession contested the traditional financial reporting model, arguing that it does not adequately meet stakeholder information requirements in assessing past and future performance of a company (Flower, 2015).

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As a response to the raised issues, companies developed their corporate reporting practices, focusing on voluntary disclosures regarding the transparency and corporate responsibility policies (Dumay *et al.*, 2016). Therefore, organizations started to produce sustainability and corporate social responsibility reports, as the stakeholders required more non-financial information. (Lee and Yeo, 2016). Leading companies have begun to integrate all their corporate communications, disclosing only “One report” (Eccles and Krzus, 2010), producing integrated reports with the purpose of achieving sustainable development.

Integrated reporting is the most recent concept meant to resolve the shortcomings of financial and sustainability reporting and has emerged as the new reporting paradigm. However, in the last period, the integrated reporting momentum has diminished and this has caused heated debates and controversy in academic literature. Various researchers have started to question this new reporting policy, as companies are unsure on the modality to produce an integrated report. (Oll and Rommerskirchen, 2018). The IIRC advocates the integrated report, as it allows providing the necessary information to the stakeholders, using minimal resources. The integrated report offers insights on various topics, such as corporate governance, strategy and performance in an organized manner, focusing on the context in which the company operates (García-Sánchez *et al.*, 2013; IIRC, 2013). However, it appears that only few firms adopted this practice and most organizations do not provide financial information and non-financial information in an integrated and concise manner (Lee and Yeo, 2016).

The aim of this paper is to study integrated reporting as an emerging practice in corporate reporting. To achieve this aim, a two-steps analysis is conducted. The first phase of the study is to assess the compliance level of the integrated reports with the IIRC Framework’s suggestions regarding the content elements. The second step consists in developing insights on the evolution of integrated reporting practices. In order to carry out the research, content analysis combined with a scoring method were applied to the integrated reports for the 2011 - 2018 period published by IIRC recognized reporters.

The study contributes to academic accounting literature by examining the translation in practice of the integrated reporting concept. The paper provides original insights on integrated reporting evolution process, by analysing 102 integrated reports published between 2011 and 2018. Others studies analyse integrated reporting implementation using a similar research method (Eccles et al, 2015; Lizcano *et al.*, 2011), but the referential used for the respective researches is either the Consultation Draft of the International IR Framework (2013) or the Discussion Paper (2011), whereas this study uses the final product of the IIRC’s movements towards integrated reporting – the IIRC Framework (2013). This paper differs from previous research by analysing only integrated reports belonging to recognized reporters, as other studies examine in their sample other types of publications, such as Annual Reports.

The remainder of this paper is organized as follows: Section 2 offers a brief review of previous studies analysing integrated reporting in practice. Section 3 explains the key methodological aspects of the employed research method, as well as the sample selection process. Section 4 presents the research findings and provides insights on the integrated reporting practice and finally Section 5 presents the concluding remarks of this study.

2. Literature review

Integrated reporting is a practice promoting a new concept introduced by the IIRC – the integrated thinking. Also, this reporting policy promises to improve stewardship and accountability. In the past five years, integrated reporting became an international practice, which is continuously developed by both scholars and organizations. Nevertheless, integrated reporting did not gain immediate success as the process is yet to be fully accepted and applied by companies (Du Toit *et al.*, 2017). Integrated reporting involves connecting financial and non-financial information in a single report, in order to highlight the existing interdependencies, therefore significantly increasing the quality of reporting. Integrated reporting has immediately gained significance since the formation of the International Integrated Reporting Council (IIRC). Consequently, the IIRC has become the global leading organization in developing policy and practice recommendations in the field of integrated reporting, but it was not the first promoter in this area (De Villiers *et al.*, 2014). Initiatives to combine the social and environmental reports into a single report have been launched as early as 2000s. Several companies produced and published integrated reports even before the integrated reporting framework was introduced (Eccles and Serafeim, 2011). Besides the companies that experimented with integrated reporting in its incipient stages, South Africa was the first country to require listed companies to provide an integrated report.

Integrated reporting achieved great popularity in both academic bodies and international organizations as it promised to become the solution to the evident disassociation of financial and non-financial reporting. The integrated report combines the most important elements of distinct reporting components an organization should disclose in a coherent manner. Moreover, the integrated report presents the most strategically relevant information, essential to the stakeholders' decision-making process (Cheng *et al.*, 2014). Also, it must ensure information connectivity and explain how an organization can create and sustain short, medium and long-term value (IIRC, 2013). The integrated report should reduce the presentation of short-term information, criticized by both academic literature and stakeholders. Though integrated reporting as presented by the IIRC has many benefits, the IIRC Framework published in 2013 has received critique as it focuses to create "value for investors" (Flower, 2015: 1) as opposed to the South African framework.

The IICR Framework (2013: 25) presents nine elements that an integrated report should contain, specifying that the "content elements are not intended to serve as a standard structure for an integrated report". The structure of the integrated report will be defined in accordance with the specific circumstances in which the organization operates, and it should contain information regarding the following matters: Organizational overview and external environment; Governance; Business model; Risks and opportunities; Strategy and resource allocation; Performance; Outlook; Basis of preparation and presentation and General reporting guidance.

As rapid development and increasing relevance of integrated reporting are the main drivers for implementing this practice, the new reporting paradigm is becoming an established emerging reporting norm. Previous research on Integrated Reporting, such as Frias-Aceituno *et al.* (2013) and Garcia-Sánchez *et al.* (2013) have focused on the analysis of the motivations and influencing factors regarding the adoption of the IIRC initiative. Other research analyses the benefits of integrated reporting adoption. Zhou *et al.* (2017) and Garcia-Sánchez and Noguera-Gámez (2017) focused on studying the impact of Integrated Reporting on the capital market and presented several benefits of the integrated reporting practice. Thus, it has been noted that improving compliance to the suggestions of the IIRC Framework (2013) leads to cost of capital reduction.

Studies focusing on analysing the integrated reporting in practice, such as the papers by Eccles *et al.* (2015), Lizcano *et al.* (2011) and Ruiz-Lozano and Tirado-Valencia (2016), have presented the compliance extent of the integrated reports published by the companies which have responded to the IIRC proposal. The study prepared by Lizcano *et al.* (2011) analyses the differences between the IIRC Framework's (2013) requirements and the integrated reports released for the 2010 fiscal year by Spanish companies, found in the Global Reporting Initiative database. The results show that the companies comply with the suggestions to an acceptable extent, but there are issues which need improvement. The research presented by Eccles *et al.* (2015), studies 100 non-South African companies and 24 South African organizations from all economic sectors, which have prepared and presented self-declared integrated reports for the 2012 fiscal period. The results of this study highlights a variation in the compliance level, but on the average the analysed companies published fairly well prepared integrated reports.

Research regarding the quality of integrated reports was also conducted by PricewaterhouseCoopers (PwC). The organization surveyed 50 companies in The Netherlands in order to examine the quality of their integrated reports. PwC carried out studies in South Africa as well. The study from the Netherlands was replicated on the top 40 Johannesburg Stock Exchange companies, analysing the integrated reporting practices in terms of quality. The findings of the studies state that companies disclosed qualitative information in regards of business models, as well as strategy and resource allocation. (Du Toit *et al.*, 2017).

Another study on integrated reporting is prepared by Ruiz-Lozano and Tirado-Valencia (2016). The authors present a scored based analysis on the level of attention given to the guiding principles by the industrial companies. The results state that in the integrated reports for the 2013 fiscal year, not all the guiding principles are equally followed by the companies. The strategic approach and the connections between capitals in the value creation process are demonstrated to have a high level of observation. Still, there are other aspects which would need stronger emphasis such as the engagement of stakeholders in the process of preparing reports or the mechanisms to assure the validity of information.

Other studies that focus on analysing the integrated reporting practice (Chaidali and Jones, 2017; Perego *et al.*, 2016; Burke and Clark, 2016 and Robertson and Samy, 2015) highlight the views of preparers, regulators and academics regarding integrated reporting, whereas Veltri and Silvestri (2015), Beck *et al.* (2017) and Lodhia (2015) study the integrated reporting through the lens of individual companies. Lastly, two other articles debate the case of multiple organizations at international (Adams *et al.*, 2016) or national level (Haji and Anifowose, 2017).

3. Research methodology

The aim of this research is to present the evolution of integrated reporting as a new corporate reporting practice, by analysing integrated reports voluntarily disclosed by recognized reporters. The study uses a content analysis methodology to measure the compliance level of integrated reports with the requirements included in Integrated Reporting Framework published in December 2013. Content analysis is a widely applied technique in corporate reporting studies. This method is especially useful for discovering new trends in the integrated reporting practice by making interpretations from the companies' disclosures. (Haji and Anifowose, 2017). This research method is compatible with the aim of this study, as it supports the examination of a company's disclosure traits, and more importantly, this technique allows qualitative information to be quantified (Santis *et al.*, 2018).

3.1. Sample

The sample of this study is composed of integrated reports belonging to recognized IR reporters indexed in the Integrated Reporting Example Database. This database is chosen as it makes available recognized reporters, as well as disclosure examples that meet the requirements of the IIRC Framework (2013). The database also contains a list of companies that refer to the IIRC or the integrated reporting practice.

The database section used for this study includes only the recognized organizations, whose corporate publications have been reviewed by experts and have won awards for the qualitative integrated reporting. Still, a great part of the corporate publications included in the database are not integrated reports. The IR Example Database includes integrated reports as well as other types of publications such as annual reports, and to a lesser extent, CSR reports. Therefore, the recognized organizations included in the database may apply integrated reporting concepts, but do not necessarily publish an integrated report.

In order to compose the sample of this study, the reports of each voluntary reporter's included in the database were analysed following a few steps. First, only reports published in the 2011 – 2018 period are selected. Second, the reports were downloaded from the recognized reporters' websites, as the database did not include publications for each year. A cut – off date for the downloading process is adopted; the companies' websites were consulted until 31st January 2019. Then, the reports underwent a pre-screening procedure based on the following requirements. First, the reports are included in the research only if the title of the publication is "Integrated Report" or "Integrated Annual Report". Also, in order to give insights regarding the practice's evolution, a minimum of 3 years – observation per each company rule is applied. The final sample is composed of 22 companies, with 102 years – observations.

As highlighted in Table 1, Europe is the best represented region, as it amounts 57% of the final sample, followed by Asia with 31% of the integrated reports. South America and Australasia are regions with less recognized IR reporters that published integrated reports for more than 3 years. At country level, the most integrated reports belong to six Japanese companies (28% of the sample), followed by 15 reports published by three Italian companies and 11 reports from British reporters.

The North American companies could not be included in the study as most reporters chose to not publish integrated reports for at least 3 financial periods. Integrated reports published by listed companies from South Africa were also not included in the sample, as the aim of the study is to analyse voluntary integrated reporting.

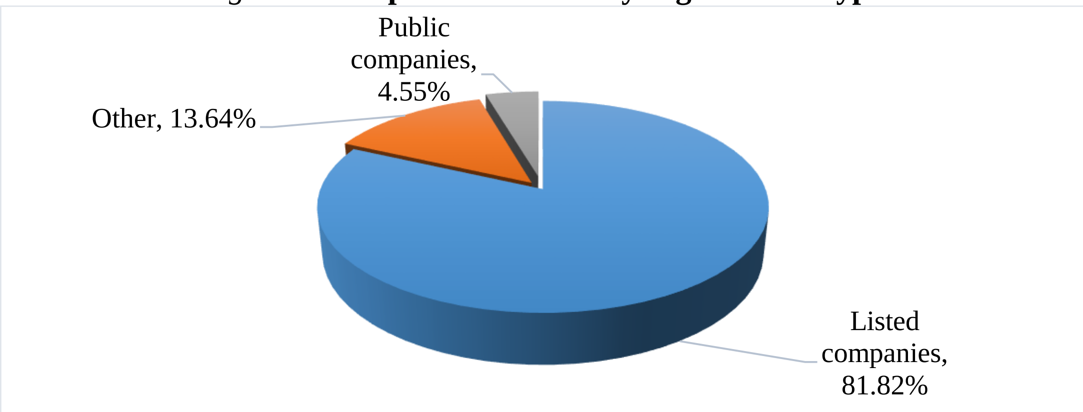
Table 1. **Sample breakdown by region**

Region	No. of companies	No. of Integrated Reports
Asia	7	32
Australasia	2	7
Europe	12	59
South America	1	5
Total	**22**	**102**

(*Source:* IR Examples Database, available at http://examples.integratedreporting.org/organisations, author's projection)

The sample of the research includes mostly listed companies, as presented in Figure 1. More than 80 integrated reports belong to listed companies. Less represented types of companies are the public companies, with only an Australian company and other types of organizations such as professional accounting bodies, such as ACCA and CPA Australia.

Figure 1. **Sample Breakdown by organization type**



(*Source:* Author's projection)

Table 2 shows that most studied publications were Integrated Reports (69 reports). The study includes 31 Integrated Annual Reports (such as ACCA for the 2014 and 2017 fiscal years, as well as of Coca-Cola HBC for 2014 - 2017 period). The report title requirement was broken for two ACCA reports (the reports for 2012 and 2013), as their title is Annual Report, but the company claims that the reports are integrated. Taking in account that 2012 and 2013 were the first two years ACCA issued integrated reports and the practice of publishing integrated reports was in its first stage, the reports were included in the study.

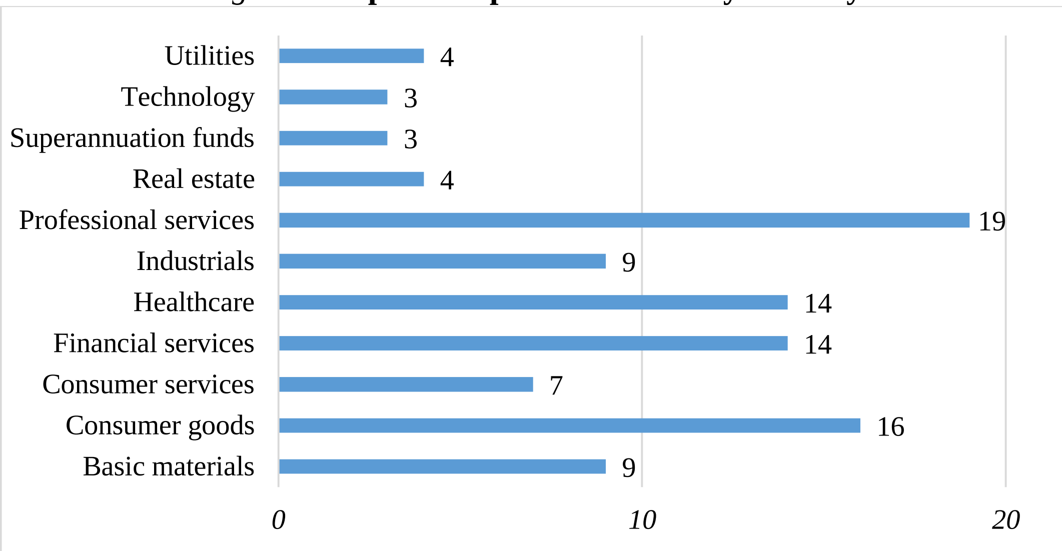
Table 2. **Sample breakdown by report type**

Report Title	No. of reports
Integrated Annual Report	31
Integrated Report	69
Annual Report	2
Total	**102**

(*Source:* Author's projection)

The sample contains reports from twelve European companies and the remainder is composed of integrated reports belonging and ten companies from Asia, South-America and Australasia. The sample is exogenous in terms of economic sector appurtenance. As shown in Figure 2, 'professional services' is the best represented industry in the study, with 19 reports belonging to 4 organizations. Consumer goods, followed by Healthcare and Financial services are economic sectors with more than 13% of the analysed reports. Other economic sectors include: industrials, basic materials, real estate.

Figure 2. **Report sample Breakdown by industry**



(*Source:* Author's projection)

3.2. Research method

Corporate reporting research commonly uses content analysis to find relevant information in the companies' communications such as annual reports or sustainability reports. The standard procedure for content analysis is to compare a pre-defined disclosure checklist against the sampled information and to codify it in various categories (Haji, 2015). This study employs a particular form of content analysis as it also includes a weighted scoring approach (Haji, 2015). As a secondary aim of this study is to examine the disclosure quality of integrated reports, a detailed scoring scheme is developed based on the IIRC Framework (2013). Low *et al.* (2015) also used a similar procedure, using a six - point measure, as it allows to categorize information on different levels of disclosure quality.

To analyse the extent of compliance regarding the content elements, this research uses the particular form of content analysis developed and introduced by Eccles *et al.* (2015). The *report quality assessment* (Eccles *et al.*, 2015) method consists on comparing the IIRC Framework's (2013) requirements with the companies' integrated reports, using a scoring scale. The authors, coded over 100 reports which referred or used integrated reporting concepts, using a three – point scale for each content element. This method was further refined by incorporating the system used by various authors in content analysis studies (Lizcano *et al.* 2011; Haji, 2015; Dumay *et al.*, 2016; Guthrie *et al.* 2012; Low *et al.* (2015). The authors suggest a comprehensive checklist or a coding framework to be developed, tested and applied to the sampled information.

Therefore, an *Integrated Reporting Disclosure Framework* (Appendix 1) was developed. The disclosure framework contains an item list derived from the IIRC Framework (2013). The three – point rule proposed by Eccles *et al.* (2015) is used and each content element could reach a maximum possible score of 3. By incorporating several items for each content element, the objectivity of the scoring procedure is greatly increased. Ruiz-Lozano and Tirado-Valencia (2016) also use the same technique to evaluate whether the guiding principles are followed by industrial companies.

In order to compose the disclosure checklist, an IIRC Framework's (2013) requirements analysis was carried out. A first version of the disclosure framework was applied on a small sample of 10 integrated reports, belonging to different companies and periods. The final framework is composed of 27 items; each content element being split in few items. Accordingly, each content element has two to four scoring items and partial scores ranging from 0.5 to 1.5 were assigned to every item. To obtain the score per each content element, the intermediary scores were summed. The content elements scores start from 0 (the lowest score, given when a report does not provide the required information) and may reach 3 (the highest score, given in the case of a detailed description). The maximum score a report can reach is 24. Finally, total average scores were calculated for each company as well as average scores for each content element.

The disclosure framework contains eight out of nine content elements described in the IIRC Framework (2013): Organizational overview and external environment, Governance, Business Model, Risks and Opportunities, Strategy and resource allocation, Performance, Outlook and Basis of preparation and presentation. During the checklist developing and testing procedures, it was shown that the item "General guidelines for reporting" is difficult to assess. Although information to meet a part of the requirements related to this item were found in more recent integrated reports, it was referred to other elements or was presented in a different context. This point of view is shared by Eccles *et al.* (2015), who excludes this factor from their analysis, stating that examining "General guidelines for reporting" is challenging as they cover a broad area and related information overlap with some guiding principles, such as "Materiality".

A limitation of content analysis studies is the coding procedure subjectivity. Therefore, this research addresses reliability concerns regarding the integrated reports coding by re-coding a sub-sample of reports, after the coding procedure was finished. The results for the first and second coding were compared in order to discover and analyse any discrepancies between both coding results.

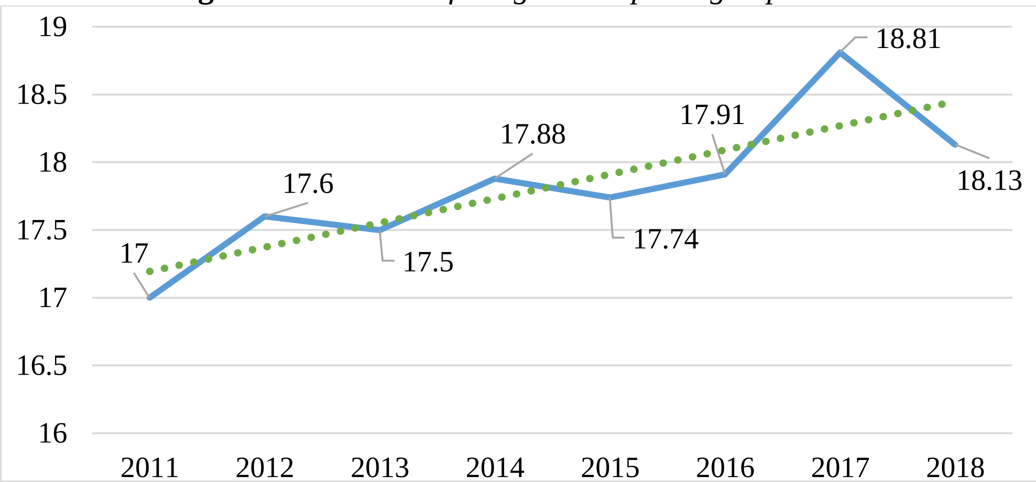
4. Results and discussion

The integrated reporting evolution as a reporting practice is presented based on the content analysis of 102 reports published by 22 companies, in the 2011 – 2018 period. In order to assess the integrated reports, the IIRC Framework's (2013) suggestions were referred, and a scoring list was developed and applied to the selected reports. In order to summarize the results, total average scores for each organization, and for each content element were calculated.

4.1. Developing insights regarding the evolution of integrated reporting at company level

The graph presented in Figure 2, highlights the evolution of the integrated reporting practices employed by the analysed companies. The diagram has an ascending trend line which confirms that the companies adopting integrated reporting make constant efforts to improve their reporting procedures. Comparing the scores obtained during the analysed period with the maximum possible score of 24, the reports compliance with the IIRC Framework (2013) is satisfactory as the average scores are in the 17-18 interval. The highest average score was obtained by the reports published for the 2017 fiscal year. A possible explanation for this could be that the publication of the IIRC Framework in December 2013 leaved enough time for the companies to experiment and develop their integrated reporting policies.

Figure 2. *Evolution of integrated reporting in practice*



(*Source*: Author's projection)

The diagram shows small slumps in compliance level every other year. The explanation for this situation is not a lower interest in integrated reporting. Contrarily, the companies experimented more and more in order to develop a high quality integrated report template and the resulted publication omitted one or two pieces of information vital for the scoring list used in the coding procedure. Though a part of the studied companies utilized the same integrated report template for 2 or 3 years (i.e. Asahi Group and, DSM, OMRON), some companies presented a different integrated reporting template each year (i.e. ACCA, Coca – Cola HBC).

For the last year of the analysed period, the graph illustrates a slowly decreased average score. Still, the score does not reflect the actual state of integrated reporting, as at the cut-off date for report collection is January 2019 and most companies did not publish their integrated reports yet. Only eight companies made available the integrated reports for the 2018 fiscal year and six reporters were Japanese companies with the fiscal year ending in March 2018. A similar pattern is identified for the first two years of the analysis. For 2011, only DSM published an integrated report and in 2012 five companies elaborated such disclosures.

Table 3 shows the average scores obtained by the companies during the analysed period. CPA Australia and Lawson, top the list by achieving very good scores for their incorporation of IIRC Framework (2013) suggestions regarding the content elements. The average score for the two companies' reports surpass the score 21 out of the maximum 24. A very high compliance level is observed for two Italian companies, Unicredit and Generali, as well as for a Brazilian company - Itaú Unibanco Holding.

Table 3. **Average scores obtained by the companies**

Company	Total average score	Rank
CPA Australia	21.20	1
Lawson	21.17	2
Unicredit	20.75	3
Generali	20.40	4
Itaú Unibanco Holding S.A.	20.00	5
enBW	19.75	6
Coca-Cola HBC	19.33	7
Cbus	19.33	8
DSM	19.29	9
SAP	18.67	10
OMRON	18.14	11
Asahi Group Holdings Ltd	17.75	12
Tata Steel	17.67	13
Ferrovial	17.50	14
Atlantia	17.00	15
Crest Nicholson	16.50	16
NordGold	16.50	17
ACCA	16.43	18
Mitsubishi Corporation	14.60	19
Dentsu	14.00	20
Marui Group	13.25	21
Arguden Governance Academy	12.33	22

(*Source:* Author's projection)

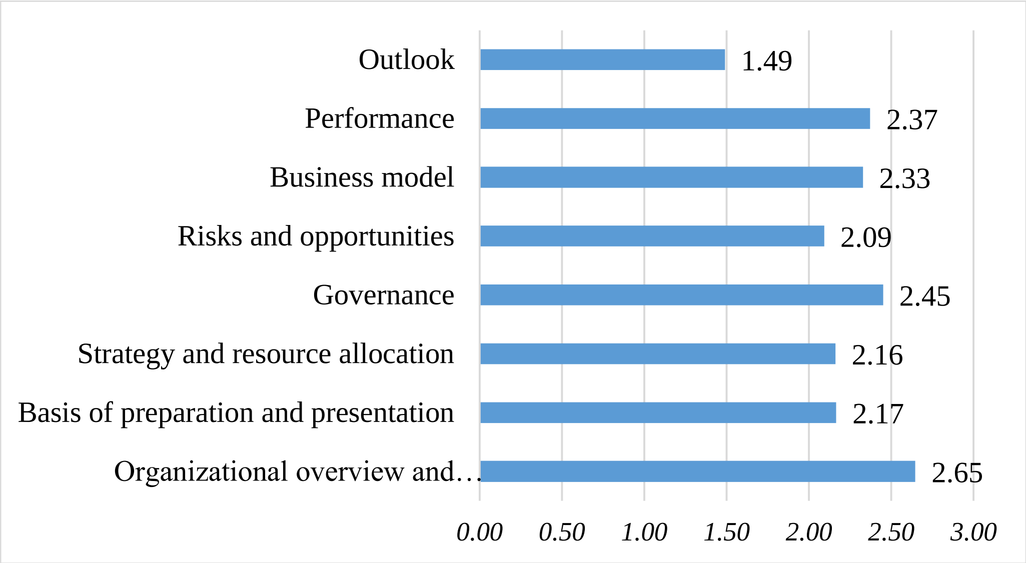
The organization with the lowest level of compliance with the IIRC Framework (2013) is Arguden Governance Academy, which published integrated reports starting from 2015 and the average score is 12.33. Improvements on Governance, Risk and Opportunities and Outlook presentation is necessary for the Arguden integrated reports. Quite low compliance level is noted as well for two Japanese companies, Dentsu and Marui Group. The integrated reports published by these companies used an annual report structure, providing a considerably amount of information, which, in most cases, did not comply with the IIRC Framework (2013) suggestions regarding readability and conciseness.

4.2. Developing insights regarding the content elements

The total average score obtained by the analysed integrated reports for applying the IIRC Framework (2013) suggestions regarding the content elements is 2.21. When compared with the maximum score that could be obtained of 3, the compliance degree is quite high. Still, none of the companies have achieved maximum scores for all the content elements and this outcome is expected, as the integrated reporting is a recent practice and the IIRC Framework (2013) is not mandatory for any of the companies included in the study.

Analysing the average scores obtained for the content elements, presented in Figure 3, it can be noted that reports have complied with the content elements' suggestions of presentation in a quite high degree. All the factors, except "Outlook", have exceeded the 2.0 score. Although most reports displayed a good logical structure, it sometimes does not align with the suggestions of IIRC Framework (2013). Even if information to describe exhaustively the established criteria was found, it was usually dispersed in different sections of the reports, raising the complexity of the evaluation and scoring process.

Figure 3. *Average scores by content elements*



(*Source:* Author's projection)

Another important point is the fact that some companies had "combined reports", meaning that the integrated report was combined with other types of reporting publications, such as financial statements (i.e. Asahi Group Integrated Reports for 2016 and 2017; Coca – Cola HBC Integrated Annual Reports for the 2014-2017 period).

Observing the average scores for each content element, high values are noted, culminating with the score of 2.65 obtained by Organizational overview and external environment. Governance, Performance and Business Model also achieved high scores. The scores are explained through the large interest shown by companies in presenting the financial and non-financial results, as this is the main purpose of integrated corporate communication. It is observed that the companies tried to improve the integration of financial and non-financial performance, in some cases the reports being structured using a Triple Bottom Line approach (i.e. all DSM integrated reports, OMRON integrated report for 2015).

The information on the above mentioned content elements is presented in quite a concise manner, as opposed to how the presentation of Outlook and to some degree, Risks and Opportunities is handled in the analysed reports. Outlook is the content element that, on average, was not correctly employed in the reports, as it scored the lowest average value, of 1.49. The Risks and Opportunities content element received the second lowest average score, of 2.09 as a great part of the studied integrated reports did not identify the opportunities of their operating environment. Further observations on the content elements are explored in the following paragraphs.

In all the studied reports, the *Organizational overview* was presented in the first pages of the analysed integrated reports. There have been reports that at the beginning stated the management's views on past activities or even a short presentation of the performance achieved. Although most companies provided enough information to meet the requirements of the IIRC Framework (2013) regarding the overview, sometimes it was not presented in a very organized manner. Usually, this kind of information was combined the description of other components such as performance, strategy, or even with the Chairman's of the Board letter to the stakeholders. Concerning the presentation of the *external environment*, 35% of the analysed reports did not present their operating context, lowering the average score for this content element.

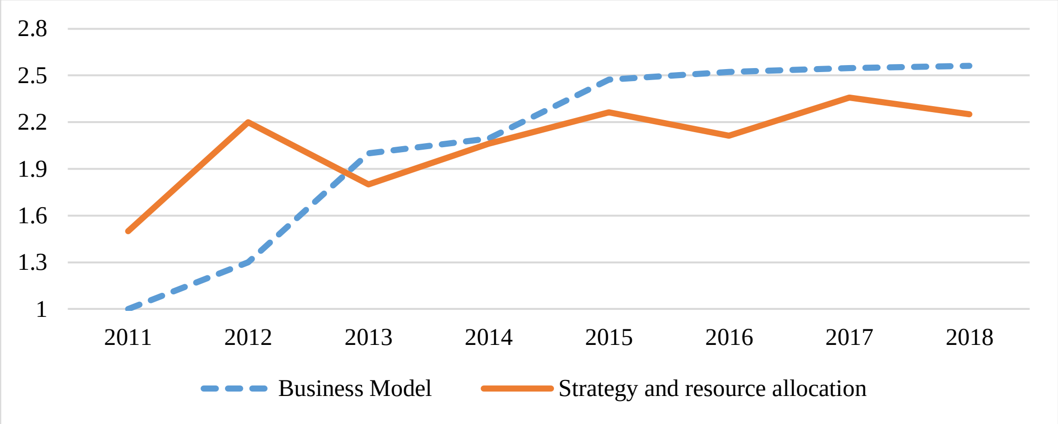
Governance scored an average of 2.45, as 58% of the assessed integrated reports applied all the IIRC Framework suggestions regarding this content element. Most reports have contained an extensive section dedicated to Corporate Governance. The motivation for providing such a detailed presentation on governance practices arises from the obligation to comply with governance codes or regulations. Around 87% of the integrated reports followed the IIRC Framework's (2013) suggestions regarding composition, diversity, ethical issues, responsibilities and risk policies. In some cases, the remuneration practices did not align with the IIRC Framework (2013) as the remuneration policy was not presented (i.e. ACCA, Asahi Group Holdings Ltd, CPA Australia) or it was not linked to value creation. All the studied companies are required to present extensive information on Governance, therefore the scoring procedure became rather difficult for few integrated reports. The required information for this content element was usually presented in the Corporate Governance section, but sometimes it lacked the conciseness the IIRC Framework (2013) promotes.

Ninety-five out of the 102 analysed reports presented information related to the *Business model* and how it contributes to the organization's developing process. Still, less reports followed the IIRC Framework's (2013) suggestions on readability and effectiveness, including a diagram outlining the key elements. This situation is correlated especially with the reports released in the first part of the analysed period. As highlighted in Figure 4, the scores obtained by Business model in 2011 and 2012 are very low compared to the 2015-2018 period. Only six reports were published in the first two years of the studied period (the reports of ACCA, Atlantia, Coca-Cola HBC, DSM, OMRON) and the average score for the business model presented in the mentioned publications is 1.25. The low score is expected as integrated reporting as a theory was in an incipient phase and companies experimented with business model presentation. Still, an excellent description of the business model, considering the release period, is given in the 2012 Coca-Cola HBC integrated report.

A favourable remark for Business model presentation is that in most analysed reports, the element "Business Model" was easily identified. The reports contained a separate section, usually entitled "Business model" or "How we create value". The weaknesses of this content element resides in the lack of explanations related to value creation in the short, medium and long term and the mostly absent connection between business model and performance or risks and opportunities. An essential IIRC Framework suggestion is related to business model implementation based on "Inputs", "Business

Activities", "Outputs" and "Outcomes". During the analysed period, around 68% of the reports complied with this suggestion. Still, only 42% of the analysed reports obtained the maximum score of 3 for business model presentation and most of those reports were published for the 2016 and 2017 fiscal years.

Figure 4. *Evolution of Business Model and Strategy presentation*



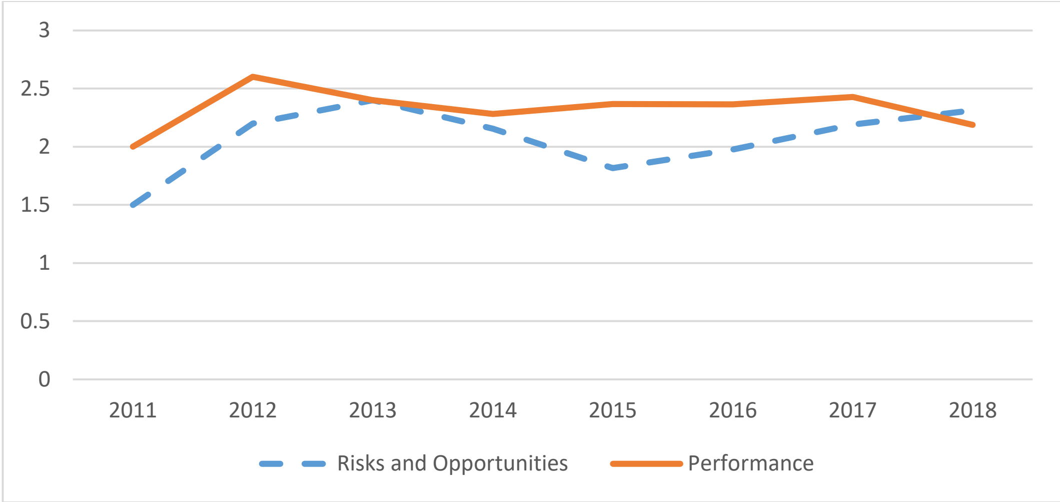
(*Source:* Author's projection)

Regarding *Strategy and resource allocation* all companies provided information on the promoted strategy and most studied reports had a designated section to this topic, in which strategic objectives were presented. During the studied period, the integrated reports improved the presentation of Strategy as shown in Figure 4, reaching the highest average score of 2.35 in 2017.

However, the IIRC Framework suggestions related to measures to be taken in order to achieve the targets and means to quantify the results were not as applied in the reports. Only 29% of the analysed reports presented the modality to measure the achievements (i.e. Coca – Cola HBC reports and ACCA integrated reports). In most reports, the degree of disclosure is not sufficient to meet the IIRC Framework's (2013) requirements, as it is relevant point to present the resource allocation in order to achieve all strategic objectives. Only 11% of the assessed reports included information regarding resource allocation, lowering the average score for this content element.

The analysis of *Risks and opportunities* revealed an extensive concern regarding the determination of potential risks, many reports highlighting the risks and the taken prevention measures in a dedicated risk management section. In contrast to this legitimate concern is the attitude of companies regarding the opportunities. Issues relating to opportunities were rarely presented in the integrated reports, in some cases in a SWOT Analysis (Asahi Group integrated reports) or combined with the Outlook or External environment presentation. In most cases the opportunities presentation did not follow the IIRC Framework's (2013) suggestion of explaining how the identified opportunities will be used to create value. As highlighted in Figure 5, the presentation of Risks and Opportunities obtained fluctuating average scores, which explain the companies' unstable view on the manner of properly disclosing material issues related to challenges and opportunities integration.

Figure 5. *Evolution of Risks, Opportunities and Performance presentation*



(*Source:* Author's projection)

The companies included in the integrated reports a section more or less extensive in which the *performance* and the results achieved by the company in the previous fiscal year are presented. The performance presentation obtained an average score of 2.37, which shows a high level of compliance with the IIRC Framework's suggestions. Also, the scores for performance presentation did not oscillate much during the analysed period, as shown in Figure 5. All reports included and explained key financial indicators, but also indicators of non-financial nature. In some cases, the non-financial KPI's were presented in other sections, such as environment or employees. An important point on performance presentation is that few companies used a Triple Bottom Line approach in order to disclose performance related information, as well as other material issues related to economic, environmental and social dimension (i.e. DSM integrated reports). It is worth mentioning that the Framework's requirements regarding the performance effect on the Capitals have not been met to a large extent, only almost 50% of the assessed reports included such information. Still, 80% of the analysed reports made efforts in order to associate financial and non-financial performance.

Information regarding *Outlook* was the hardest to identify, mostly due to reports not having a section designated for this type of disclosure. Usually the outlook was presented with the strategy and objectives, sometimes in the Chairman of the Board letters to stakeholders, or combined with External environment disclosure. Most companies attempted to describe this element, however the information was dispersed in the report. Rarely all the suggestions of the IIRC Framework (2013) were met, particularly the extent to which the organization is ready to respond to critical challenges, and in some cases the possible effects of the identified changes in the external environment.

To assess *Basis of preparation and presentation*, "Report scope" "About this report" or "Reporting policy" sections were consulted. Around 36% of the reports (i.e. Atlantia, DSM, Ferrovial) offered a summary on the materiality determination process in the before mentioned sections. Most reports (84%) complied with IIRC Framework's (2013) suggestion regarding the presentation/description of the rules or norms used as support for preparing the reports as well as the reporting boundaries (i.e. Arguden Governance Academy, Asahi Group, Tata Steel, Coca- Cola HBC).

5. Conclusions and study limitations

The aim of this research has been to assess the evolution of integrated reporting as an emerging practice in corporate reporting. In order to give insights regarding the evolution of this practice, an examination of the compliance level to the IIRC Framework's (2013) requirements for the content elements was carried out on a sample of 22 organizations adhering to the IIRC initiative. The reports analysed in this study were selected if title of the report was Integrated Report or Integrated Annual Report. Also, a minimum of 3-year observation rule for each company was applied when constructing the research sample. This study was carried out by using a content analysis based methodology to monitor the content elements mentioned above and the general conclusion is that the companies have made improvements in order enhance their integrated reporting practices by complying with the IIRC Framework (2013).

The reports obtaining high scores for all the coding items disclose material issues using a logical and easy to follow structure, a great description of value creation process and business model. Those reports are truly integrated, especially when compared with the reports that have obtained lower scores. In those instances, although efforts have been made to follow the content elements, much remains to be done, and the compliance is still in an initial phase for the companies with lower ranks.

The study concludes that most of the IIRC Framework's (2013) requirements regarding the content elements are followed. The majority of reports offered enough data to describe each content element, but the information was either lacking or scattered for some of the elements, especially for Outlook, situation also identified by Eccles *et al.* (2015). Another weakness is the resource allocation issue, which is not linked to the strategy of the company, causing a negative impact on the Connectivity of information, the core of IIRC Framework (2013).

The results and conclusions of the study could be limited by the sample construction process; as only voluntary reporters were included in the research. To broaden the boundaries of this research, incorporating integrated reports from South-African companies could enable a superior comparative analysis, showing the real evolution of integrated reporting practices. The study may be limited by the methodology, as the rating system could introduce a dose of subjectivity in the results. However, this does not invalidate the conclusions of this study, as coding reliability was addressed by recoding a random selected sub-sample.

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Appendix 1. **List of scoring items**

Content element	Item	IIRC Framework reference
Organizational overview and external environment	Operating context	Section 4.5
	External environment	Section 4.7
Governance	The leadership structure, including skills and diversity	Section 4.9
	Attitude to risk, integrity and ethical issues	
	Remuneration policies (linked to value creation)	
Business Model	Is presented, preferably with a diagram	Section 4.13
	Narrative explanation of the Business Model	Section 4.13
	Presents Inputs, Business activities, Outputs, Outcomes	Section 4.12
	Presents information connected to the strategy, risks, opportunities and performance	Section 4.13
Risks and opportunities	Risks, sources of risks and probability	Section 4.25
	Opportunities, sources of opportunities	
	Explanation on how key risks are managed	
	Explanation on how to create value from key opportunities	
Strategy and resource allocation	Statement of strategic objectives	Section 4.28
	Strategies or actions implemented in order to accomplish the strategic objectives	
	Resource allocation plans	
	Measurement of achievements	
Performance	KPI's and narrative explanations	Section 4.32
	Connectivity of financial and non-financial performance	Section 4.32
	Linkages between past and current performance correlated with the organization's outlook	Section 4.31
	Effects on the Six Capitals	Section 4.31
Outlook	Changes in the external environment	Section 4.35
	Potential implication for the organization	Section 4.37
	Explanation on how the organization is equipped to respond to critical challenges	Section 4.35
Basis of preparation and presentation	Summary of materiality determination process	Section 4.42
	Reporting boundary	Sections 4.43–4.46
	Summary of Frameworks used	Sections 4.47–4.48.

(*Source:* Author's projection based on the IIRC Framework)

PS16 FINANCE

Chairperson: Andrei Filip, ESSEC Business School, France

Comparability of statements of cash flows: Evidence from Baltic countries

Vaiva Kiaupaite Grushniene

Lehte Alver

Assessing comparability of accounting information using panel data analysis, in the case of Romanian listed companies

Ioan-Bogdan Robu

Detecting earnings management using Benford's law: The case of Romanian listed companies

Costel Istrate

Measuring the level of accounting conservatism in financial reports and its impact on the market value of banks are not applying IFRS

Dhiaa Sabah Alazzawi

Ileana Nișulescu-Ashrafzadeh

Comparability of statements of cash flows: Evidence from Baltic countries

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Abstract: *This study examines whether adoption of International Financial Reporting Standards has led to harmonization and comparability of Baltic Listed companies' statements of cash flows. Considering, that more than 120 countries have already adopted International Financial Reporting Standards, this research has practical application for the business analysts and international investors. IAS 7 allow managers flexibility in choosing the format of presentation for statements of cash flows and flexibility in classifying interest received, interest paid, dividends received and dividends paid among operating, investing and financing activities. The authors to analyse classification choices by managers have used a sample of all Baltic Main List companies. The results show that even though there is a longitudinal consistency in classification choice within each company, there is no consistency among the companies in interest received and paid. Dividend treatment is more consistent and harmonized. Therefore, the users of financial reports should not assume comparability of statements of cash flows for Estonian, Latvian and Lithuanian companies, despite a single stock exchange, cultural and economic similarities of countries and de jure harmonization of accounting standards.*

Keywords: *Accounting, IFRS, accounting policy choice, classification, cash flow.*

1. Introduction

Accounting is complex socio-economic activity that has been an integral part of human civilization for over 4000 years. It is the language of business, which provides quantitative information about companies that is intended to be useful for decision making by stakeholders. The increased globalization of business coupled with improvement in technology, has led to globalization of capital markets and increased international investment, which calls for international accounting practices harmonization. At the same time, there have been impediments in achieving harmonization, due to cultural and economic differences among countries. The use of IFRSs is a major reporting issue worldwide and has been a subject of extensive academic research, as understanding the impact of IFRSs on company's accounting process is important for accountants, auditors, corporate management, investors, lenders, financial analysts, regulators.

The adoption of IFRSs in EU in 2005, following Regulation No. 1606/2002 (also called "IAS-Regulation") aimed to increase the comparability of publicly traded companies' annual reports and is said to have marked the new phase of international harmonization (Baker and Barbu, 2007). However, IFRSs still provide flexibility to financial statement preparers when applying the standards due to explicit options, discretion in

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interpretation and the need for estimates (Wehrfritz and Haller, 2014). Therefore, differences can still be found in IFRSs application from one company to another as well as from country to country. This led to discussion whether IFRSs are applied consistently and whether *"de-jure* standardization of accounting rules of group accounts of publicly-traded companies in the EU has also let to *de-facto* harmony" (Wehrfritz and Haller, 2014: 196).

Measuring the extent to which financial reports of companies are comparable is an important topic and deserves the attention of researchers, standard setters and practitioners (Taplin, 2011). Measuring harmony refers to the extent to which different companies use the same accounting method. If policy makers desire harmonization, then it is valuable to quantify the extent to which harmonization has occurred. Taplin (2011) argues that quantifying the extent to which company statements are comparable is valuable even without a formal theoretical framework. The comparability in accounting methods used increases, as companies concentrate more on one alternative method, and Herfindahl or H-Index (Roberts, *et al*, 2008) can measure this concentration.

Nobes (2006) argues that country specific factors, such as legal system, national financing system, national accounting regime and national culture, may still be relevant in IFRSs reporting, as it influences accountants and their judgements on how the rules are applied. In the recent years, the issues of comparability are of increasing interest to accounting researchers, practitioners and regulators, because of a widespread adoption of IFRSs, the main goal of which is increased quality and comparability of financial reports.

Statement of cash flows is a third principal financial statement in corporate financial reports. It presents cash inflows and outflows during a period from operating, investing and financing activities. The information about cash flows of an entity is useful in providing the users of financial statements with basis to analyse company's ability to generate cash and needs for the use of cash. Cash flows from operating activities (CFOA) are interpreted as ability of a company to maintain its current operations while funding future growth. Cash flow and particularly CFOA is used as a basis for business valuation, contracting, and financial analysis (Gordon *et al.*, 2017). Extensive literature focuses on classification shifting in income statement and balance sheet, while less focus has been on classification shifting in statement of cash flows, prior to IFRSs (Lee, 2012; Gordon *et al.*, 2017). Specifically, in terms of statement of cash flows, IAS 7 gives financial statement preparers flexibility and allows to classify interest received, interest paid, dividends received and dividends paid as either operating, investing or financing activity, provided they are classified consistently from period to period (IAS 7.31).

This paper contributes to IFRSs impact analysis, and specifically harmonization and comparability literature, by providing comparative results for Estonia, Latvia and Lithuania in financial statement preparers' classification judgement under IFRSs. To the author's knowledge, all previous researchers have focused on the "old EU" states and no such analysis has been done for the Baltic countries. The study is also beneficial for the users of financial statements, as it draws attention to the fact that a single set of rules does not guarantee similar treatment of items in statement of cash flows. Further, it points out that with widespread IFRSs adoption there is a risk that investors are misled into believing that there is more uniformity in reporting, than there actually is in practice (Ball, 2006).

The paper is organized as follows. Section 2 provides literature review and develops hypotheses. Section 3 discusses data and research design. Section 4 presents the findings and discussion of the empirical results. Section 5 concludes the paper.

2. Literature review

2.1. Concept of accounting harmonization

Over the past decades there were numerous efforts made by legislators and accounting standard setters to reduce the number of different accounting treatments used to account for a particular transaction. To some extent, it has been caused by the perceived needs of capital markets and was intended to facilitate comparison of financial statements of different companies within a country and between countries. To evaluate the success of those harmonization efforts a number of indicators have been devised.

It is important to start with distinguishing the two terms used in international accounting research: “harmonization” and “standardization”. The terms tend to be used loosely in accounting literature (Tay and Parker, 1990), when referring to the efforts required to ensure that similar transactions and events are accounted in a uniform way wherever they took place of were reported. Harmonization is a process by which accounting moves away from diversity in practice, with ending result of state of harmony when all companies use only one of the available methods of accounting, or a very limited number of methods. Proponents of this system argue that harmonization can be achieved through natural processes of changes in culture, economic growth, international trade, etc., which causes national accounting regulators to imitate each other’s practices. Some authors refer to *de facto* or material harmonization, which entails increase in comparability and *de jure* or formal harmonization, which covers harmonization of regulations. Formal harmonization could lead to material harmonization but could also cause dis-harmonization, if the new standards allow for more options (Canibano and Mora, 2000; Tay and Parker, 1990). Standardization is the process by which all companies agree to follow the same or very similar accounting practice, resulting in a state of uniformity. This process, as opposed to harmonization, is more formal and requires regulatory involvement to ensure compliance (Roberts *et al.*, 2008).

The main benefits of harmonization include increasing comparability of financial reports prepared in different countries and providing international investors with decision-useful information, removing barriers for international capital flows by reducing differences in financial reporting requirements for international capital market participants, and reducing financial reporting costs for multinational companies.

The notion of harmony, under this view, is that the process will lead to a situation of maximum harmony with respect to a particular financial statement item when all companies in all countries use the same accounting method. Consequently, harmonization studies are concerned with the similarity of accounting practices of companies.

Harmonization indices are commonly calculated to report the level of harmony of accounting practices. Aisbitt (2001) refers to multiple authors (e.g. Nair and Frank, 1981; Doupnik and Taylor, 1985; McKinnon and Janell, 1984) and states that early attempts to measure harmonization used descriptive statistics and variance analysis to evaluate the success of standards (Aisbitt, 2001). Research that is more recent has developed from the work of van der Tas (1988) who suggested quantifying the degree of harmony of financial reporting practices with the Herfindahl index (H-index) of industrial concentration. H-index is calculated by weighting the relative frequencies of the alternative options against each other. Thus, high relative frequencies have higher weighting and H-index raises when the methods companies are choosing concentrate more on one or a limited number of alternatives. H-index can fluctuate between 0 (no harmony, infinite number of alternatives with same frequency) and 1 (all companies use the same method) (van der Tas, 1988).

Since the indices do not allow for complete comparability of financial reporting practices, van der Tas has created a comparability index (C-index). Expanded version of C-index even allows considering situations where information published in footnotes is reprocessed and appears in financial reports. Archer *et al.* (1995, 1996) propose that international harmony means, all companies would select all other things being equal, a given accounting method. They explore the mathematics of C-index and show how it can be decomposed into within-country and between-country comparability indices. The C-index has been considered the most reliable way of measuring the extent of harmonization but criticisms have been raised as well. Tay and Parker (1990) draw attention to the limiting factors in index interpretation, as when several values of indices are calculated under different circumstances, it is not clear whether observed differences are due to different degrees of harmony or due to sampling variation. Baker and Barbu (2009) quote Krisement (1997) who argues that a number of observations affect C-index and criticizes decomposed index of Archer *et al.*, because the sum of within-country and between-country indices did no equal the overall global C-index (Baker and Barbu, 2007).

2.2. IFRSs and harmonization

Accounting comparability is perceived as a key factor of informative financial reporting and a necessary condition for achieving a common market in EU. It leads to benefits for report users through improvements in information quality and quantity, as well as lower information obtaining costs. It also contributes to more efficient capital market resource allocation and more effective performance evaluation by managers (De Franco *et al.*, 2011). The importance of financial statement comparability across companies is underscored in valuation techniques, such as price multiples, which are extensively used by investment banks and institutional investors. Consequently, standard setters position comparability as a central feature of the financial reporting system. International Accounting Standards Board (IASB) and Financial Accounting Standards Board (FASB) have listed it as most important property of financial accounting information. IFRS Conceptual Framework (QC4) states “if financial information is to be useful, it must be relevant and faithfully represent what it purports to represent. The usefulness of financial information is enhanced if it comparable, verifiable, timely and understandable” (IFRS CF QC4). Later in the text, the concept of comparability is expanded and defined as “qualitative characteristic that enables users to identify and understand similarities in, and differences among, items. Unlike the other qualitative characteristics, comparability does not relate to a single item. A comparison requires at least two items". Standard setters also note "Comparability is not uniformity. For information to be comparable, like things must look alike and different things must look different. Comparability of financial information is not enhanced by making unlike things look alike any more than it is enhanced by making like things look different" (IFRS CF Q21-23) and that "Consistency, although is related to comparability, is not the same. Consistency refers to the use of the same methods for the same items, either from period to period within a reporting entity or in a single period across entities" IFRS CF Q21-23).

Prior research by Barth *et al.* (2008), Barth *et al.* (2012), Ball (2006), and Nobes (2006) have evaluated the feasibility of convergence to IFRSs, namely potential advantages of producing more accurate, timely and complete financial information, removing international differences in accounting standards and eliminating information impediments for global capital markets. Mandatory IFRSs adoption in EU for all listed companies has provided researchers with possibility of analysing domestic standard influence over IFRSs. Proponents of IFRSs argue that a shared set of standards would make it easier to compare the financial performance of companies across different countries, and should lead to *de jure* harmonization.

Arguments suggesting that mandatory IFRSs adoption is beneficial for stakeholders, comes from the premise that IFRSs reporting increases transparency and improves comparability of financial reporting. It is reflected in European Commission's justification for mandatory IFRSs:

1) The establishment of a single set of internationally accepted high quality financial reporting standards (as compared to many different local standards in force), especially for the companies listed on financial markets.
2) To contribute to the efficient and cost-effective functioning of capital market. The Commission's goal is to protect investors, by maintaining confidence in the financial markets, which would then reduce the cost of capital for firms in the EU.
3) To increase the overall global competitiveness of companies within EU and thereby improve the EU economy (Jeanjean and Stolowy, 2008).

On the other hand, there is evidence that accounting standards play only a limited role in determining the quality of financial reporting. Because application of accounting standards involves considerable judgement and the use of private information, which allows management to have substantial discretion (Jeanjean and Stolowy, 2008). Lang *et al.* (2010) compare 21 countries with mandatory IFRSs and conclude that earning comparability does not improve for IFRSs adopters as compared to non-adopters. Barth *et al.* (2008) argue that IFRSs might even reduce accounting quality for two reasons: one, IFRSs would eliminate accounting alternatives that most appropriate for specific company and second, because IFRSs is principles-based and lacks detailed implementation guidance, it affords management with greater flexibility (Ahmed *et al.*, 2013).

Therefore, the key question is whether adoption of IFRSs leads to harmonization and better comparability of financial reports. The comparability issue is one of the major arguments for IFRSs, and is founded on belief that IFRSs reporting makes it less costly for investors to compare companies across markets and countries (Armstrong *et al.*, 2010). Barth *et al.* (2008) suggest that the cost of country's investors becoming accounting experts for another country is reduced when GAAPs of the two countries become more similar, which is further supported by Horton *et al.* (2012), stating that analysts' forecast accuracy improves after mandatory IFRSs adoption for analysts covering companies reporting under multiple standards earlier.

The ultimate goal of IFRSs adoption and accounting systems harmonization is to provide financial markets with high quality information, improving their efficiency, lowering the cost of capital, and increasing the opportunities for capital access to companies.

2.3. Prior studies on measurement of harmonization

Numerous studies deal with harmonization. Tay and Parker (1990) have distinguished between *de jure* and *de facto* harmonization, defining the former as harmonization of rules and standards, and the latter as harmonization of actual practice. Van der Tas (1988) defined *de jure* harmonization as formal harmonization and *de facto* harmonization as material harmonization. The harmonization in financial reports refers to the degree of disclosure or to the accounting method applied, which is referred to as measurement harmonization.

Formal harmonization would normally lead to material harmonization (Canibano and Mora, 2000). *De facto* harmonization in prior studies is measured using H-index, C-index (van der Tas, 1988), C-index (Archer *et al.*, 1995). Many studies have examined similarities and differences in international financial reporting, with focus on harmonization of accounting practices (Archer *et al.*, 1995; Tay and Parker, 1990; van der Tas, 1988) and have concluded there was a lack of harmonization in either measurement or disclosure practices within and among countries studies. Aisbitt and Nobes (2001), Hoarau (1995), Roberts *et al.* (2008) and Haller (2002) documented the development of *de jure* harmonization via EU directives and identified a shift towards convergence with IFRSs. Canibano and Mora (2000) focus on accounting practices of European "global players" using C-index and find evidence of "spontaneous harmonization" during the 1990s, but conclude that formal harmonization associated with Directives was not sufficient. Aisbitt (2001) uses C-index and finds evidence of harmonization between Nordic countries in 1990s, but also identifies instances of deharmonization.

Extensive research has been done on the results of IFRSs adoption globally. Mandatory adoption of IFRSs for EU listed companies from 2005 has further accelerated such research, as it has provided a unique setting, due to economic integration of countries within EU into single market. Nobes (2006) summarizes pre-IFRSs national accounting differences literature and raises a question whether these differences will survive after transition to IFRSs. Ball (2006) calls for caution when assuming uniformity in IFRSs based financial reports, because incentives for preparers (managers) and enforcers (auditors, courts, regulators, politicians, analysts, rating agencies) still remain local. Barth *et al.* (2006) provides evidence that adoption of IFRSs has improved accounting quality. Lang *et al.* (2010), using methodology of De Franco *et al.* (2011) have documented increases in earnings similarity but not accounting comparability after IFRSs adoption. They even argue that greater uniformity of IFRSs adoption may have negative effect on usefulness of accounting information, as it prohibits from taking into consideration firm, industry, and country specifics. Li (2010) documents lower cost of capital for EU companies after mandatory IFRSs adoption and argues that both increased disclosure requirements and improvement in comparability contribute to her findings. Armstrong *et al.* (2010) argue that uniform accounting standards are likely to improve information comparability among companies, which in turn should reduce to the cost of equity capital. Armstrong *et al.* also propose that investors react positively to adoption of IFRSs as they expect "positive cash flow effects" (2010: 40), which result from lower cost of information obtaining and reduced possibilities for management manipulation due to greater transparency. On the other hand, there is a fear that investors might react negatively, as they can perceive uniform IFRSs adoption as a failure to accommodate adequately regional economic, political and accounting issues (Armstrong *et al.*, 2010). Yip and Young (2012) address the above issue by investigating 17 EU countries using three proxies for information comparability (similarity of accounting functions, degree of information transfer and similarity of information content of earnings) and conclude that comparability improvement is more likely among firms from similar institutional environments. Barth *et al.* (2012) used three dimensions of accounting quality (earnings smoothing, accrual quality and earnings timeliness) to evaluate comparability of IFRSs based and US GAAP based figures and have concluded, that IFRSs adoption has indeed led to greater comparability. Danske *et al.* (2008) provide support for IFRSs adoption through positive capital market reaction to voluntary IFRSs adoption. Ahmed *et al.* (2010) measure effects of IFRSs on three groups of accounting quality metrics: income smoothing, reporting aggressiveness, and earnings management to meet targets, and find a significant increase in aggressive reporting of accruals and no reduction in earnings-management following IFRSs adoption. Horton *et al.* (2013) have investigated whether increase in forecast accuracy after IFRSs adoption was attributable to higher-quality information and comparability or to the fact that IFRSs give managers greater opportunities to manipulate their earnings and thus meet the forecasts, and find that it is mainly due to earnings manipulation. In Baltic countries, accounting harmonization measurement has been discussed in Strouhal *et al.* (2011a; 2011b).

2.4. Statement of cash flows

The balance sheet and income statement have been required statements for years, but the statement of cash flows has been formally required in the United States and New Zealand only since 1988. The International Accounting Standards Board issued International Accounting Standard 7 (IAS 7) in the year 1992, and cash flow statements became integral part of financial reports for listed companies in 1994.

IAS 7 requires companies to present statement of cash flows as integral part of its primary financial statements from 1994, along with statement of financial position, statement of profit and loss and other comprehensive income, and statement of changes in equity. Since introduction, the statement of cash flows has been a valuable tool for business valuation: owners of the company use it to analyse return on investment, managers use it to highlight strengths of companies, suppliers and creditors use it to judge payment capacity of companies. Some analysts even consider statement of cash flows more important and informative than income statement, because they believe cash is less susceptible to manipulation.

According to IAS 7, the statement of cash flows is prepared as follows:

- **Operating activities** are the main revenue producing activities of the entity, and include cash received from customers and cash paid to supplies and employees (IAS 7.14).
- **Investing activities** are the acquisition and disposal of long-term assets and other investments that are not considered cash equivalents (IAS 7.6).
- **Financing activities** are activities and alter the equity capital and borrowing structure of the entity (IAS 7.6).

For the preparation of cash flows from operation activities section, direct method is encouraged but the indirect method is also acceptable (IAS 7.35).

CFOA are interpreted as ability of company to maintain its current operations while funding future growth. Cash flows and particularly CFOA are used as a basis for business valuation, contracting, and financial analysis (Gordon *et al.*, 2017). Extensive literature focuses on classification shifting in income statement and balance sheet, while less focus has been on classification shifting in statement of cash flows, prior to IFRSs (Lee, 2012; Gordon *et al.*, 2017). US GAAP requires classification of interest paid, interest received, dividends paid, and dividends received as part of operating cash flows. IFRSs, on the other hand, give financial statement preparers more flexibility and allows to classify interest paid and received and dividends received and paid as either operating, investing or financing activity, provided they are classified consistently from period to period (IAS 7.31).

Prior research indicates that statement of cash flows format is important for regulators, auditors and other users of financial statements (Hollie *et al.*, 2011). Therefore, the effects of classification flexibility of cash flows mater as both IASB and FASB promote that financial information should enable financial statement users to assess entity's liquidity and solvency, compare performance and make predictions (Gordon *et al.*, 2017). Several authors (Jones *et al.*, 1995, Mills and Yamamura, 1998) suggest that statement of cash flows figures are more important than figures shown in other financial statements. Nurnberg (2006) also suggests that CFOA are important not only because they are used in fundamental analysis, but also because they are used as a measure of corporate performance that can be superior to net income.

The importance of statement of cash flows has significantly increased since accounting scandals in early 21st century. Cash flows from operating activities are considered the most important for investors and creditors, as they come from the main revenue-producing activities and are more sustainable than cash flows from investing and financing activities (Baik *et al.*, 2016). Altwood *et al.* (2011) have investigated the relationship between adoption of IFRSs and reliability of future cash flows. Their findings indicate that if IFRSs flexibility is used to disclose more private information, earnings reported under IFRSs are "more persistent and more closely associated with future cash flows than earnings reported under US GAAP" (Altwood *et al.*, 2011, p. 107). Gordon *et al.* (2017) examine managerial incentives to inflate CFOA and conclude that interest paid is commonly used CFOA increasing item.

Considering prior research, it can be concluded that the net effect of adopting of IFRSs on accounting harmonization is still uncertain. The transparency and comparability arguments suggest that financial reports quality should improve. On the other hand, other influencing factors such as incentives of management and institutional factors, show that it is not necessarily the case.

2.5. Research gap

This paper contributes to the international accounting research by focusing on consequences of IFRSs adoption and harmonization of financial reporting, namely effects on statement of cash flows arising from different classification of interest and dividends by the listed corporations in Estonia, Latvia and Lithuania. The paper builds on literature for effects of mandatory IFRSs adoption on financial reporting and provides evidence that more flexible financial reporting standards are likely to increase managerial opportunism in classification shifting. It results in non-comparability of statement of cash flows, thus showing that intended goal of harmonization by IFRSs has not been achieved yet. Moreover, while majority prior research focuses on income classification shifting, this paper shows that classification shifting is also present in cash flow statement.

2.6. Hypothesis development

Previous research indicates that it is important to distinguish between accounting rules (*de jure* harmonization) and application of those rules in practice (*de facto* harmonization) (Wehrfritz and Haller, 2014).

Estonia, Latvia and Lithuania are countries within a Baltic region, which have long historical and cultural connections and are often viewed as one market. After regaining of independence in 1990s, the countries carried out major economic reforms and as a result have been classified as developed economies: Estonia from year 2011, Latvia from year 2014 and Lithuania from year 2015. The countries of Estonia, Latvia and Lithuania have been rather proactive in adoption of mandatory IFRSs for listed companies, with many listed companies using early adoption option for IFRSs.

Nobes (2006) has summarized numerous reasons for national versions of IFRSs implementation practice and has provided a theoretical framework for analysis. His framework has been used in numerous empirical testing of IFRSs adoption effect both in Europe (Wehrfritz *et al.* (2012) on Germany vs UK, Kvaal and Nobes (2010) on Australia, France, Germany, Spain and UK) and other countries (Zeff and Nobes (2010) on Australia, Baik *et al.* (2016) on Korea). As Baltic countries were not included in such research previously, Nobes (2006) and Nobes (2013) framework will be used for hypothesis development. Nobes (2006) identifies the following major causes for lack of harmonization under IFRSs: (1) Different versions of IFRSs due to different endorsement, (2) different translations of IFRSs, (3) Gaps in IFRSs, (4) Explicit options in IFRSs, (5) Covert options in IFRSs, (6) transition or first-time adoption of IFRSs and (8) imperfect enforcement of IFRSs. In case of Estonia, Latvia and Lithuania, public companies are traded on the joint stock exchange, thus information requirements form capital markets are the same. All three countries are member states of the EU, thus same directives concerting IFRSs have been adopted. As of 2003, IFRSs have been permitted to be used by almost all business entities in Estonia. From January 1, 2005, IFRSs have been mandatory for all listed companies, credit and financial institutions, insurance companies (Alver and Alver, 2017). Lithuania and Latvia have mandatory IFRSs for listed companies from 2005.

Similarity of counties is further supporter by Borker IFRSs orientation index. Borker (2015) has developed a IFRSs orientation index, based on Hofstede's Four Dimensions and Gray Accounting values. According to his findings Estonia, Latvia and Lithuania are rather similar, with Estonia and Latvia scoring 67 points, while Lithuania 64, which places countries along Sweden, Finland and Germany (Borker, 2015).

In view of the above, hypothesis of the paper is:

There is harmonization in statement of cash flows within and among listed Baltic States' companies.

To achieve the aim of the article, the authors have raised the following research questions:

- What choices do companies make for presentation formats of statement of cash flows?
- What choices do companies make for classification of interest received and interest paid?
- What choices do companies make for classification of dividend received and dividend paid?

3. Research methodology

To quantify the degree of uniformity of practices adopted by companies, C-index proposed by van der Tas (1988) has been applied. The use of the index implies that maximum harmony is reached when all the companies in the sample select the same alternative. For purposes of this study a sample of is 100% of listed companies on Baltic Nasdaq is used, which eliminates the bias of sample over population (Taplin, 2011). These are companies with very similar characteristics as they operate in international context and the characteristics of users of their financial statements are similar independently of their national context. For this purpose, C-index is considered as the most suitable for the measurement of harmony level. Following Archer *et al.* (1995, 1996) C-index is broken down to within-country and between-country indices.

Data collection and sample. Research population consisted of 33 public companies. The sample contains all companies that are listed on Nasdaq Baltic market, which includes stock exchanges in Tallinn, Riga and Vilnius. For each observation in the sample, financial statements of the company are retrieved from NASDAQ website (www.nasdaqbaltic.com) for years 2010–2017. The period allows eliminating extraordinary classification due to mandatory first time adoption of IFRSs and also allows observing consistency in statement of cash flows items' classification.

Data was sourced from secondary sources: Annual Consolidated Financial Statements of companies, namely Statement of Cash Flows.

- **Estonia**: 100% listed companies, 15 in total.
- **Latvia:** 100% listed companies, 5 in total.
- **Lithuania:** 100% listed companies, 13 in total.

In general, companies in such specific sectors as banking and insurance are subject so specific treatments. Therefore, two financial institutions, LHV Group in Estonia and

Šiauliu Bankas in Lithuania have been excluded from the sample, leaving 31 observations.

The accounting issues selected for harmonization measurement were: format of statement of cash flows, interest paid and received classification, dividends paid and received classification. The reason for selecting these specific issues is largely due to the fact that they are considered among the most controversial in terms of comparability of statement of cash flows (Atwood *et al.*, 2011; Baik *et al.*, 2016; Barth *et al.*, 2012; Bradbury, 2011; Gordon *et al.*, 2017; Hollie *et al.*, 2011).

4. Results and discussion

One way to compare financial statements is to measure the extent of similarities of differences between them, which would allow drawing conclusions, which statements are most alike and which are most different. The comparability in accounting methods used increases, as companies concentrate more on one alternative method, and Herfindahl or H-Index (Roberts, *et al.*, 2008) can measure this concentration.

H-Index is:

$$\sum_{i=1}^{n} p_i^2 \ ,$$

where:
p_i – the proportion of companies using accounting method *i*;
n – the maximum number of possible methods that can be used.

H-Index can vary from low 1/n when companies use various methods, to a high of 1.00 when all companies use the same method. The downside of H-Index is that is does not provide information on one-to-one relationship between popularity of alternative methods, thus interpretation could be ambiguous.

C-index, developed by van der Tas in 1992 and adjusted by Archer *et al.* in 1995, considers proportion of companies that use each accounting method and thus looks at a number of financial statements that are compatible with each other (Roberts, 2008).
C-Index is:

$$\frac{\sum(n_i \times (n_i - 1))}{N \times (N-1)} \ ,$$

where:
n_i – number of companies using method i
N – the total number of companies.

The basic C-index measures direct comparability of reported accounting numbers which are treated as comparable only if the same accounting method is used by any two companies and does not take into account supplementary information which may assist the user to make adjustments to achieve comparability (Archer *et al.*, 1995).

Both H-Index and C-Index are popular measures of comparability, or harmony, of financial reports. C-index can be used to measure international harmony, defined as comparability of financial reports regardless of country of origin (called "between-country" harmonization). It provides answers to questions regarding harmonization level in one country as well as to what extent financial reports are compatible from one county to another.

4.1. Format of Statement of cash flows

Cash flows from operating activity section can be prepared using either direct method (showing cash inflows and outflows) or indirect method (methodologically reversing effects of accruals from the net income, using information from income statement and balance sheet). Both IASB and FASB consider direct method as preferred and while most jurisdictions allow the option of either direct or indirect method, majority of companies choose indirect method of presentation (Bradbury, 2011).

Table 1. **Format of Statement of cash flows**

	Direct method		**Indirect method**	
Country	**No of Firms**	**%**	**No of Firms**	**%**
Estonia	3	21%	11	79%
Latvia	0	0%	5	100%
Lithuania	0	0%	12	100%
C-Index				
Overall	0.81			
Within-country	0.81			
Between-country	0.77			

(Source: Compiled by the authors from companies' annual reports*)*

Table 1 compares the format chosen for statement of cash flows. As can be seen, 100% of companies of companies in Lithuania and Latvia use indirect method, while in Estonia 21% use direct method and 79% indirect method. C-index is rather high, with majority of companies preferring indirect method.

4.2. Classification issues

Appendix 1 summarizes classification of interest received and interest paid, dividends received and dividends paid among Operating, Investing and Financial Activities by Baltic listed companies. Based on the data, H-Index for harmonization is shown in Table 2.

Table 2. **H-Index for Baltic countries**

Country/H-Index	**IntR**	**IntP**	**DivR**	**DivP**
Estonia	0.76	0.50	0.72	1.00
Latvia	0.52	0.52	1.00	1.00
Lithuania	0.72	0.50	1.00	1.00

(Source: Compiled by the authors from companies' annual reports*)*

Table 2 provides country specific harmonization levels measured with H-Index for each category. As can be seen, there is a high level of country wise harmonization of dividend treatment, while not so in interest classification. To understand whether such classification pattern could be influenced by national standards, Table 3 provides national standard requirements (pre-IFRSs) for classification of interest and dividends in each of the countries.

Table 3. **National requirements for classification on Statement of cash flows**

Country	CFOA	CFIA	CFFA
Estonia	Interest paid	Interest received Dividends received	Dividends paid
Latvia	Interest paid	Interest received Dividends received	Dividends paid
Lithuania		Interest received Dividends received	Dividends paid Interest paid

(Source: Compiled by the authors*)*

Classification results show partial correlation with pre-IFRSs requirements for listed companies. Estonia and Latvia have permitted interest paid to be recorded only in CFOA, while currently 57% and 40% of companies choose this option. In Lithuania, on the other hand, national standards have required interested paid to be classified as CFFA only. Currently, only 42% of companies are using this option, while 58% of companies have shifted classification to CFOA. It shows a major shift of classification with IFRSs adoption. All three countries have required classifying interest and dividends received as CFIA. Results in Appendix 1 show significant shifts in classification of interest received in all countries, especially Latvia (with 40% using CFOA option). Dividends received, continue to be mostly classified as CFIA, resulting in high H-index and following historical treatment. Under national standards, dividends paid could be classified only as CFFA and companies continue to use this option, with perfect harmony of 1.0 H-index.

Therefore, it can be concluded, that IFRSs based financial statements of Baltic listed companies, do not follow historical traditions for classification of interest paid and received, while dividends received and paid are classified more persistently over time. The following sections will provide a more detailed analysis of classification issues and harmony measurement using C-Index for both within-country and between-country harmonization level.

4.2.1. Interest received classification

Table 4. **Classification of interest received**

Country	Operating activities		Investing activities		Financing activities	
Estonia	3	21%	11	79%	0	0%
Latvia	2	40%	3	60%	0	0%
Lithuania	3	25%	9	75%	0	0%
C-Index						
Overall	0.68					
Within-country	0.70					
Between-country	0.44					

(Source: Compiled by the authors*)*

As can be seen from Table 4, interest received classification varies among each country, with Estonian and Lithuanian companies heavily leaning towards classifying interest received to CFIA (80% and 75% respectively) and CFOA (33% and 25%). While in Latvia, it is more evenly dispersed, with CFOA classification by 40% CFIA classification by 60%. This distribution also shows that Lithuanian companies are far more likely to allocate interest received over different cash flow categories, as 7 companies out of 12 have interest received in both Operating and Investing cash flows. In Estonia, only 3 out of 14 companies use this approach, while in Latvia, 1 out of 5. None of the companies in the sample has have classified interest received as part of financing activities. Different approaches used are reflected in C-index, with within-country harmony being rather high, but dropping significantly at between-country level. Companies in Estonia, Latvia and Lithuania are using different treatment for interest received classification on statement of cash flows and harmony index is low.

4.2.2. Interest paid classification

Table 5. **Classification of interest paid**

Country	Operating activities		Investing activities		Financing activities	
Estonia	8	57%	0	0%	6	43%
Latvia	2	40%	0	0%	3	60%
Lithuania	7	58%	0	0%	5	42%
C-Index						
Overall	0.48					
Within-country	0.46					
Between-country	0.25					

(Source: Compiled by the authors*)*

Table 5 shows than in reference to interest paid classification, companies lean towards classifying it as either CFOA or CFFA, while none allocate it to investing activities. In this section, Estonian and Lithuanian companies show similar trends, with 57–58% allocating it to CFOA and 43–42% to CFFA, resulting in average within-country C-index of 0.46. While in Latvia, proportions are reversed, with more companies allocating interest paid to CFFA. This is reflected by significantly lower between-country C-index of 0.25.

Companies in Estonia, Latvia and Lithuania are using different treatment for interest paid classification on statement of cash flows and between-country harmony index is low.

4.2.3 Dividends received classification

Table 6. **Classification of dividends received**

Country	Operating activities		Investing activities		Financing activities	
Estonia	0	0%	4	29%	1	7%
Latvia	0	0%	1	20%	0	0%
Lithuania	0	0%	9	75%	0	0%
C-Index						
Overall	0.88					
Within-country	0.90					
Between-country	0.83					

(Source: Compiled by the authors*)*

Table 6 provides summary of dividends received classification. Before looking at differences in dividend received classification, it should be noted that frequency of such income is rather different among countries; in Estonian sample 36% of firms (5 out of 14) had dividend income, in Latvia – none, in Lithuania – 75% (9 out of 12 firms). Therefore, if to restate the figures to the firms having actual dividend income, in Estonia 80% (4 out of 5) classify dividends received as CFIA and 20% as CFFA (1 out of 5), none use CFOA option. While in Lithuanian sample all 100% classify dividends received as CFIA. Resulting C-index supports that harmonization is achieved as to dividends received classification.

Companies in Estonia, Latvia and Lithuania are using different treatment for dividends received classification on statement of cash flows, but with most companies clustering in investing activities. Thus, harmonization level is high.

4.2.4. Dividends paid classification

Table 7. **Classification of dividends paid**

Country	**Operating activities**		**Investing activities**		**Financing activities**	
Estonia	0	0%	0	0%	14	100%
Latvia	0	0%	0	0%	5	100%
Lithuania	0	0%	0	0%	12	100%
C-Index						
Overall	1.00					
Within-country	1.00					
Between-country	1.00					

(Source: Compiled by the authors*)*

Dividends paid is the only homogenous area of classification by Baltic listed companies – all classified dividends paid as CFFA. Thus, C-index is a perfect 1.00 at both within- and between-country level.

As noted in previous sections, Conceptual Framework stresses that "consistency, although is related to comparability, is not the same. Consistency refers to the use of the same methods for the same items, either from period to period within a reporting entity or in a single period across entities" (IFRS CF Q21-23). The results of study show that there is a longitudinal consistency of classification by observed companies for all items under analysis: format of statement of cash flows, interest received, interest paid, dividends received and dividends paid. During the period of observation, some companies have changed classification for some items, but have thereafter been consistent. For example, AB Lietuvos Energijos Gamyba has reclassified dividends received from CFFA to CFIA in 2012; AS Tallinna Vesi has reclassified interest paid from CFOA to CFFA in 2012. An interesting shift has occurred in AS Merko Ehitus, company, which has shifted interest received classification from CFIA and now classifies it over two activities: CFOA and CFIA.

Both dividends received and dividends paid classification has achieved a high level of harmony intended by IFRSs.

However, interest paid and interest received treatment despite *de jure* harmonization of the standard, has not resulted in *de facto* harmonization.

5. Conclusion

Harmonized accounting standards do not necessarily lead to harmonized accounting outcomes, if preparers have flexibility in the application. Country-specific factors may have effect on variation seen in IFRSs reporting across Baltic countries. In this study variations in preparation and classification of statement of cash flows by listed companies on Baltic Nasdaq have been examined. Results have revealed the lack of homogeneity in various accounting areas and show partial support for national variances in IAS 7 application for statement of cash flows.

Therefore, IAS 7 flexibility in choices for classification is a two side issue: on one hand, it should allow for higher quality financial reporting as managers can incorporate for company specific factors; on the other hand, it reduces comparability of reports among the companies.

The paper contributes to accounting literature analysing the consequences of IFRSs adoption and reporting. Considering, that more than 120 countries have already adopted IFRSs, this research has practical application for the business analysts and international investors. The results show that classification flexibility allowed under IAS 7 has been used by Baltic Main List companies and has increased variation in classification of interest and dividend received and paid. Further research could focus on the actual effects of such classification flexibility on the cash flow ratios.

Even if IFRSs are adopted everywhere, there will still be political, cultural and regulatory influences, which can result in inconsistent application of accounting standard from one country to another (Grossman *et al.*, 2013). Convergence *de facto* is still less certain than convergence *de jure*, especially for principles based standards like IFRSs (Ball, 2006).

Users of financial statements find statement cash flows to be useful, especially in getting information how cash, a vital resource to a business entity, comes into company and how it is utilized (Petty and Rose, 2009).

The results of current study show that harmonization has been achieved only for some issues under investigation, like statement of cash flows format, dividends paid and dividends received. While interest paid and interest received classification has not been harmonized yet. Thus, users of financial reports should not assume full comparability of statements of cash flows for Estonian, Latvian and Lithuanian firms, despite a single stock exchange, cultural and economic similarities of countries.

Future research

The results of current study show what users of financial report’s users cannot assume comparability of statements for Estonian, Latvian and Lithuanian firms, despite a single stock exchange, cultural and economic similarities of countries. Future research should focus on the significance of such classification variances on financial ratios, and Statement of cash flows ratios in particular, as integration of cash flow data with traditional ratios could provide a superior measure of performance over accrual accounting data alone.

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Appendix 1. **Classification of interest received, interest paid, dividends received and dividends paid**

Country	CFOA				CFIA				CFFA			
	IntR	IntP	DivR	DivP	IntR	IntP	DivR	DivP	IntR	IntP	DivR	DivP
Estonia	3	8	0	0	11	0	4	0	0	6	1	14
	21%	57%	0%	0%	79%	0%	29%	0%	0%	43%	7%	100%
Latvia	2	2	0	0	3	0	1	0	0	3	0	5
	40%	40%	0%	0%	60%	0%	20%	0%	0%	60%	0%	100%
Lithuania	3	7	0	0	9	0	9	0	0	5	0	12
	25%	58%	0%	0%	75%	0%	75%	0%	0%	42%	0%	100%

(Source: Compiled by the author from companies' annual reports)

Where:
IntR – Interest received
IntP – Interest paid
DivR – Dividends received
DivP – Dividends paid
CFOA - Cash flows from operating activities
CFIA - Cash Flows from investing activities
CFFA - Cash Flows from financing activities

Assessing comparability of accounting information using panel data analysis, in the case of Romanian listed companies

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Abstract: *Information comparability can be ensured by consistently applying the same financial reporting framework or similar financial reporting frameworks. The comparability of financial information can be measured both between firms and from one period to another. In the study there has been evaluated the comparability of accounting information over time, from one financial exercise to another, and in space, between firms, with panel data analysis using models with fixed-effects. The study was conducted on a sample of 63 Romanian listed companies, during the period 2007-2016. The main results have revealed that the move to IFRS has led to increased comparability of financial information.*

Keywords: *Accounting information, accounting quality, comparability, IFRS, panel data analysis.*

1. Introduction

The IASB's general framework specifies that accounting information reported by a firm is useful when it can be compared to information reported by other similar firms or information reported by the same firm but in different time periods (IASB, 2015, p. A34). The comparability of accounting information can be ensured by consistently applying the same financial reporting framework or similar financial reporting frameworks and its measurement can be achieved through comparability indexes (Gray *et al.*, 2009, pp. 431-447).

The comparability of the reported accounting information is influenced by the financial reporting system to which a firm subscribes, influenced in turn by a number of cultural, social or economic factors (Nobes and Sandler, 2013, pp. 573-595). The impact of these factors on the comparability of accounting information can be found at the level of reporting, content, and even at the level of the values recorded for certain financial indicators. Differences in financial reporting due to membership of a particular accounting system may lead to different performance records, although the companies under review record comparable values (total assets), number of employees and turnover (Rossetti and Verona, 2017, p. 30).

The adoption of IFRS is a desideratum in reflecting a true and a fair view on the financial position and performance. Comparability may highlight convergence to IFRS or significant differences between this reporting referential (IFRS) and local or national standards. According to IFRS, comparability helps users of accounting information to

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identify differences or similarities between a set of items included in the financial statements (IASB, 2015, A34).

The purpose of this study is to assess the quality of accounting information, in terms of comparability, at the level of the Romanian companies listed on the Bucharest Stock Exchange (BSE), under the transition to the new financial reporting system - IFRS, proposed by the IASB. In the study, the comparability assessment is performed by using panel data analysis (Jaba *et al.*, 2017).

The paper is structured as follows: a section on literature review and hypothesis development, a section dedicated to research methodology, a section on results and discussion, and finally the section dedicated to the research conclusions.

2. Literature review and hypothesis development

Accounting information provides a relevant description and in the most significant aspects of the financial system, and it must provide to all users a good presentation of the financial position and performance that a firm record in a financial year. The true and the fair view of financial position and performance is ensured by reporting and presenting standardized financial statements (IAS 1, IASB, 2015).

Using accounting information, existing and potential investors, creditors and equity lenders can estimate the value of the firm (IASB, 2015). Also, based on reported information, users can identify firm strengths and vulnerabilities, assess their liquidity and solvency, the need for additional funding, probability of obtaining funding, and last but not least prospects for future cash flows (Vernimmen *et al.*, 2009).

In order that accounting information to be useful, the IASB's conceptual general reporting framework (issued on January 1, 2015) proposes a set of quality characteristics, structured in two groups, the fundamental characteristics and the ones that amplify the first ones (IASB, 2015). In the category of the fundamental quality characteristics are included the value relevance and the faithful representation, and in the category of the quality characteristics that amplifies the first ones, are included: comparability, verifiability, timeliness and understandability (IASB, 2015; Istrate, 2016.b).

The accounting quality can be assessed by using quality criteria (Isaic-Maniu and Voda, 1998; Jemna, 2005). Based on quality criteria and indicators, end-users of the information transmitted can make judgments and make decisions (Wang *et al.*, 1995, p. 350; Wand and Wang, 1996, p. 87). The quality of accounting information is intended to give the financial position and financial performance of the firm as much is possible, without being materially misstated by fraud or errors (Robu *et al.*, 2016).

Ensuring the quality of accounting information can be achieved on the basis of recognized and accepted international reporting references (Hansen, 1991; Barth *et al.*, 2008), such as IASB (The International Accounting Standards Board) or the FASB (The Financial Accounting Standards Board) in order to minimize the determining factors that lead to the occurrence of frauds and errors and to increase transparency in financial reporting (Barth *et al.*, 2012).

The comparability of the accounting information is based on the possibility of identifying certain differences or asymmetries both between messages sent from the same source to different users and from the same source but to one user at different times (Jemna, 2005). The issue of comparability is aimed at identifying similarities or differences between accounting information reported by the same firm but at different times (using or not common accounting references) or at the same time, or between information reported by the firm and other firms with which it can be compared, based on the use of a common accounting reference (Christensen and Demsky, 2008; Dick and Missonier-Piera, 2010).

Comparability can be ensured by applying a common reporting framework, by using the same currency in which the values of items describing position and financial performance are expressed, or by calculating some financial ratios (Barth *et al.*, 2012).

Compliance with IFRS provides users with: a) substantiating the decisions to purchase, store or sell assets; b) assessing the management and management's accountability capacity; c) assessing the ability to pay staff, to provide benefits to its employees; d) assessing the guarantees the firm can provide for the credits that have been granted to it; e) compliance with fiscal policies; f) determining profit and dividends to be distributed; g) development and use of statistical data on national income; h) regulating the business of the company (IASB, 2015).

Measuring the difference between IFRS and national rules can be achieved using a comparability index - *CI* (Gray, 1980; Gray *et al.*, 2009):

$$CI = 1 - (ValueIFRS - ValueNIFRS)/(|ValueNIFRS|) \quad (1)$$

where:
CI represents the comparability index for which values higher than 1 show a decrease in the values of indicators obtained under the IFRS (*ValueIFRS*) against *ValueNIFRS* (the values of the indicators obtained under the application of the national financial reporting rules), while a sub-unitary value reflects the opposite - an increase in the figures due to the changeover to IFRSs.

Comparability of accounting information can be assessed both between firms (applying similar accounting rules) and from one period to another (when switching to another reporting framework). Identifying differences between firms but also over time may explain changes in the response of key users to the disclosure of accounting information in financial statements (Barth *et al.*, 2012).

Starting from the evidence presented in the literature from the field, the following research hypothesis is proposed in the study to be validated:

H: The transition to IFRS has led to significant differences in the financial reporting of BSE listed companies from one period to another, but has ensured the comparability of financial information between firms.

Starting from this hypothesis, the study proposes the estimation of the differences indicating the existence of the comparability of the accounting information from one financial year to the other, as well as the differences indicating the existence of the comparability of the accounting information from one firm to the other.

3. Research design

In order to achieve the objectives proposed in the study and to obtain the research, a statistical approach is taken in defining the analysis problems and choosing the models and methods of analysis, observing and collecting the data used in the analysis, processing and statistical analysis of the collected data, and at the last stage the interpretation the results obtained and decision-making (Bărbat, 1972; Jaba, 2002).

In the study it was analysed the comparability of accounting information both in time, from one financial exercise to another, and between firms. The comparability assessment was carried out with panel data analysis using fixed-effects models. The estimation of non-significant fixed time effects indicates the existence of comparability of accounting information from one financial year to another, while non-significant individual fixed effects indicate the existence of comparability of financial information from one firm to another.

3.1. Target population and sample

In the paper, for the statistical assessment of the quality of accounting information, the studied population is represented by Romanian companies listed on a regulated capital market and applying IFRS in the reporting of financial statements.

In Romania, the main regulated capital market is represented by the Bucharest Stock Exchange (*BSE*), under the direct supervision of the Financial Supervisory Authority (*FSA*). Currently, the *BSE* includes the following sections: *Regulated Market - BSE*, *AeRo* (a regulated market dedicated to companies that do not meet the size or seniority criteria to be listed on the Regulated Market) and *ATS-International* (Alternative Transaction System trading of international shares).

By the end of 2017, the *BSE* had 403 listed and active companies, as follows: in the Regulated Market section - *BSE*, 87 companies; at the *AeRo* section, 301 firms; at the *ATS-International* section, 15 companies.

In the paper, there were selected only the companies included in the first section of *BSE*, those that are traded on the Regulated Market. Criteria for admission and maintenance on the Regulated Market are much more rigorous for companies included in this section than those listed on *AeRo* and *ATS-International*. The main criteria refer to the anticipated market capitalization of at least 1 million euros and at least 3 years of financial reporting. The main post-admission conditions also include the obligation to report to *FSA* and *BSE*, the mandatory publication of both annual and quarterly financial statements (subject to statutory audit), and the application of a Corporate Governance Code by firms. These conditions aim at ensuring transparency in financial reporting and obtaining quality of accounting information.

The *BSE* Regulated Market section comprises two major categories of companies, *Premium* and *Standard*. The inclusion of companies listed in one of the two categories is intended to meet a range of minimum capital, minimum performance, financial performance and liquidity criteria (Filip and Raffournier, 2010, p. 83).

By the end of 2017, the *BSE* Regulated Market section had 87 companies, out of which 24 were *Premium* companies, 60 were *Standard* companies, and 3 *International* (*Int'l*). Only firms included in the *Premium* and *Standard* categories, respectively 84 firms were considered in the analysis. Starting from the 84 traded companies in the BSE regulated market (*Premium* and *Standard* categories), the following restrictions were taken into account for the selection of the companies included in the final sample:

a. the exclusion of companies that have been suspended due to insolvency, bankruptcy or are very rarely traded;
b. the exclusion of companies operating in the banking, investment, insurance or other financial intermediaries, precisely to ensure the comparability of the financial indicators related to the position and the financial performance, provided that such firms are subject to other regulations on financial reporting;
c. the exclusion of companies for which not all the financial and non-financial information necessary for analysing the analysis was found.

Depending on the restrictions mentioned, the size of the sample analysed shall be calculated as follows:

Total tradable companies in the *BSE* Regulated Market section, *Premium* and *Standard* categories	84
• companies operating in the banking, investment and insurance funds, or acting as financial intermediaries	(15)
• companies for which all the information necessary for the analysis has not been found	(6)
Total sample	**63**

The sample includes 63 Romanian companies listed on the *BSE*, in *Premium* and *Standard* categories, for which data were collected during the period 2007-2016, which ensures a number of 630 observations.

The timely comparability of accounting information has taken into account the two reporting periods under *RAS* - Romanian reporting standards and *IFRS* - International Financial Reporting Standards. The reporting period under RAS covers the financial years 2007-2011 and the reporting period under IFRS covers the years 2012-2016.

3.2. Variables, data source and methods for data analysis

Starting from the system of indicators by which the accounting information is reported and valued by the stakeholders, the variables used in the paper refer to the main elements that reflect the financial position and performance (Raffournier, 2012; IASB, 2015).

The data for the variables considered in the analysis were collected with the dedicated *DataStream Advanced 9.2* software for the 2007-2016 period, thus reducing the collection-record errors.

The assessment of the comparability of accounting information as well as the impact that accounting information may have over time and between firms on investor decisions has been made by using panel data analysis (Jaba *et al.*, 2017). The study retains the models with time fixed effects and with fixed individual effects.

Starting from the classic model used to assess the value relevance of accounting information based on yields (Barth *et al.*, 2012, pp. 68-93), the following regression model is proposed for analysis:

$$ln(Pt/Pt\text{-}1) = \beta 0 + \beta 1 \cdot \Delta ROA + \beta 2 \cdot \Delta ROE + \beta 3 \cdot \Delta FL + DFi + DTt + \varepsilon it \qquad (2)$$

where,
P represents the stock price of the company at end of the year,
ΔROA represents the variation of return on assets,
ΔROE represents the variation of return on equities,
ΔFL represents the variation of financial leverage,
DFi represents the differences between firms that arise as a result of RAS or IFRS application in the same time period,
DTt represents the differences between different time periods for the same firm arising from the application of RAS or IFRS from one financial year to another.

In the paper, to obtain the results of the research, data analysis was carried out by using *IBM SPSS 22.0* (Statistical Package for Social Sciences) and *SAS 9.0* (Statistical Analysis Software).

4. Results and discussions

Starting from the research objectives proposed in the study, the main reached results consider the identification of the principal components of the Romanian BSE listed companies' financial statements, as well as the estimation of these components' influence on the transparency in financial reporting.

The comparability over the time of accounting information has taken into account the two reporting periods, under *RAS* - the Romanian Accounting Standards and *IFRS* - International Financial Reporting Standards. The reporting period under RAS covers the financial years 2007-2011 and the reporting period under IFRS covers the years 2012-2016.

Using ANOVA for the financial ratios included in the *equation (2)*, as well as for the market response to the reporting of the financial statements, namely the price variation, there have been estimated some descriptive statistics, that are summarized in Table 1.

Table 1. **Descriptive statistics for the variables included in model (2)**

Variables		N	Mean	Std. Dev.	Std. Error
ln(Pt/Pt-1)	1-IFRS	314	.0560	.57728	.03258
	2-RAS	315	-.1780	.80449	.04533
	Total	629	-.0612	.70950	.02829
FL	1-IFRS	314	.490271	1.2348750	.0696880
	2-RAS	316	.770680	1.0252554	.0576751
	Total	630	.630921	1.1423310	.0455116
ROA	1-IFRS	314	.020162	.0762778	.0043046

Variables		N	Mean	Std. Dev.	Std. Error
	2-RAS	316	.035472	.0690888	.0038865
	Total	630	.027842	.0731053	.0029126
ROE	1-IFRS	314	.048152	.1401309	.0079080
	2-RAS	316	.022749	.1366553	.0085914
	Total	630	.036817	.1390446	.0058393

(Source: Own processing in SPSS 22.0*)*

Based on the results presented in *Table 1*, it can be noticed that there are significant differences in the financial position and performance information reported by BSE listed companies under RAS and IFRS. These results lead to the conclusion that there is no comparability between the two reporting referentials. The main differences were recorded at both the level of the indicators related to the profitability and the one related to the financial structure.

The main results obtained under *SAS 9.0* refer to a series of statistics related to the proposed model (*Table 2*), testing the model with fixed effects using the F test (*Table 3*), testing the model using the Hausman test (*Table 4*) and the estimations for the fixed effects model (Table A.1 from Appendix).

Table 2. **Statistics related to the model with cross and fixed effects**

Statistics for the model with fixed effects			
SSE	7226808.644	**DFE**	491
MSE	14718.5512	**Square root of MSE**	121.3200
$\mathbf{R^2}$	0.1267		

SSE = Sum of squares of errors;
DFE = The number of degrees of freedom associated with errors: the number of observations in the data set minus the number of parameters;
MSE = Mean squares of errors.

(Source: Own processing in SPSS 22.0*)*

From *Table 2,* based on the R^2 value, it can be seen that 12.67% from the variance in the variance in the yield of a share (*ln(Pt/Pt-1)*) is explained by the influence of *ROA*, *ROE* and *FL,* in the case of the model with cross and time fixed effects.

Table 3. **Testing the Fixed Effect Model with the F Test**

F statistic for testing the existence of fixed effects			
No. DF	Den DF	Value of F test	Pr > F
70	491	1.02	0.4474

(Source: Own processing in SPSS 22.0*)*

The value of the F test, calculated as a ratio between the total variance estimator (MST) and the error variance estimator, is 1.02. This value indicates the absence of cross and time fixed effects at the level of the proposed model in *equation (2),* although the determinants, *ROA* and *ROE*, have a significant influence on the variance of the share's yield (*ln (Pt / Pt-1)*).

Table 4. **Testing the model with fixed effects using the Hausman test**

Hausman test for random effects		
DF	Value of the test	Pr > m
3	2.11	0.5500

(Source: Own processing in SPSS 22.0*)*

Table 4 complements *Table 3* by providing the result obtained by applying the Hausman test (*H_0: the model has random effects; H_1: the model has no random effects*). The Hausman specification test can also be used to test the consistency of the predictors of the proposed model parameters; in the case of the model with time-fixed effects, the null hypothesis (*H_0*) specifies that the parameter estimators are consistent but inefficient, and in the case of the alternative hypothesis (*H_1*) the model parameters estimators are consistent and possibly efficient. Based on the results obtained, it can be appreciated that the estimated parameters for the proposed model has no random effects, and the model parameters are consistent but ineffective.

For the time-fixed effects model, the parameter estimates are presented in *Table A.1* of the *Appendix*. Only the estimates of cross and time fixed effects are retained for the study of comparability. The data shown in the table shows the absence of cross and time fixed effects (except for one company, *CS6: Aerostar*). This highlights the comparability of reported accounting information between firms. Also, the table shows the existence of only one time fixed effect (*TS: 2011*) for the financial year 2011, the last year in which RAS was applied in the financial reporting of BSE listed companies. The adoption to IFRSs, starting in 2012, has led to the maintenance of comparability of financial information from one period to another, despite the transition that has started in 2005.

5. Conclusions

Using advanced statistical data analysis methods, the quality of financial information can be assessed, as well as the analysis of the influence of its determinants, at the level of each quality feature. As well, advanced statistical data analysis methods can be used to assess the comparability of accounting information.

The use of panel data analysis can provide solutions to the influence in time of specific factors on the quality of accounting information. Estimating the differences in time and between the companies, at the level of the quality of accounting information, can provide clues of its comparability in terms of adopting new financial reporting frameworks, but also of increasing its relevance or faithful representation. The main results have revealed that the IFRS adoption has led to an increase of comparability of accounting information.

The use of panel data analysis contributes to increasing the accuracy of regression model parameter estimates, improving the analysis of a phenomenon by including individual and time dimensions in the model, simplifying the statistical inference process (using the classical assumptions of the regression analysis is not mandatory) (Hsiao, 2003).

The panel data analysis can be restricted by recording data, distorting error measurement, selecting individuals included in the analysed sample, using time series over short periods, by dependence of factors (Baltagi, 2005, pp. 4-9). Typical sampling problems may affect the construction and collection of panel data. The most common problems are to ensure representativeness, occurrence of non-responses, inaccurate answers or aberrant values, ensuring a constant frequency in data collection, and a set reference period (Baltagi, 2005, pp. 4-9).

A limit of this study is determined by the population observed and by the relatively small volume of the analysed sample. Compared to international studies, using samples of thousands or tens thousands of firms, the Romanian financial market is characterized by a small number of firms that can be analysed. This is due precisely to the insufficient development of the Romanian financial market, marked by a normative framework still undergoing transformation. Also, the Romanian experience regarding the implementation and application of reporting referencing to ensure the quality of financial information - IFRS is recent, compared to international practice and experience.

From the point of view of the analysis, future directions aim at conducting international research, including other firms listed on the main European financial markets or that use the IFRS reporting framework. This will make a significant contribution to increasing the quality and the relevance of results achieved at national and international level.

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Appendix

Table A.1. **Parameters estimates for the model with fixed effects**

Parameters estimates						
Variable	**DF**	**Estimate**	**Std. Error**	**T value**	**Pr > |t|**	**Label**
CS1	1	-1.00916	57.3154	-0.02	0.9860	Cross Sectional Effect 1
CS2	1	1.722453	57.2719	0.03	0.9760	Cross Sectional Effect 2
CS3	1	1.08143	57.2507	0.02	0.9849	Cross Sectional Effect 3
CS4	1	0.445955	57.2117	0.01	0.9938	Cross Sectional Effect 4
CS5	1	-9.71163	57.5608	-0.17	0.8661	Cross Sectional Effect 5
CS6	1	-323.205	57.3112	-5.64	<.0001	Cross Sectional Effect 6
CS7	1	0.327731	57.3579	0.01	0.9954	Cross Sectional Effect 7
CS8	1	0.072639	57.2630	0.00	0.9990	Cross Sectional Effect 8
CS9	1	0.23852	57.2312	0.00	0.9967	Cross Sectional Effect 9
CS10	1	-1.00066	57.2963	-0.02	0.9861	Cross Sectional Effect 10
CS11	1	-0.77448	57.2293	-0.01	0.9892	Cross Sectional Effect 11
CS12	1	-0.83643	57.2317	-0.01	0.9883	Cross Sectional Effect 12
CS13	1	-2.13001	57.4266	-0.04	0.9704	Cross Sectional Effect 13
CS14	1	-0.63178	57.4122	-0.01	0.9912	Cross Sectional Effect 14
CS15	1	-3.35168	57.3593	-0.06	0.9534	Cross Sectional Effect 15
CS16	1	1.193345	57.2995	0.02	0.9834	Cross Sectional Effect 16
CS17	1	0.703253	57.2763	0.01	0.9902	Cross Sectional Effect 17
CS18	1	-1.08276	57.3001	-0.02	0.9849	Cross Sectional Effect 18
CS19	1	-2.33626	57.2392	-0.04	0.9675	Cross Sectional Effect 19
CS20	1	-10.9816	57.2785	-0.19	0.8480	Cross Sectional Effect 20
CS21	1	-5.55073	57.3981	-0.10	0.9230	Cross Sectional Effect 21
CS22	1	-2.77558	57.3443	-0.05	0.9614	Cross Sectional Effect 22
CS23	1	1.100698	57.2652	0.02	0.9847	Cross Sectional Effect 23
CS24	1	-6.87207	59.0711	-0.12	0.9074	Cross Sectional Effect 24
CS25	1	-4.63501	57.2215	-0.08	0.9355	Cross Sectional Effect 25
CS26	1	0.80004	57.2772	0.01	0.9889	Cross Sectional Effect 26
CS27	1	-1.44561	57.5442	-0.03	0.9800	Cross Sectional Effect 27
CS28	1	1.283593	57.2337	0.02	0.9821	Cross Sectional Effect 28
CS29	1	1.025493	57.2508	0.02	0.9857	Cross Sectional Effect 29
CS30	1	0.036051	57.2129	0.00	0.9995	Cross Sectional Effect 30
CS31	1	-3.71103	57.7540	-0.06	0.9488	Cross Sectional Effect 31
CS32	1	-10.3874	57.5004	-0.18	0.8567	Cross Sectional Effect 32
CS33	1	0.779668	57.2178	0.01	0.9891	Cross Sectional Effect 33
CS34	1	0.284308	59.1522	0.00	0.9962	Cross Sectional Effect 34
CS35	1	0.389696	57.2700	0.01	0.9946	Cross Sectional Effect 35
CS36	1	1.643145	57.3851	0.03	0.9772	Cross Sectional Effect 36
CS37	1	-2.98148	57.2388	-0.05	0.9585	Cross Sectional Effect 37
CS38	1	-0.22618	57.2330	-0.00	0.9968	Cross Sectional Effect 38
CS39	1	-3.2983	57.4232	-0.06	0.9542	Cross Sectional Effect 39

Parameters estimates						
Variable	**DF**	**Estimate**	**Std. Error**	**T value**	**Pr > |t|**	**Label**
CS40	1	-0.99003	57.2381	-0.02	0.9862	Cross Sectional Effect 40
CS41	1	-0.22487	57.1911	-0.00	0.9969	Cross Sectional Effect 41
CS42	1	1.060595	57.3967	0.02	0.9853	Cross Sectional Effect 42
CS43	1	1.723089	57.3626	0.03	0.9760	Cross Sectional Effect 43
CS44	1	1.095906	57.2207	0.02	0.9847	Cross Sectional Effect 44
CS45	1	-1.32113	57.2987	-0.02	0.9816	Cross Sectional Effect 45
CS46	1	-3.00147	57.4560	-0.05	0.9584	Cross Sectional Effect 46
CS47	1	-3.77064	57.3613	-0.07	0.9476	Cross Sectional Effect 47
CS48	1	-4.42145	57.4339	-0.08	0.9387	Cross Sectional Effect 48
CS49	1	0.99379	57.2015	0.02	0.9861	Cross Sectional Effect 49
CS50	1	-1.10891	57.2809	-0.02	0.9846	Cross Sectional Effect 50
CS51	1	-0.90982	57.2381	-0.02	0.9873	Cross Sectional Effect 51
CS52	1	0.516221	57.2539	0.01	0.9928	Cross Sectional Effect 52
CS53	1	-3.31482	57.7753	-0.06	0.9543	Cross Sectional Effect 53
CS54	1	0.242856	57.1914	0.00	0.9966	Cross Sectional Effect 54
CS55	1	0.306257	57.3848	0.01	0.9957	Cross Sectional Effect 55
CS56	1	-0.38408	57.2590	-0.01	0.9947	Cross Sectional Effect 56
CS57	1	1.335047	57.1915	0.02	0.9814	Cross Sectional Effect 57
CS58	1	-2.8059	57.3048	-0.05	0.9610	Cross Sectional Effect 58
CS59	1	2.116559	57.2763	0.04	0.9705	Cross Sectional Effect 59
CS60	1	2.646005	57.2317	0.05	0.9631	Cross Sectional Effect 60
CS61	1	0.464029	57.2969	0.01	0.9935	Cross Sectional Effect 61
CS62	1	1.532114	57.3114	0.03	0.9787	Cross Sectional Effect 62
TS1_2008	1	-8.90866	21.6327	-0.41	0.6807	Time Series Effect 1
TS2_2009	1	0.942808	21.6286	0.04	0.9652	Time Series Effect 2
TS3_2010	1	0.349965	21.7784	0.02	0.9872	Time Series Effect 3
TS4_2011	1	-47.9221	21.7788	-2.20	0.0282	Time Series Effect 4
TS5_2012	1	-0.9201	21.7776	-0.04	0.9663	Time Series Effect 5
TS6_2013	1	2.57315	21.6427	0.12	0.9054	Time Series Effect 6
TS7_2014	1	-0.4929	21.6224	-0.02	0.9818	Time Series Effect 7
TS8_2015	1	-0.28705	21.6946	-0.01	0.9894	Time Series Effect 8
Intercept	1	5.053593	42.9770	0.12	0.9064	Intercept
ΔROA	1	0.015509	0.3511	0.04	0.9648	
ΔROE	1	0.028289	0.2647	0.10	0.9149	
ΔFL	1	1.01997	1.3661	0.75	0.4557	

Dependent variable: $ln(P_t/P_{t-1})$

(Source: Own processing in SAS 9.0)

Detecting earnings management using Benford's Law: The case of Romanian listed companies

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Abstract: *Researches on (cosmetic) earnings management use sometimes the Benford's Law which proposes normal frequencies for the appearance of the digit from 0 to 9 in different position of numbers. By comparing these normal frequencies with those actually observed, we can detect differences that suggest possible manipulations of the financial indicators, especially those related to income. For more than 1,200 observations concerning Romanian listed companies during the 2001-2017 period, we compare these frequencies and found that, in general, the upward rounding of earnings is confirmed in a limited number of cases, even if the amplitude of these differences is often very important. The evolution of the accounting regulation leads to a situation where we start with rather downward manipulations, to arrive on the opposite direction. The IFRS transition seems to not lead to a limitation of the differences between the real frequencies and the normal ones. By separating the observations according to the size (total assets), we found that the bigger companies manipulate more upward the net income than the smaller ones. The companies audited by a Big N auditor report less upward manipulations. Finally, women CFOs seems to be less prudent, the net income reported by these companies presenting more upward rounding.*

Keywords: *(Cosmetic) earning management, Benford's Law, net income, Romanian listed companies, 2001-2017 period*

1. Introduction

Earnings management represent a research topic very present in the literature. The motivations behind the manipulations of the earnings (and of others financial indicators) often reflect pressures from some stakeholders (investors, creditors, and others), in the sense that the net income presented must be constant enough (if not increasing) from one year to the next, it must exceed the forecasts of the company and/or of financial analysts. Van Caneghem (2004) cites several studies that show that managers clearly tend to overstate the presented net income, rather than underestimate it. The extent to which entities manipulate the accounting information depends on several factors, including the ability of users to detect such manipulations (Vladu *et al.*, 2017). In identifying and measuring the manipulations of published accounting figures, several techniques are used, from the estimation of discretionary accruals to the audit opinion. A technique that allows us to identify possible manipulations is the comparison between the actual frequencies of the digits that form the numbers presented with the theoretical frequency provided by the Benford's Law (BL). In fact, the application of

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this law shows us a particular form of earnings management - *cosmetic earnings management* - defined as the tendency of firms to round up positive earnings, so that the order of magnitude of the number is exceeded. The BL shows the normal frequencies of the appearance of the digits from 0 to 9 in the various positions of the number reported. When the actual distribution of digits in these numbers shows frequencies different from those proposed by the BL, we can assume that the respective numbers were manipulated in one direction or the other (Carslaw, 1999; Nigrini, 1999; Kinnunen & Koskela, 2003; Van Caneghem, 2004; Guan *et al.*, 2006 and 2008; Archambault & Archambault, 2011; Jordan & Clarck, 2011; Jordan *et al.*, 2014; Dang & He, 2017 etc.). The accounting number's manipulations does not always go in the direction of increasing the net income or sales, some other indicators can be manipulated downward. When the firm seeks to round up the income, we can expect more frequent digits 1 or 5 on the first position of the number (Archambault & Archambault 2011), and also a more frequent appearance of the digit 0 (and possibly 1) in second position. In the literature, we found that in rounding upward the accounting numbers, the producers of the accounting information try to take advantage of the way users perceive differences between numbers. Most often, it is exemplified by the price of 1.99, perceived as being much lower than a price of 2.00. Conversely, a profit of 1,000,000 is perceived to be much larger than a profit of 998,000. At the same time, the directors of listed firms often receive bonuses based on certain financial indicators, so they are directly interested in the entity meeting the thresholds stipulated in the contracts. Jordan *et al.* (2014) argue that the manipulation of accounting number is present everywhere, but especially before the advent of stricter regulations on governance, financial reporting and auditing; in the 2000's. Kinnunen & Koskela (2003) propose a similar conclusion. The BL is used in the analysis of accounting numbers to identify possible manipulations, but also to detect fraud, by auditors or by other persons (Hogan 2008), or to identify errors in the preparation of financial statements or in other situations involving series of numbers (Amiram *et al.*, 2015). The BL can be used in the analysis of non-accounting data, such as economic forecasts or macroeconomic data.

The most frequent analysis in the literature concerns the presence of digits 0 and 9 in the second position of the numbers representing the net income of firms. The manipulation of positive earnings (profits) upwards can be assumed when the frequency of appearance of the digit 0 is greater than that proposed by the BL and when the frequency of appearance of the digit 9 is lower than the normal. In the case of loss firms, the situation is reversed: less 0 and more 9 on the second position. At the same time, we find in the literature studies that take into consideration the digits 4 and 5: rounding up means that there are fewer 4 and more 5 in the second position of the numbers reporting net income.

The BL makes it possible to test any other set of data presented in the financial statements, without calling other identification techniques for possible manipulations (Archambault & Archambault, 2011). Jordan *et al.* (2004) identify numerous studies that mobilize BL and demonstrate that this law represents a viable method for detecting manipulations of data.

Our study aims to analyse the distributions of digits (especially 0 and 9, but also 1 and 8, and 4 and 5) in the second position of numbers representing the net income reported by the Romanian listed companies during the period 2001- 2017, comparing them with the frequencies proposed by the BL. There are some studies in the literature that deal with the earning management by the Romanian listed companies, but to our knowledge, there are not yet any that use the BL in identifying possible manipulations of the reported net income. Our results, even if they show sometimes very large and inconsistent differences between the real frequencies and those of the BL, do not really confirm the hypothesis of the upward manipulation of the net income, but the results must be taken with caution because there are some variables to take into account: profitable firms vs. loss firms, the evolution of the accounting regulation, companies' size, auditor category, audit opinion and even the gender of the person who holds the position of chief financial officer.

Our findings contribute to the literature through a better understanding of the behaviour of Romanian listed companies, providing information about the situations in which users can expect some manipulation of reported financial indicators.

The rest of paper contains a literature review (Section 2), the methodology and the population studied (Section 3), the main results (section 4), conclusions and references.

2. Literature review

In our literature review, we include studies using that use Benford's law (BL) to analyse how companies manipulate some accounting numbers, especially net income. In addition, in the case of Romanian listed companies, we have tried to identify the main findings of the studies analysing the manipulations of the net income by these companies.

2.1. BL in the analysis of the accounting numbers

Most of the studies that use the BL in the analysis of the financial information reported provided by listed companies compute the frequency of the appearance of the different digits in second position of the these accounting numbers. There are studies that complement the analysis by presenting the frequencies of the digits appearing in the first position or by combining the frequencies of several digits.

Carslaw (1988) is one of the first to mobilize the BL in accounting and financial research - he analyses the numbers reported by the New Zealand firms and, only for companies that have declared a profit - he finds significant differences between the real frequency and the expected frequency (proposed by the BL) of the digits appearing in second position. Thomas (1989) separating profit companies from loss companies, applies the methodology proposed by Carslaw (1988) to the American listed firms and also finds deviations from the normal distribution of the digits, although the differences are less important than in Carslaw (1988). Thomas (1989) extends the analysis to the quarterly results (with similar deviations observed as for the annual results) and the earnings per share, where the behaviour in the direction of rounding upwards seems more intense and with an abnormally high number of EPS divisible by 5 or by 10. The comparison made by Thomas (1989) with the BL frequencies for the two categories of companies - profitable and unprofitable - indicates the existence of potential manipulation of the reported incomes.

Kinnunen & Koskela (2003) provide a more comprehensive analysis of how BL can help identify the cosmetic earnings management, with a sample of nearly 22,000 firms from 18 countries (most of them from the United States), for the period 1995-1999. After the separation of profitable firms - loss firms, Kinnunen & Koskela (2003) confirm the worldwide presence of trends towards the manipulation of net incomes. In addition, Kinnunen & Koskela (2003) find that the evolution of the difference between actual and expected frequencies depends on audit fees, applied accounting standards, cultural characteristics and the importance of the bonuses. The country where the differences between the actual and expected distribution of the 0 and 9 digits in second position of the net income is Spain, followed by Hong Kong and Singapore (Kinnunen & Koskela 2003).

Skousen *et al.* (2004) retain 1.800 Japanese firms, for the period 1974-1997, and find that Japanese managers very frequently round up the result, both by the manipulation of the first digit, the second one and even the third and fourth digit. These potential manipulations occur when the reported figures are close to the thresholds: management expectations, analyst's forecasts.

Van Caneghem (2004) analysis the British listed firms, in an attempt to find a link between the quality of auditing (proxied by the auditor's specialization by industry) and the tendency of firms to manipulate the net income upward. Van Caneghem (2004) eliminates the loss firms' observations, as well as those with a single-digit income, and finds significant differences between the actual and normal distribution (BL), in the case of the numbers 0 and 9 in second position of the income before tax; nevertheless, for firms audited by a Big N specialized in the industry, the adjustments seem not to be significant.

Nigrini (2005) studies the impact of the Enron/Arthur Andersen bankruptcy and, based on the 2001 and 2002 reports of American firms, finds that the trend toward upward manipulation of accounting numbers is more limited than before, but it is still persistent: the analysis relates to net income, turnover and earnings per share. Aono & Guan (2008), for a four-year period, compare how US firms round up the net income before and after the SOX, comparing the frequency of the number 0 in second place. Guan *et al.* (2008) analyse a large population of American listed companies (for the 1950-2005 period), grouped into eight sectors of activity and identifies an unequal (depending on the sector) but persistent trend towards the upward rounding of the earnings.

Jordan *et al.* (2008) continues the analysis of Thomas (1989) and find that the managers of the loss firms no longer manipulate the incomes, whereas, for the profitable firms, the managers continue to do this, with a greater amplitude for the small companies, and independent of the leverage or the operation performances. One of the particularities of the study of Jordan *et al.* (2004) is that they propose several types of groupings of firms analysed: large vs. small, more leveraged vs. less leveraged, more profitable vs. less profitable.

Archambault & Archambault (2011), based on data published in 1915, analyse the financial behaviour of some American firms before the creation of the Securities and Exchange Commission (SEC), an environment without accounting and auditing standards, but with some regulation of certain industries. Archambault & Archambault (2011) uses the BL, checking the frequency of appearance of the digits 1 and 5, on one side, and 4 and 9, on the other, trying to identify possible manipulations upward or downward. The conclusions of Archambault & Archambault (2011) are in line with their expectations, that is to say that upward manipulations seem to be more present in the case of net income, for companies in non-regulated industries. At the same time, Archambault & Archambault (2011) find that there is a trend of undervaluation of commercial debts and manipulation of current assets, total assets and equity. On the other hand, for the companies whose activity is regulated, the net income does not seem to be manipulated, but some components of the profit and loss account and some balance sheet elements present differences compared to the BL frequencies.

Roxas (2011) uses in his analysis approximately 100 US companies that have received warnings from the SEC regarding the application of revenue recognition rules. The accounting numbers (quarterly income and earnings per share) used by Roxas (2011) relate to two years before and two years after the SEC's identification of the manipulations. The results of Roxas (2011) show that there is no direct relationship between firms designated as manipulators by the SEC: there are many of these firms whose distribution of numbers does not necessarily correspond to the BL, but there are others for which the frequencies are very close to those expected.

Alali & Romero (2013) find that, in general, large firms are more inclined to manipulate financial information than small firms. He *et al.* (2013) draw on observations of American firms in the period 1950-2010 and analyse revenues and net incomes, separating profitable firms from loss companies. Differences between the real frequencies and the BL appear for both indicators, although the magnitude of these differences is greater for the revenues than for the income, for the profitable firms, while for the deficit firms, the opposite is true.

Jordan *et al.* (2014) analyse Canada's situation before and after the 2002 changes in the corporate governance regulation and conclude that this regulatory change is leading to a significant decrease in *cosmetic earnings management* for profitable firms. Geyer and Drechsler (2014) propose to check the correspondence with the BL for a balance sheet item - long-term debt - and find that US firms seem to be manipulating numbers downwards.

Garza-Gomez *et al.* (2015) analyse the net income by business segments, presented by a sample of US firms, and find that the use of the numbers 0 and 9 in the second position moves away from the BL, in the case of profits; for losses, the two-digit frequencies approach the BL. Amiram *et al.* (2015) calculate a score based on normal distributions of BL: FSD (Financial Statement Divergence score) and demonstrate that many of the indicators presented in the financial statements correspond to the BL, but the most likely to manipulations are the indicators of the income statement, while the least manipulated are the numbers presented in cash flow. This analysis by Amiram *et al.* (2015) covers the period 2001-2011 and more than 43,000 observations. They also find that smaller, more recently created, more volatile and growing firms are more prone to manipulation.

Dang & He (2017) calculate the frequency of the emergence of the number 0 in the second position of the revenues and the interim income of certain Chinese listed firms; they identify much more 0 then expected in the second position in the case of profitable firms and significantly less 0 in the same position for firms with losses. In addition, for the Chinese firms analysed by Dang & He (2017), the manipulation seems more important after, than before the transition to IFRS.

For an emerging economy - Jordan - Bader & Saleh (2017) check how the numbers presented respect the distribution of the BL and find that firms present manipulated financial indicators mostly for sales and net profit (in the case profitable firms), without identifying manipulations for firms reporting losses.

Ullman & Watrin (2017) consider that the application of the BL for the reported net income is useful when seeking to identify earnings management.

Kumar *et al.* (2018) retain 5 variables for which the distribution of the digits is analysed: sales, operating income, net income, earnings per share and dividends per share. Verification of the normality of the distribution is done by using a FSD (Financial Statement Deviation) score based on the MAD (Mean Absolute Deviation), and taking into account all the digits from 0 to 9. After the application of these tests, Kumar *et al.* (2018) find that all the variables analysed seem to be manipulated, for firms reporting losses, whereas, for firms reporting profits, similarities between actual frequencies and that of the BL appear only for sales and operating income.

Skousen (2004) warns us that, in principle, the rounding up of figures presented is a practice present in the behaviour of firms only when the profits exceed the costs of these manipulations.

2.2. Earnings management for the Romanian listed companies

The earnings management literature on the Romanian listed companies includes some studies that have applied consecrated methodologies to samples of Romanian firms[iv]. Since, as of 2012, listed firms are required to apply IFRS in their individual financial statements, most studies analyse the situation before and after the transition to IFRS. Brad *et al.* (2014) note that the transition to IFRS has led to a significant improvement in the quality of accounting information published by Romanian listed firms, with respect to the variability of net income, cash flow, and the correlation between accruals and cash flows; Brad *et al.* (2014) conclude that the transition to IFRS has reduced the manipulation of net income in the year of transition (2012), especially for firms audited by Big 4.

Balaciu *et al.* (2015), following a series of interviews with financial auditors, note that they consider that creative accounting practices are common in Romanian firms and that the main beneficiaries of manipulations of results are the managers. Carp (2015) analyses a sample of Romanian listed companies, for the period 2009 – 2013 and finds that these firms have similar behaviours to those of other economic areas, with an intensification of earnings management in the case of leveraged firms and of firms with higher net income, with a downward trend after the application of IFRS. By measuring the quality of the financial presentation by the dimensions of the accruals, Gajevsky (2015) also finds that the transition to IFRS has improved accruals.

Burcă & Mateş (2015) analyse the quality of the financial information provided by Romanian listed firms and note a slight improvement in the quality of the reported net income due to the application of IFRS. At the same conclusion comes Nechita (2015).

Istrate *et al.* (2015) find that the transition to IFRS has reduced discretionary accruals and the presence of earnings management techniques is greater for negative discretionary accruals.

Huian *et al.* (2018) analyse 67 listed Romanian firms, for the period 2006-2015, and conclude that the earnings management is more present in the case of firms that use the indirect method for the presentation of operating cash flow. Ivan (2015) identifies techniques for manipulating cash flow, especially by shifting from one flow category to another.

None of the studies cited in this subsection discuss the distribution of digits in the net income or other financial indicators. The criteria used by the authors in the selection of samples, are slightly different from one study to another, as well as the periods studied.

3. Methodology, date and hypotheses

The entities analysed in our study are the companies listed on the Bucharest Stock Exchange (BSE) during the period 2001-2017. The data are manually extracted from the individual financial statements of these companies - there are few that report consolidated financial statements: less than half. The number of non-financial companies is different from one year to another, but it stabilizes around 70, for the last years (Table 1). At the end of 2017, there were 87 firms listed on the BVB and there was a maximum of 100 firms (including financial companies), along the interval. We eliminated the financial companies, as well as those for which the information was incomplete. For some calculations, the number of firms analysed is even smaller: because of the unavailability of audit reports, for example. In each table presenting the results of our analysis, we will provide the number of observations retained.

We chose to divide the interval into three sub-periods[v]:

- From 2001 to 2005 – IAS sub-period: the standards applied were "harmonized with International Accounting Standards and with European Directives"; in fact, this time interval represents the first contact of Romanian accountants (and other stakeholders, for that matter) with the terminology, vocabulary and philosophy of international standards (IAS, at the time). It must be said that these rules were almost completely new for the Romanian accountants and that their assimilation and their application were not done in an impeccable way - there were many approximations in the application of the rules (Istrate, 2006), many mistakes, which meant that for many companies, the quality of financial presentation was low;
- From 2006 to 2011 – RAS (Romanian accounting standards) sub-period: Romanian firms (including listed companies) applied standards in line with European directives, with some elements taken directly from IAS/IFRS; meanwhile (in 2007), Romania joined the EU, which make mandatory the application of IFRS in the consolidated financial statements of listed companies;
- From 2012 to 2017 - IFRS sub-period: the Romanian authorities have decided that, from 2012, the individual financial statements of all companies listed on the regulated market must comply with IFRS - this time, despite the extremely short period of preparation of the transition, the application of IFRS is made more seriously[vi].

Table 7. **Composition on of the sample**

Year	***Accounting standards***	***Observations***	***Profitable companies***		***Loss companies***[vii]	
			N	***%***	***N***	***%***
2017	IFRS	73	47	64.38	26	35.62
2016	IFRS	74	56	75.68	18	24.32
2015	IFRS	73	54	73.97	19	26,03
2014	IFRS	75	55	73.33	20	26.67
2013	IFRS	76	53	69.74	23	30.26
2012	IFRS	76	53	69.74	23	30.26
2011	NCR	79	59	74.68	20	25.32
2010	NCR	79	56	70.89	23	29.11
2009	NCR	80	61	76.25	19	23.75
2008	NCR	79	64	81.01	15	18.99
2007	NCR	81	71	87.65	10	12.35
2006	NCR	73	64	87.67	9	12.33
2005	IAS	71	62	87.32	9	12.68
2004	IAS	71	63	88.73	8	11.27
2003	IAS	59	53	89.83	6	10.17
2002	IAS	51	44	86.27	7	13.73
2001	IAS	45	37	82.22	8	17.78
Total		***1,215***	***952***	***78.35***	***263***	***21.65***

(Source: Compiled by the author)

The companies in our sample present the financial statements in national currency and we had to transform certain amounts in new currency (RON) - following the 2005 monetary reform. At the same time, we multiplied by thousand the indicators of the firms which present in thousands of lei, in order to rank companies in ascending order of total assets.

The indicators analysed in the studies that mobilize BL are quite diverse. Most often we find the net income, but we also have the income before tax, the operating income, the income before the continued operations, the earnings per share, the earning attributed to ordinary shares (the numerator of the calculation formula of the earnings per share), the comprehensive income. There are also studies that take into account the revenues (Carslaw 1998, He *et al.*, 2013, Bader & Saleh 2017, Dang & He 2017), cash flows (Ullman & Watrin 2017), long-term debts (Geyer & Drechsler 2014). The study analysing the most indicators is that of Archambault & Archambault (2011): sales, gross margin, operating expenses, depreciation, fixed costs, net income, preferential dividends.

In our study, the analysis focuses only on the net income, but we will take into account several other variables: period, size, auditor category, audit opinion, gender of CFO.

In the literature, there are other variables taken into account when analysing the distribution of digits in the net income, in order to identify manipulations: the economic growth of the country, the value relevance of reported published earnings, the cultural characteristics (according to Hofstede), the link between accounting and taxation, the type of accounting standards (distance from IFRS), the protection of shareholders, the industry.

In all cases, we will provide the data for the total number of observations, but also for the profitable firms and for the loss firms.

The frequencies proposed by the BL[viii] for the appearance of first and second digit in the numbers that form non-random series are presented in Table 2. Nigrini (2005) observes that the normal frequency of the second digit depends on the manner in which the first digit is distributed.

Table 8. **Expected frequencies for the first and the second digits of a number, according to BL**

Digit	*Expected frequencies of appearance in first position (%)*	*Expected frequencies of appearance in second position (%)*
0	-	11.97
1	30.10	11.39
2	17.61	10.88
3	12.49	10.43
4	9.69	10.03
5	7.92	9.67
6	6.69	9.34
7	5.80	9.04
8	5.12	8.75
9	4.58	8.50
Total	**100.00**	**100.00**

(Source: Nigrini, 2005)

Nigrini (2005) reminds us of the conditions under which the BL can be correctly applied: the numbers retained must describe similar events, the series of numbers must not have integrated minima or maxima, the numbers must not be assigned (such as account lists, personal codes etc.).

To test the compliance of real frequencies with those provided by the BL, Skousen *et al.* (2004) use the Z-statistical test, as do Dang & He (2017), Van Caneghem (2004), Guan *et al.* (2008), He *et al.* (2013), Jordan *et al.* (2014). Other authors retain several tests: Archambault & Archambault (2011) - chi-square and t-statistic, Carslaw (1988) - z-statistic and chi-square, Bader & Saleh (2017) - z-statistics, MAD test and chi-square test, Nigrini (2005) - chi-square and MAD (*mean absolute deviation*).

In the analysis of the frequency of the digits, the inclusion of a single digit may lead to non-significant results; thus, Skousen *et al.* (2004) retain the differences between real-frequency and the normal frequencies, for groups of two or three digits, by grouping 0 and 1 and 9 and 8 (and even 7), in the second position and also compare the frequencies of digits 4 and 5.

In our study, we will limit ourselves to analysing the frequencies of the digits 0 and 9 in second position, sometimes adding the digit 1 to the digit 0 and the digit 8 to the digit 9. When the differences between the actual distribution and that of the BL seem significant, we will also comment on the digits 4 and 5.

Given that the main results presented in the literature indicate, in general, the appearance of possible manipulations in the direction of the rounding up of reported net income (more 0 and less 9 in second position profits and less 0 and more 9 in second position for losses), we will propose hypothesis 1:

H1a: The digit 0 (alone or grouped with the digit 1) appears in second position of the net income of the Romanian listed companies more frequently than the distribution according to the BL and the digit 9 (alone or with the digit 8) appears less frequently than Benford's law suggests, in the case of firms declaring a profit. For loss firms, digits 0 and 1 are less frequent and the digits 9 and 8 more frequent than in BL.

H2b: The evolution of Romanian accounting standards, and in particular the transition to IFRS, leads to a decrease in time of the differences between the real frequencies and the BL frequencies of the digits in the numbers reflecting the net income.

The size of firms (total assets, sales, market capitalization) are important in the assessment of performance and earnings management. Jordan *et al.* (2008) believe that dimensions are an important discriminating factor in the analysis of the manipulation of financial indicators. Kinnunen & Koskela (2003) introduce this variable into the analysis of net income digits. Alali & Romero (2013) classify firms by total assets. We will apply the same criterion, by separating small firms (below the median of total assets) from large firms (whose assets exceed the median).

H2: In the case of larger firms, the net income is less manipulated than in the case of the smaller firms, which translates, for large firms, into smaller differences between the real frequencies and the BL frequencies of the digits in the net income.

In identifying potential manipulations of the earnings, an independent variable used often is the auditor category: Big N vs non-Big N[ix]. Van Caneghem (2004) takes this variable into account (i.e. separates the firms audited by Big Ns from the others) and finds that in both cases, the digits 0 and 9 in the second position are over-, respectively, under-represented, with, nevertheless, less important differences in the case of firms audited by Big N. In turn, Alali & Romero (2013) find, by analysing the real frequencies compared to those of the BL, that a decline in the quality of the financial presentation is observed especially in the case of firms audited by non-Big N, which do not have well integrated audit requirements. We propose to verify the influence of the Big N/non-Big N auditors to the differences between the real and expected frequencies.

H3: Companies audited by Big N exhibit less variation than the others between the actual distribution and the BL distributions of digits 0 and 1, respectively, 9 and 8, in the second position of the net income.

The literature finds that women and men who are CFOs in listed firms have different behaviours with regard to possible manipulation of earnings. Peni & Vähämaa (2010) find that firms whose chief financial officer is a woman have discretionary accruals that reduce earnings, which means that they choose more conservative accounting rules. Barua *et al.* (2010) propose similar findings: firms whose CFO is a woman have fewer discretionary accruals, in a context where the number of women entering the accounting profession is increasing. Taking into account these results and the fact that, in Romanian accounting, women are very numerous (Del Baldo *et al.*, 2019), we formulate the following hypothesis.

H4: Firms with a female CFO have lower differences between actual frequencies and the BL for the second digit of the net income.

4. Results and discussions

In the following tables, we will present the differences between the real frequencies and the expected frequencies proposed by the BL. We applied the Z-test and these differences only appear significant in a limited number of cases. We will still present and comment them, like Jordan *et al.* (2008).

4.1. Differences real vs. expected frequencies of the digits in the net income, by sub-period

In Table 3, we present the results of the differences between the real frequencies and the expected BL frequencies of the digits appearing in the second position of the net income, for the Romanian companies listed on BSE, for the whole interval, and for each sub-period we proposed. Our expectations, based on the results proposed by the literature so far, in the sense of more 0 and less 9 in second position are not confirmed, when we analyse the entire interval. On the contrary, the 0 appears less often (-0.12%) and the 9 more often (0.31%), with very small differences, which would suggest that there are not too much upward manipulations. Even taking into account the numbers 1 and 8, respectively (for which the frequencies are in the direction of our expectations), the differences remain insignificant. To find differences that partially confirm our expectations, we must go to digits 4 (-1.22%) and 5 (+ 0.86%), whose frequencies may suggest an upward manipulation of the income. For profitable firms, there are less 9 and 8 and less 0, offset by more 1. There too, we are far enough to detect significant differences in the sense of our hypothesis H1a. In the case of loss firms, we expect less 0 and more 9: in the case of 0, this is not the case, but the possible manipulation can be observed when taking into account the digit 1: the compensation between the two-digit specific deviations shows a tendency towards the rounding upward net income. On the other hand, the digit 9 appears much more often than the normal situation and, even if the difference of its frequency is strongly compensated by less 8, the general tendency remains towards an upward manipulation. In the case of digits 4 and 5, their frequencies for loss firms did not suggest an increase in the net income.

Table 9. **Differences between actual BL frequencies for the appearance of the digits in the second position of the net income, by sub-period**

The digit	0	1	2	3	4	5	6	7	8	9	**σ**
BL Frequency (%)	11.97	11.39	10.88	10.43	10.03	9.67	9.34	9.04	8.75	8.50	
Panel 1: Differences real frequencies - BL expected frequencies, for the entire period analysed (2001-2017)											
Total observations (N = 1,215)	-0.12	0.05	-0.92	0.35	-1.22	0.86	0.29	1.33	-0.93	0.31	**0.78**
Profitable firms (N = 952)	-0.84	1.00	-0.80	0.18	-1.00	0.41	0.43	1.78	-0.56	-0.62	**0.87**

Loss firms (N = 263)	2.48	-3.41	-1.37	0.98	-2.05	2.50	-0.21	-0.29	-2.29	3.67	**2.23**
Panel 2: Differences real frequencies - BL expected frequencies, for the IAS sub-period (2001-2005)											
Total observations (N = 297)	-2.21	-1.29	-2.46	2.36	-2.96	0.77	0.76	2.74	0.00	2.27	**2.02**
Profitable firms (N = 259)	-3.09	-0.97	-1.61	2.70	-2.31	1.14	-1.23	2.93	0.90	1.54	**2.01**
Loss firms (N = 38)	3.82	-3.50	-8.25	0.10	-7.40	-1.78	14.34	1.49	-6.12	7.29	**6.72**
Panel 3 - Real Frequency Difference - BL Frequencies, for the SAR Period (2006-2011)											
Total observations (N = 471)	1.41	-0.35	-0.26	-0.45	-0.90	0.73	-0.85	1.36	-0.68	-0.01	**0.82**
Profitable firms (N = 375)	0.56	0.08	-1.28	-0.83	-0.70	1.26	-0.01	1.36	-0.75	0.30	**0.85**
Loss firms (N = 96)	4.70	-2.02	3.70	1.03	-1.70	-1.34	-4.13	1.38	-0.42	-1.21	**2.57**
Panel 4 - Real Frequency Difference - BL Frequencies for the IFRS Period (2012-2017)											
Total observations (N = 447)	-0.34	1.36	-0.59	-0.14	-0.41	1.07	1.17	0.36	-1.81	-0.67	**0.94**
Profitable firms (N = 318)	-0.65	3.70	0.44	-0.68	-0.28	-1.18	2.30	1.34	-1.52	-3.47	**1.94**
Loss firms (129)	0.43	-4.41	-3,13	1.20	-0.73	6.61	-1.59	-2.06	-2.55	6.23	**3.57**

(*Source*: Compiled by the author)

When analysing **the first sub-period (IAS) – 2001-2005 –** there are significant differences for almost all the digits and the sense of the deviations suggests rather an orientation towards the downward manipulation of the income (less 0, 1 and 2 and more 9). It is only at the level of digits 4 and 5 that our hypothesis seems confirmed (less 4, more 5). The situation is almost identical for profitable firms, with larger differences. This trend can be explained by the fact that the application of IAS was at the beginning and was done in a rather approximate way. Another explanation is that, at the time, the *de facto* connection between accounting and taxation was very strong (and with a high rate of income tax), which meant that companies preferred lowering the income in order to pay less tax. An alternative explanation for this trend towards diminishing the income is provided by Jiang *et al.* (2018), which shows that Chinese firms are encouraged to report smaller incomes in order to obtain public subsidies more easily. We do not have the necessary data to test such a hypothesis for the Romanian firms analysed, but we found that for many companies listed on the BSE, the State was an important shareholder. In the case of loss firms, more 9 seem to suggest upward rounding of the income (reduction of the losses), but this is not confirmed by less 0. There too, the following digit (1) must be taken into account to identify a certain trend towards the reduction of losses.

The second sub-period (RAS: 2006-2011) shows that, for profitable firms and for the total sample, the hypothesis of upward manipulation of the net income is only partially confirmed, but in a larger measure than in the previous sub-period: the distribution of the digits 0 (+0.56) and 9 (-0.01) is not likely to make us believe in too much manipulation; even adding the frequencies of the digits 1 and 8, we remain pretty much in the same pattern. It is always the distributions of the digits 4 and 5 that support our hypothesis. Loss firms have contrasting frequencies that seem to mark downward adjustments (more 0, less 9 and 8).

Many studies find that the transition to IFRS has resulted in a better quality of the financial presentation, even if there is evidence to the contrary - an extensive literature review to this end provides us with De George & Shivakumar (2016). In our study, we expected, first, a closer results comparing with others studies, and, secondly, fewer differences between the real frequencies and the BL ones. In fact, there is significantly less 9 (and 8) and, also, less 0, for profitable firms and for the total. For our hypothesis to be partially confirmed, we must take into account the frequency of the digit 1 (+3.70, respectively, +1.36), which largely offsets the differences of the digit 0. Thus, the transition to IFRS seems to lead not to less manipulation, but to more upward manipulations of the income, such as is found in mature financial markets. The same thing is seen for the loss firms: much less 1 (-4.41) which largely compensates the more 0 (+0.43) and more 9 - it seems, here too, that the rounding of the net income is upward. Regarding the dimensions of the possible manipulations (upwards or downwards), we presented, in the last column of Table 3, the standard deviation of the differences between the real distributions and BL distributions: these standard deviations are very important for the IAS sub-period (2001-2005), they decrease significantly during the second sub-period (RAS: 2006-2011), to become more important in the IFRS sub-period. Thus, our H1b hypothesis is only partially confirmed: there has been a decrease in differences, but the IFRS period shows more gaps than the previous period.

4.2. Differences real vs. expected frequencies of the digits in the net income, according to the companies' size

In comparing the actual frequencies of the digits in the net income of the Romanian listed companies with the BL distribution, we did not continue with the three sub-periods proposed in the previous sub-sections, because that would have led to a very small number of observations for certain intervals. The separation of small firms vs. large firms was done according to the total assets: firms with assets below the median are called small firms the first category, the others (assets > median) fall into the second category: big companies. In Table 4, the differences for the total sample are the same as in Table 3, since the number of total observations and the period remain the same. For small firms, the sense of the differences between the real and expected frequencies is the same as for the whole sample, even if they are more significant: less 0 and more 9, partly compensated by more 1 and more 8. The upward manipulation is not confirmed for these companies, except in the case of digits 4 and 5, whose frequencies clearly indicate possible upward manipulations. For firms reporting profits, any upward manipulations seem not to concern the number 0 (-2.60, that is to say a possible reduction of the income), but the numbers 9 and 8, whose frequencies suggest rounding upwards and, again, the numbers 4 (-1.91) and 5 (+2.21). For loss-making firms, more 0 and even more 9, much less 4 and more 5 do not allow us to identify a coherent sense of possible manipulation.

Table 10. **Differences between real frequencies and BL frequencies for the appearance of the digits in the second position of the net income, according to the size of the firms**

The digit	0	1	2	3	4	5	6	7	8	9	σ

BL Frequencies	11.97	11.39	10.88	10.43	10.03	9.67	9.34	9.04	8.75	8.50	
Panel 1 - Differences Real frequency - BL frequencies, for total period analysed (2001-2017)											
Total observations (N = 1,215)	-0.12	0.05	-0.92	0.35	-1.22	0.86	0.29	1.33	-0.93	0.31	**0.78**
Profitable companies (N = 952)	-0.84	1.00	-0.80	0.18	-1.00	0.41	0.43	1.78	-0.56	-0.62	**0.87**
Loss firms (N = 263)	2.48	-3.41	-1.37	0.98	-2.05	2.50	-0.21	-0.29	-2.29	3.67	**2.23**
Panel 2 - Differences Real frequency - BL frequencies, for Small Firms (below median)											
Total observations (N = 608)	-1.28	0.29	-0.02	-0.40	-2.96	2.01	1.35	0.83	-1.18	1.37	**1.43**
Profitable firms (N = 480)	-2.60	0.28	0.16	0.20	-1.91	2.21	1.49	1.79	-1.25	-0.38	**1.50**
Loss firms (N = 128)	3.66	0.33	-0.72	-2.62	-6.91	1.27	0.82	-2.79	-0.94	7.91	**3.77**
Panel 3 - Differences Real frequency - BL frequencies, for large firms (above the median)											
Total observations (N = 607)	1.04	-0.19	-1.82	1.10	0.51	-0.28	-0.77	1.83	-0.68	-0.76	**1.05**
Profitable firms (N = 472)	0.95	1.75	-1.77	0.16	-0.07	-1.41	-0.65	1.77	0.15	-0.87	**1.16**
Loss firms (N = 135)	1.36	-6.95	-1.99	4.38	2.56	3.66	-1.19	2.07	-3.56	-0.35	**3.34**

Profitable firms above the median seem to follow the pattern of upward manipulation of the net income: more 0 and 1 and less 9, although for the latter figure the difference is small and diminished further by the positive difference of the digit 8. The frequencies of the digits 4 and 5 allow us to say that the rounding up through these figures is rather made by small companies. Large and deficit firms have less 8 and 9 - a sign of downward manipulation, confirmed by more 0, but overruled by much less 1: there too, the possible manipulation by loss-making firms is far from the predictions we made in the hypothesis H2. The differences for large firms (especially for profitable ones), calculated by taking into account the first two and the last two digits, are different from the differences calculated for the smaller ones, less by the amplitude than by the sign of these deviations which goes in the direction of an upward manipulation. By analysing the standard deviations calculated for the two categories of firms, we find, in fact, fewer possible manipulations for large firms.

4.3. Differences real vs. expected frequencies of the digits in the net income, according to the auditor category

The available observations with the net income are 1,215. We identified the auditor for only 1,147 observations (Table 5), including 328 of Big N (28.6%) and 819 of non-Big N (71.4%). The second panel in Table 5 shows that companies audited by Big Ns have less 0 in the second position of net income. Even if the 9 are less numerous too, the upward manipulation does not seem to be confirmed. In fact, we can say that firms audited by Big N are more prudent. Unlike the previous results, the frequencies of digits 4 and 5 no longer suggest significant upward rounding. Profitable firms audited by Big N - being more numerous (72.3%) show even more clear that there are few upward manipulations, even if there are many less 9, but for more 3 and not 0 and 1. Loss firms audited by Big N declare much less 0 and 1, for more 9 - this is a clear sign of upward manipulation, confirmed by the distributions of digits 4 and 5.

In the case of profitable firms audited by non-Big N, the orientation toward upward manipulations seem quite visible, even if we must take into account the 1 next to 0. The pattern of the distribution of frequencies is upward for both 0 and 1, 9 and 8, and 4 and 5. For deficit firms, the frequencies are quite irregular (much more irregular than for loss-making firms audited by Big N) and does not allow us to draw a clear conclusion about the meaning of possible manipulation.

These results confirm our hypothesis H3: firms audited by non-Big N (especially those with positive net income) seem to manipulate upward more than firms audited by Big N, so the presence of a Big N limit the earnings management, except for loss-making firms. On the other hand, the range of deviations for companies audited by big N is greater than for other firms.

Table 11. **Differences between real frequencies and BL frequencies for the appearance of the digits in the second position of the net income, according to the auditor category**

The digit	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**σ**
BL Frequencies	11.97	11.39	10.88	10.43	10.03	9.67	9.34	9.04	8.75	8.50	
Panel 1 - Differences Real frequency - BL frequencies, for total observations containing the identity of the auditor											
Total observations (N = 1,147)	0.15	0.03	-0.51	0.21	-1.05	0.53	0.34	1.33	-0.90	-0.13	**0.67**
Profitable firms (N = 895)	-0.57	1.01	-0.37	-0.04	-0.87	0.16	0.72	1.69	-0.59	-1.13	**0.85**
Loss firms (N = 252)	2.71	-3.45	-0.96	1.08	-1.70	1.84	-1.01	0.09	-2.00	3.40	**2.10**
Panel 2 - Real Frequency Difference - BL Frequencies ; Big N listener											
Total observations (N= 328)	-1.91	-2.24	0.10	2.98	0.03	0.39	0.42	0.72	0.09	-0.57	**1.37**
Profitable firms (N = 237)	-2.27	0.42	1.36	2.65	0.52	-0.81	0.36	-0.18	0.11	-2.17	**1.41**
Loss-making firms (N = 91)	-0.98	-9.19	-3.19	3.86	-1.24	3.52	0.55	3.05	0.04	3.59	**3.83**
Panel 3 - Real Frequency Difference - BL Frequencies ; non-Big N listener											
Total observations (N= 819)	0.97	0.94	-0.75	-0.91	-1.48	0.59	0.31	1.58	-1.30	0.05	**1.00**
Profitable firms (N = 658)	0.04	1.22	-1.00	-1.01	-1.37	0.51	0.84	2.36	-0.85	-0.75	**1.15**
Loss-making firms (N = 161)	4.80	-0.21	0.30	-0.49	-1.96	0.89	-1.89	-1.59	-3.16	3.30	**2.35**

The observations available with a complete audit report (which contains the audit opinion) are even fewer (Table 6): 1,133, of which 751 with an unmodified opinion (66.3%) and 382 with a modified opinion (most often a qualified opinion, but there are also some contrary opinions and even the disclaimer of opinion).

The net income presented by the firms receiving an unmodified opinion seem slightly manipulated upward, taking into account the pairs of digits 0 and 1, 9 and 8 and 4 and 5. On the other hand, the loss-making firms with a clean opinion seem to manipulate downward: more 0 and 1, less 9 and 8, less 4 and more 5. This behaviour may seem a bit odd, but it is in the direction of *big bath accounting*: in times of loss we are trying to make this loss heavier, in order to cover all kinds of future risks, more or less probable, and to show profits in a following year.

Table 12. **Differences between real frequencies and BL frequencies for the appearance of the digits in the second position of the net income, according to the type of the auditor's opinion**

The digit	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	
BL Frequencies	11.97	11.39	10.88	10.43	10.03	9.67	9.34	9.04	8.75	8.50	**σ**
Panel 1 - Differences Real frequency - BL frequencies, for total observations containing an audit opinion											
Total observations (N = 1,133)	0.21	0.17	-0.47	0.25	-1.12	0.48	0.28	1.29	-1.07	-0.03	**0.69**
Profitable firms (N = 881)	-0.51	1.21	-0.32	0.01	-0.95	0.09	0.65	1.63	-0.80	-1.01	**0.86**
Loss firms (N = 252)	2.71	-3.45	-0.96	1.08	-1.70	1.84	-1.01	0.09	-2.00	3.40	**2.10**
Panel 2 - Real Frequency Difference - BL Frequencies, for the observations containing a modified audit opinion											
Total observations (N = 382)	1.64	-2.23	0.64	-1.01	-1.13	0.02	0.87	2.48	-2.47	1.19	**1.57**
Profitable firms (N = 251)	0.38	0.56	1.07	-0.47	-0.47	-1.30	1.82	2.51	-2.38	-1.73	**1.48**
Loss-making firms (N = 131)	4.06	-7.57	-0.19	-2.03	-2.40	2.54	-0.94	2.41	-2.64	6.77	**3.87**
Panel 3 - Real Frequency Difference - BL Frequencies, for the observations containing an unmodified audit opinion											
Total observations (N = 751)	-0.52	1.39	-1.03	0.89	-1.11	0.72	-0.02	0.68	-0.36	-0.64	**0.81**
Profitable firms (N = 630)	-0.86	1.47	-0.88	0.20	-1.14	0.65	0.18	1.28	-0.18	-0.72	**0.87**
Loss-making firms (N = 121)	1.25	1.01	-1.79	4.45	-0.94	1.07	-1.08	-2.43	-1.31	-0.24	**1.91**

Profitable firms that have received modified opinions have frequencies of the digits in the second position of the net income which shows a certain tendency towards upward manipulation: more 0 and 1 and less 9 and 8; in the middle of the interval, there are less 4, but also less 5, which does not confirm the upward manipulation. The loss-making firms with a modified opinion reveal significant differences between the real frequencies and BL ones, but these differences are not systematically in the direction of a clear upwards or downwards manipulation. At the limit, by grouping 0 and 1, on one side, and 9 and 8 on the other, we could detect a certain orientation towards the increase of the income, which is not confirmed by the digits 4 and 5.

The standard deviations calculated for the two categories of opinion are significantly lower in the case of firms receiving unmodified opinions, which suggests a better quality of the income presented by these firms.

4.4. Differences real vs. expected frequencies of the digits in the net income, according to the CFO gender

We identified the CFO's gender for 1,134 observations (Table 7): there are 627 women (55.3%) and 507 men (44.7%).

Table 13. **Differences between real frequencies and BL frequencies for the appearance of the digits in the second position of the net income, according to the CFO gender**

The digit	0	1	2	3	4	5	6	7	8	9	σ
BL Frequencies	11.97	11.39	10.88	10.43	10.03	9.67	9.34	9.04	8.75	8.50	
Panel 1 - Differences Real frequency - BL frequencies, for all the observations with an available information about the CFO gender											
Total observations (N = 1,134)	0.11	0.07	-0.2 1	-0.02	-1.12	0.56	0.18	1.45	-0.81	-0.21	**0.67**
Profitable firms (N = 891)	-0.75	0.96	-0.11	-0.22	-1.05	0.32	0.76	1.73	-0.56	-1.09	**0.88**
Loss-making firms (N = 243)	3.26	-3.16	-0.59	0.68	-1.39	1.44	-1.93	0.43	-1.75	3.02	**2.04**
Panel 2 - Differences Real frequency - BL frequencies, for the observations with a male CFO											
Total observations (N = 507)	-0.92	-0.15	-0.62	0.81	-1.35	-0.60	0.13	2.20	0.72	-0.22	**0.98**
Profitable firms (N = 403)	-1.80	1.27	-0.46	0.74	-0.85	-1.48	0.34	2.62	0.93	-1.30	**1.34**
Loss-making firms (N = 507)	2.45	-5.62	-1.26	1.11	-3.30	2.83	-0.69	0.58	-0.10	4.00	**2.76**
Panel 3 - Differences Real frequency - BL frequencies, for the observations with a female CFO											
Total observations (N = 627)	0.95	0.25	0.12	-0.70	-0.94	1.49	0.23	0.85	-2.05	-0.21	**0.98**
Profitable firms (n = 488)	0.12	0.70	0.19	-1.00	-1.22	1.81	1.11	1.00	-1.78	-0.92	**1.12**
Loss-making firms (N = 139)	3.86	-1.32	-0.09	0.36	0.04	0.40	-2.87	0.31	-2.99	2.29	**1.99**

For profitable firms, the frequencies of the appearance of the digits 0 and 1, on one side, and 9 and 8, on the other, show us that women seem less prudent than men: even if the positive difference for the digit 0 is very small, the 9 and 8 are much less numerous - the explanation is an upwards rounding, confirmed by the differences in digits 4 and 5. For profitable firms whose the chief financial officer is a man, he is difficult to say that the difference would justify an upward adjustment: there are less 0 and they are not offset by the more 1; there are less 9, but almost offset by more 8. In the middle of the interval, less 4 are accompanied by less 5, so handling is not really upward.

For loss-making firms, even if the differences are not the same as for profitable firms, they have, for the most part, the same sense and are far from justifying the rounding up.

In terms of standard deviations, the differences seem slightly higher in the case of firms whose chief financial officer is a man.

5. Conclusions, limitations and further research

The research on earnings management uses several techniques for the identification and the measurement of the accounting numbers manipulation. Benford's law establishes that the frequencies of the appearance of digits from 0 to 9 in a number are, in a multitude of cases, fixed. There are so far many studies that mobilize the BL to check whether the distribution of digits in the financial indicators - especially in the net income - corresponds to the expected frequencies proposed by this law. The differences between the specific frequencies at the BL frequencies observed for the listed firms may suggest manipulations of the income. When, in second position of the reported income, there are more 0 and, possibly, 1 and less 9 and, possibly, 8, in the case of profitable firms, it can be concluded that there is an artificial increase in reported net income. In many studies, the authors find such upward manipulations of the income or of other accounting numbers.

To our knowledge, there is, so far, no analysis of the frequency of the digits as they appear in the net income reported by the Romanian listed companies. Thus, our goal is to apply the BL in order to compare the expected frequencies that it proposes to the real frequencies of the occurrence of digits in second position of the net income for more than 1,200 observations - non-financial companies listed on the BSE, in the 2001-2017 period. We analysed the individual financial statement. In order to better observe the evolution of Romanian accounting standards and the influence of these changes on the quality of the information reported, we have divided the total period into three sub-periods: 2001-2005 - first attempt to apply the IAS; 2006-2011 - application of Romanian accounting standards in line with European directives; 2012-2017 - application of IFRS. After testing the net income, for the entire period and by sub-period, we checked how some variables influenced the distribution of digits in the net income: the size of the companies, the category of auditor, the audit opinion, and the CFO gender. By following the results already presented in the literature, our hypotheses go in the direction of the identification of upward manipulations of the net income, with an improvement of the differences between real frequencies and BL frequencies, as and when the evolution accounting standards (H1), less manipulation in the case of large firms (H2), better quality of income reported by companies audited by Big N (H3), more prudence of female CFO compared to men who hold the same position.

The hypothesis H1a is not really confirmed: the differences between the real frequencies and the expected frequencies do not seem to suggest systematic upward manipulations. It is only in the case of digits 4 (with fewer appearances) and 5 (with more appearances) that our hypothesis could be considered valid. The evolution of the accounting standards shows us that, indeed, during the first period, the differences between the two frequencies are important, but rather suggesting a tendency towards the decrease of the income. During the second period, the evolution of accounting standards and the improvement of the application of these standards, accompanied by a certain accounting-tax disconnection led to less significant differences between the real frequencies and BL ones, more stability in these deviations and an orientation towards possible upward manipulations of the income. Differences greater than during the second period (although lower than those of the first period) are found for the IFRS interval, with an orientation towards the rounding up of incomes.

By analysing small firms, we find that the upward manipulation is not confirmed for these companies, except in the case of digits 4 and 5. On the contrary, for large firms, the sense of the differences suggests possible upward adjustments, in the case of profitable firms, while for deficit-making firms, the differences appear irregular and rather inconsistent. Thus, hypothesis H2 is not confirmed.

Companies audited by Big N have the reputation of providing less manipulated information. Indeed, the difference between the real frequencies and the expected BL frequencies for these firms show that they seem more prudent, with more significant signs of upward manipulation for loss-making firms. Our results confirm our hypothesis H3: firms audited by non-Big Ns (especially profitable ones) seems to manipulate upward the net income more than firms audited by Big N. By retaining the variable audit opinion, in the case of unmodified opinions, the manipulations seem slightly on upward, except for loss-making firms. Profitable firms that have received modified opinions also point to larger upward adjustments, while for loss-making firms there are manipulations, but their direction does not seem very clear.

Our hypothesis H4 is not confirmed: the net income of firms who's the financial director is a woman seem less prudent, more upward manipulated than the results reported by firms whose financial director is a man.

The limits of our study include the limited number of observations taken into account, the fact that we have not mobilized powerful statistical instruments to determine the significance of the differences calculated and the fact that we have analysed only one indicator - the net income. All these limits represent so many fields for future research.

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[iv] Thus, the measurement of the quality of financial information is carried out using techniques such:
- the variability of net income in relation to the variability of total assets or the change in cash flow, the comparison of flows with the accruals (Brad et al., 2014, Nechita, 2015);
- the Jones' model of identifying discretionary accruals, complemented by the Dechow model (Carp, 2015);
- the Dechow model and the Kothari model (Gajevsky 2015);
- the Dechow and Dechow & Dichev models (Istrate et al., 2015);
- the Callao model (Huian et al., 2018);
- modified Jones models, Dechow, Kothari & Jones, Ball & Shivakumar (Burcă & Mateş 2015).

[v] There are other studies that analyze sub-periods (Alali & Romero 2013, Dang & He 2017), the transition from one sub-period to another being marked by an important event such as the transition to IFRS (voluntary or mandatory), the application of the stricter financial supervision rules (SOX and/or its equivalents).

[vi] For the periodization of the evolutions in the Romanian accounting and financial reporting systems, we rely to Ionaşcu et al. (2014), Albu et al. (2012) and Istrate (2011).

[vii] Kinnunen & Koskela (2003) found 73.8% profitable firms and 26.2% loss firms, with the largest proportion of firms with losses in the USA (34%) and the least important in Finland (8.2%)

[viii] Ullman & Watrin (2017) agree that this is not a natural law, but rather regularly observed frequencies.

[ix] At the present time, there are only four Big N, but in the first year of the selected interval (2001) , there were audit reports signed by auditors belonging to the firm Arthur Andersen.

Measuring the level of accounting conservatism in financial reports and its impact on the market value of banks that are not applying IFRS

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Abstract: *The topic of the accounting conservatism, it becomes the accounting headings that have been and still are controversial among the accounting researchers. There have been many studies to measure the levels of accounting conservatism and its relation to accounting concepts such as quality of profits, quality of accoutring information, corporate governance and the value of bank shares. The aim of this research is to measure the level of the accounting conservatism and its relation to the market value of the bank, in a sample of the Iraqi joint stock banks listed in the Iraqi stock market, by using the Beaver & Ryan: 2000 model, a model that measures the ratio of book value to market value of shares and then compares them to market values of shares measured, at fair value that can be expressed at market value equal to the closing price at the end of the financial year. The study reached a number of conclusions, the most important of which is, the fluctuation in accounting conservation levels in the research sample banks. In a financial year there is a decrease in the level of the accounting conservatism, which is accompanied by a decrease in market value. In the following year, the bank itself is characterized by high conservatism policies. Determine the level of accounting conservatism in Iraqi joint stock companies registered in the Iraq Stock Exchange. It also helps the makers of accounting standards those who is responsible for Iraqi joint stock companies to know the level of accounting conservatism practiced by these companies and the degree of change over time. The effect of the accounting conservatism on the quality of the financial statements, and the reflection on the utility and adequacy of the accounting information, for the financial reports had to be published The researcher believes that the reason for the fluctuation is due to the difference in the basis of accounting measurement as well as, ignorance in the application of amendments to the rules or accounting standards, and accounting methods by the banks sample research. In addition, the study concluded with a number of recommendations, the most important of which is the management of the Iraq Stock Exchange to oblige listed banks to disclose the accounting policies used in the annual financial statements, explaining the justification for using these policies and explaining their implications for the outcome of the banks activity and financial position, and the obligation of utilizing IFRS.*

Keywords: *Accounting conservatism; Iraq stock exchange; Iraqi banks.*

1. Introduction

Recently, the interest on accounting has increased due to the financial crises that had been happened at the international financial markets because of the process of taken by the corporate departments, including the management of profits on the hand, and the

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attachment of the conservatism to accounting disclosure and its impact on the adequacy of accounting information on the other hand, In the financial markets and increased trading in stocks, which indicated the need to provide information with a reasonable degree of reliability. Another reason for concern about it is accounting conservancy is the large controversy among accountants about the use of fair value in valuation of assets, property and equipment. Recently, the interest has been focus on the relationship between accounting and market value and corporate profits. This interest has been demonstrated by the spread of research examining the relationship between the profits and returns of shares and accounting practices in many countries around the world. Accounting is reflected in several forms within the framework of accepted accounting principles. Many researchers believe that the policies of accounting are restraint limit the management of profits and other processes by corporate departments, which is turn to affect the market value of shares and reflected on the value of the bank in the market. On the other hand, other researchers believe that accounting policies of in the banks will increase the efficiency of financial markets and increase confidence among users of financial reports from investors and lenders, which reflect positively on the market indicators. This study aims to understand the grade of accounting policies which used by banks participating in the Iraqi market, for securities and then study the impact of the relationship of these policies on the market value of the banks sample research. In order to achieve the objectives, a theoretical part was divided into two aspects, which deals with the concept and significance of the accounting conservatism and the most important criteria used to determine the accounting levels, as well as, the concept in all its aspects, explaining the concept of book value and market value as well as fair value. The second aspect was devoted to the practical application of the research sample through the selection of a group of banks are not applying IFRS and listed at the Iraq Stock Exchange. The researchers believe also that the biggest cause of the accounting fluctuation is the different measurement at accounting rules, and being far from applying IFRS.

2. Literature review

2.1. Concept of accounting conservatism

In some cases, in practice, it was acceptable to protest wisdom or conservatism as a justification for accounting treatment under condition. Wisdom or conservancy means when in doubt, this is because wisdom or conservatism may lead to bias in the financial situation and financial performance reported. In fact, impairment of assets (or overstatement of liabilities) in one period often leads to overstatement in subsequent periods and cannot be described as prudent. Accordingly, the conceptual framework does not include wisdom or conservatism as desirable attributes of financial reporting information (Kieso *et al.*, 2017: 45).

Accounting conservatism as a simple says is, to take an action against the possibility of a decline in the book value of assets over market value in the long run, in other words, taking into account the losses expected without taking the same interest into the expected profits (Abdulmalik, 2013: 214), we noted that there is no agreement on a uniform definition of the conservatism. Basu (1997) defined it as the difference in timing to show the effect of positive and non-positive items in the accounting profit published to reflect the effect of all financial statements in terms of recognizing the effect of non-positive paragraphs faster than positive news (Nagar; 2014: 182), The accounting conservatism is defined as the continuous decline in the carrying amount of assets over the market value, from time to time , also known as a policy of trade-offs ,between accounting principles that leads to the selection of accounting methods and manners are reflected in the reduction of cumulative profits. At the expenditures its recognition, and delayed of revenues (Beawer & Ryan, 2005: 273). Rebecca (2015), emphasized that consideration should be given to the fact that the purpose of accounting for a conservatism is to choose the method, method or estimate, such as showing assets at a lower than normal cost and during inflationary conditions, choosing the method (LIFO) instead of the method (FIFO) when determining the stock. Similarly, the cost or market is applied whichever is less when evaluating the last stock at the end of the period, (Rebecca, *et al.*, 2015: 24). In general, there are two types of conservatism: the unconditional conservatism, which is not related to a specific situation or economic event, examples of this type of conservatism are the reduction of the net asset value or the disclosure of the carrying amount of the property rights. The second type of accounting conservatism is the conditional conservatism, which is related to the occurrence of certain events, and leads to recognition of economic losses early (Nagar; 2014: 183).

2.2. Reasons for accounting conservatism

There are many reasons and factors that push accountants or financial departments of financial banks to follow the policies of accounting conservatism, and this is confirmed by many studies, Hayan (1995) believes that the size of the bank is the first factor or the main motive as large banks are exposed to a lot of political pressure, Therefore, banks tend to accounting conservatism in order to avoid being exposed to political costs. In contrast, (Hayan) argues that smaller firms are more likely to face problems than large-scale firms. Small banks are the most conservative firms, so they expect lawsuits (Hayan; 1995:135).

Watts (2003) identified four factors or motivations that led accountants to resort to accounting conservatism:

1. Engagements;
2. Lawsuits;
3. Taxes;
4. Professional organizations.

The results of the Watts (2003) study confirm that two factors that have a strong impact on the accounting conservatism are engagements and lawsuits, also have found that these two factors, taxes and professional organizations have little effect on the accounting conservatism (Watts; 2003: 212). On the other hand, Ramaling and Yong (2011) believe that the indebtedness affects the accounting conservatism. If this percentage is high in a bank, the management of the bank is away from the practice of the accounting conservatism accounting conservatism in order not to affect the negative reflected in the recognition of early losses, which is lead decline in profits and reduction of values Assets, which in turn leads to a possible breach in the debt contract (Ramaling and Yong, 2011: 231). Other factors that influence accounting conservatism are corporate governance, is The relationship between corporate governance and accounting which is direct relation, the higher the mechanism of corporate governance, the greater the level of accounting conservatism.

2.3. Measures of accounting conservatism

There are many measures used to measure the accounting conservatism, which is appear chronologically one of the model is called Basu (1997) was issued in 1997, or (the relationship between earnings and returns). This model has been used by many researchers around the world, the fact that the accountants tend to recognize unrealized losses. The second model is the measure of book value (accounting value) to market value it called (Beaver and Ryan, 2000: 132), which will be used in this paper. And the model of retention money in which the conservatism is measured by the basis of maturity at the cash flow due to the negative cash flows (Sultan, 2013: 15). Index of the conservatism (Score-C) also it called the Zhang & Penman Scale. This measure works by finding the effect of an accounting conservatism on the balance sheet by applying the following equation (the ratio of retention money undeclared to net operating assets), and showing the increase in undisclosed conservatism at a higher rate than net assets That the bank uses accounting policies when disclosing the value of its assets. Therefore, the increase in the index (Score-C) it means increase the level of the conservatism (Yassin, 2008: 34).

2.4. Reduction measure the book value to the market value (Beaver and Ryan, 2000)

Beaver and Ryan (2000: 132) measured the conservatism using the banks book value (accounting value) model to market value, assuming the rest of the factors remain constant, which are the banks that use the conservatism accounting report by showing a decrease in net assets and a decrease in the book value of the banks shares relative to the market value of these shares. In this model, the aggregate time series and the cross-sectional data, which show the book value to market value ratios, are used on a single year and on the basis of the persistence of the variables and on the banks individual returns for the current and previous five years. Coefficient uses the banks data separately to show the constant difference between the book value and the market value of shares, the lower the "bias" power factor, the net asset value of the asset is biased and more conservative for the bank because the average coefficient is zero, the coefficient estimates relative conservatism rather than total homogeneity, which is used to estimate the range of conservatism which is differs between banks (Beaver and Ryan, 2000: 132). The reduction in the book value of the bank, against its market value, which in effect means the devaluation of the all bank, which is the basis of the essence of the conservatism called for by the accounting theory. This measure is easy to apply because the data used in the application are available and the equation of calculation does not need complex statistical methods.

2.5. Types of conservatism accounting

There are two types of conservatism, first one is the conditional conservatism, which depends on predicting and hedging certain events prior to their occurrence. Examples of this are the cost or net realizable value policy has been in IAS2 Inventories, and the net realizable value of the estimated selling price in the ordinary course of business Less the estimated costs of completion and the estimated costs necessary to complete the sale, the cost of the inventory may be non-refundable if the inventory is impaired, obsolete or if the selling price is low, and the cost of inventory may be non-refundable if the estimated costs of completion or Target for the implementation of the sales costs.

Impairment of inventories to net value realizable that is lower than costs, which is consistent with the existing view that assets are not shown at a higher value than the expected value of their sale or use. it may be recognized the contingent liabilities or contingent liabilities, as a result of sales contracts if they cover a part of the cost of the retained inventory or purchase contracts, which are accounted for under IAS 37 Provisions, contingent liabilities and contingent assets. The process of reducing the value of inventory to net realizable value is based on taking each component individually, and in some cases adopts the method of aggregation of similar or interrelated elements, in the case of a single production line produces multiple products that are produced and marketed from the same geographical (Abd almalek, 2013: 215). The second type is the unconditional conservatism: the choice of management of accounting methods and policies that result in a reduction in profits and the book value of assets regardless of losses. This is achieved through capitalization (Shahid, Abbes, 2015:137), another example that can be classified as type 2 is the immediate recognition of R & D costs and the adoption of the historical cost principle in valuation of assets, resulting in a decline in the value of net assets.

2.6. Importance of accounting conservatism

The importance of the accounting conservatism is reflected in times of financial crisis in the world economy from time to time, which led many banks to face financial failure and increase the burden of agency costs, which led many managers of these banks to manipulate or affect the real profits by exploiting the private information they have about banks and thus increase the risks of information and agency risks. Therefore, a conservative accounting policy reduces the risk of information and agency risks, especially in periods of financial crisis. (Mitton, 2002: 230).The practical application of accounting policies has a positive impact on the accuracy and transparency of financial reporting in a timely manner and limits management practices to immoral accounting as well as short-term profit management practices, thereby enhancing the sustainability of the business (Watts, 2003: 218).The United States is one of the countries that exercise a high level of conservatism policies, and stressed that the accounting conservatism provides protection to investors and lenders. Another important aspect is that an accounting conservatism has a positive impact on the provision of quality accounting disclosure to meet the needs of the users of the financial statements. The accounting information of the conservatism gives confidence to the users of the financial statements from outside the bank that the published information is of good quality (Najjar, 183: 2014).

The researcher believes that the developments in the business environment and the great competition between banks led to the spread of many immoral accounting practices on the one hand and the profit management practices carried out by corporate departments highlighted the need to adhere to the policies of accounting conservatism to maintain the rights of investors and lenders and to ensure the stability of financial markets.

After considering the concept of accounting conservatism, its motives and types, and the most important criteria used to determine accounting levels, we will discuss in the second part of the theoretical aspect the concept of market value and the relationship of accounting policies with the value of the shares of the bank.

2.7. Concept of the value of the bank

Value is a broad concept. It is not easy to control its aspects and it means value or financial value. The concept of value has two dimensions: the first is the moral dimension which includes considerations of appreciation, respect and integrity, and thus the appreciation of the thing through the determination of the material entitlement, and in fact it is difficult to give quantitative values of the moral dimension, despite the great role of this dimension in building communities because of its connection to concepts cannot be quantified such as justice and ethics. The second dimension is the physical dimension that is associated with the term price, which is a measure of things with the equivalent of cash, or the price represents the amount paid for a particular good or service, and thus the price is material values that can be identified and measured in commercial transactions (Khudair, 2009: 69).

2.8. Value types (relative to shares)

1. Par value: The nominal value is the price that is placed on the share certificate that is issued in the underwriting stage and whether the shares are ordinary shares or excellent shares. The nominal value of shares is often equal to the issue price (the amount paid by the under writer), (Ross, et.al, 2012: 371).

2. Book value: The carrying amount of the shares represents the value of the shares recognized in the banks accounting records. The book value of the share represents the share of the share of the net assets of the bank and as shown in the statement of financial position (net assets are the total assets less all liabilities to others), (Khudair, 2009: 73-75).

Book value = Net assets/Number of shares issued

If the economic unit issues excellent shares alongside the ordinary shares, the book value of the shares is calculated according to the following equation:

Book value of ordinary share = (Net value of the bank - nominal value of preferred shares)/ Number of shares issued

3. Market value: Is the amount that can be obtained from the sale of a financial instrument or payable when a financial instrument is purchased in an active market (Wiley, 2015: 633).

It is important to note that the market value of the shares at any time used will have no effect on the equity holders' share in the bank issuing the shares. Is the amount that can be obtained from the sale of a financial instrument or payable when a financial instrument is purchased in an active market (Wiley, 2015: 633).

It is important to note that the market value of the shares at any time used will have no effect on the equity holders' share in the bank issuing the shares.

The researchers believe that market value is the most important value that might be of interest to the current shareholder or investor expected, and the market value of is the main guide to investment decisions and lending. Economists generally prefer to use market value over book value. This is because the market value determines the current value of the market. Most economists believe that market value is better in determining real value rather than book value based on historical basis. The use of book value instead of market value because of the instability of the stock market, which leads to fluctuations in share prices decline and rise.

2.9. Fair value

Fair value: An acceptable exchange rate for a property instrument between a knowledgeable and knowledgeable buyer and seller in an active and stable market. The use of the fair value concept when valuing shares and bonds results in the recording of unrecognized gains and losses relating to changes in fair value of available for sale securities under unrealized gain and loss and are reflected in shareholders' equity until Which are recognized and offset by the fair value adjustment that appears with the financial instruments in the balance sheet (Spizeland, 2003: 577).

IAS 32, issued in January 1995, on financial instruments (presentation and disclosure), states that when it is impracticable due to time or cost constraints to determine the fair value of financial assets or liabilities with sufficient confidence, Disclosure of that fact at the same time as disclosure of fair value characteristics of financial instruments (EY, 2001: 98). The use of the value is linked to the availability of market prices, but when market prices are not available, they are evaluated on a cost basis. Investment in financial instruments is evaluated in subsequent periods of the acquisition. This approach is defined as a cost method. The portfolio is evaluated and reported at book value and no gain or loss of ownership is recognized until the sale of the securities (Kieso, 2015: 987).

The researcher believes that the price and the cost can be equal to the value in certain conditions, but this is not fixed. Therefore, the value is a forward looking view, whereas historical information can be used to value the forecast. The future economic benefits are the first vector of value. Cash flow of past or present.

2.10. Relationship between accounting policies and the market value of the bank

What had been shown at the theoretical part, the value of the bank is determined by the market value of the banks shares at the end of the year or the so-called closing price, which is determined according to the fair value concept or also called fair market value. Book value is the result of the application of accounting principles and policies (Mashhadani, Hamid, 2014: 372). The book value is gotten by dividing the total equity of the owners, after excluding the value of the preferred shares over the average of the shares subscribed. The researchers' opinions, that adherence to the policies of a high conservatism has a direct effect to increase the values of shares of the bank, also they examined the relationship between the level of custody and the market value of the shares, the results was a positive impact of the accounting policies of the conservatism on the market value of the shares of the bank. The results of the study showed that there is a positive effect of the high level of accounting conservatism over the years of study on the market value of the stock, which means increasing the ability of banks that use a high level of accounting restraint to predict the future, reduce risks and make investment decisions that are consistent with the investment conditions surrounding the bank (Najjar, 2014: 207).

Abu Bakr (2011) said that accounting policies in contemporary accounting thought and its effect on the Quality of Financial Reports and investor decisions, he noted that there is a significant relative increase in the study of the effects of accounting policies on the quality of financial reports and their reflection on the market values of the banks shares, despite the calls by IFRS to apply fair value accounting.

The study proved that there is a positive correlation between the policies of the accounting conservatism and the quality of the financial reports and the value of the market bank (Abu Bakr, 2011).

3. Research methodology

The exploitation of banks to some gaps in the accounting principles that applied, as well as, in the accounting standards, either the local or international to achieve their own goals from the interests of the others, the accounting policies used by the shareholding banks have an impact on the market value of shares and reflected on the value of the bank.

This research is based on the assumption that the level of the accounting conservatism used in the financial reports of the shareholding banks listed in the Iraqi Stock Exchange affects the market value of these banks. The research took a group of banks participating in the sector of private banks listed in the Iraqi market for securities. As for the sample of the research, a sample of five banks that are stable in circulation will be chosen for the time series (five years). Temporal and spatial limits: The spatial boundaries of the research are determined in a group of Iraqi banks based in Iraq. The temporal boundaries of the research will include the financial reports of the sample banks over a period of time from 2013 to 2017.

This research uses quantitative research in the collection and analysis of data. The financial reports of the banks will be based on the research sample. These reports will be analysed to determine the level of the conservatism and determine the impact on the market value of the shares. Using the (Beaver & Ryan 2000 model).In order to study the relationship between the research variables and the hypothesis of the research , the researcher adopted the descriptive method using the model of the ratio of book value to market value (Beaver & Ryan model), which suggested using the ratio of book value to market (BTM) as a measure to determine the levels of accounting conservatism, The value of the Banks shares by comparing the book value of the banks shares calculated by dividing (total stockholders’ equity minus the book value of the Preferred Shares) by the weighted average number of shares subscribed, and the market value is the closing price on the stock market at the end of Financial year. The ratio of book value to market value (BTM) indicates whether the stock is above market value or is under-valued. If the ratio is greater than (1), the stock is below the fair value. And if the ratio is less than (1), it means that the stock is resident in the market above its fair value, meaning that the market has evaluated the stock is different from the reality of the books of the bank relying on other elements outside the books, but studies that used this ratio The conservative market assumptions are based on the assumption that the share price reflects all available information in a timely manner, meaning that the market value is fair. When the ratio of book value to market value is low, the bank has used accounting policies of an acceptable level. To reduce the value of its assets. In this study, the researchers relied on the scale (Beaver & Ryan, 2000) to measure the degree of accounting conservatism as an independent variable, which is the ratio of the book value of the property right to the market value of the property right. This measure is one of the simplest measures used in applied studies, Relationship between book value of equity and market value. But the reason why the researchers chose to not return to ease, but to the difficulty of the applying other standards like IFRS because of the high uncertainty in the Iraqi business environment and the difficulty of obtaining reliable information appropriate to other benchmarks .And using the data of five banks in the Iraqi market for securities and over five years for each bank, was selected sectors of banks as sectors of economically active compared to other sectors in the Iraqi market for securities. banks were selected within the sample based on capital indicators, trading and stability. then, to measuring the degree of conservatism will determine the direction of change in the level of the conservatism increase and decrease for five consecutive years for the same bank from 2013 to 2017, and here will be to determine the degree of conservatism and stand on the change in this degree, both up or down for five years in a row and then determine the impact on the market value of the banks shares by determining the change in the market value of the shares up and down for five consecutive years for the same bank, and then comparing the change in the degree of conservatism on the one hand and market value on the other hand, and to prove the hypothesis of research. It is assumed to be a change in both the degree of conservatism and the market value is moving in the same direction, whether or inversely proportional.

3.1. Trade Bank of Iraq

Table 1. **Analysis of the data by using the BTM model**

Year	Book value	Market value	Measuring of conservatism	The change of measuring conservatism	Change type	Change in market value	Change type after change of v m	Relationship type
2013	1.432	1.27	1.127	-	-	-	-	-
2014	1.311	0.92	1.425	0.03	Drop	0.370	Drop	Direct
2015	1.138	0.66	1.724	0.03	Drop	0.260	Drop	Direct
2016	1.098	0.41	2.678	1.0	Drop	0.250	Drop	Direct
2017	1.128	0.48	2.35	0.3	Rising	0.070	Rising	Direct

(*Source*: Compiled by the authors)

In order to analyse the data of this bank from this research, the level of the conservatism for 2013 was determined by (1.127). Since the ratio is higher than (1), this indicates is low conservatism, and no changes in the degree of conservatism and market value were identified as the beginning of the year. In comparison to the previous year, we observed a decrease in the level of the conservatism by (0.03) from the previous year. This was offset by a decline in the market value by (0.370) for the previous year. We find that the change in accounting conservatism is offset by change (1,724) compared to the previous year, we notice a decrease in the level of the conservatism by (30.0) from the previous year, corresponding to a decline in the market value by (0.260) dinars. We find that the change in the accounting conservatism offset by a change in market value. In comparison to the previous year, we notice a decrease in the level of the conservatism by (1.0) from the previous year, corresponding to a decline in the market value by (0.250) JD. We find that the change in the accounting conservatism is offset by a change in the market value. In the year 2017, the degree of conservatism (2.35) and compared to the previous year, we notice a rise in the level of the conservatism by (0.3) from the previous year, corresponding to an increase in the market value by (0.070) dinars and we find that the change in the accounting conservatism is offset by a change in market value.

From the above, the researcher believes that the policies of accounting conservatism are very low if or its zero, and perhaps the(TBI) bank practices profit management policies because the bank is making profits with a decline in market value.

3.2. Elaf Bank

Table 2. **Analysis of the data by using the BTM model**

Year	Book value	Market value	Measuring of conservatism	The change of measuring conservatism	Change type	Change in market value	Change type after change of v m	Relationship type
2013	1.334	0.88	1.515	-	-	-	-	-
2014	1.24	0.79	1.559	0.004	Drop	0.2	Drop	Direct
2015	1.177	0.75	1.569	0.01	Drop	0.04	Drop	Direct
2016	1.018	0.6	1.696	0.01	Drop	0.15	Drop	Direct
2017	1.037	0.34	3.05	1.8	Drop	0.26	Drop	Direct

(*Source*: Compiled by the authors)

In order to analyse the data of this bank from this research, the level of the conservatism for the year 2013 was determined by (1.515). Since the ratio is higher than (1), this indicates is low conservatism, and no changes in the degree of conservatism and market value were identified as the beginning of the year.

In comparison to the previous year, we observed a decrease in the level of the conservatism by (0.04) from the previous year. This was offset by a decline in the market value by (0.2) from the previous year. We find that the change in the accounting Conservatism is offset by a change in market value. In comparison to the previous year, we observed a decrease in the level of the conservatism by (0.01) from the previous year. This was offset by a decrease in the market value by (0.04). We find that the change in the accounting conservatism is offset by a change in value Market. In comparison to the previous year we notice a decrease in the level of the conservatism by (0.01) from the previous year. This was offset by a decrease in the market value by (0.150). The change in the accounting conservatism is offset by a change in the market value. In the year 2016, the degree of conservatism was (3.05). Compared with the previous year, we notice a decrease in the level of the conservatism by (1.8) from the previous year, corresponding to a decline in the market value by JD (0.260). The change in the accounting conservatism is offset by a change in the market value. From the above, we find that Elaf bank practicing the commercial and accounting policies are almost zero, and is remarkable the gap between 2016 and 2017, which is offset by relative stability in the market value, which indicates the practice of profit management or accounting errors.

3.3. Investment Bank

Table 3. **Analysis of data by using the BTM model**

Year	Book value	Market value	Measuring of conservatism	The change of measuring conservatism	Change type	Change in market value	Change type after change of v m	Relationship type
2013	1.186	1.01	1.174	-	-	-	-	-
2014	1.202	0.92	1.306	0.14	Drop	0.013	Rising	Inverse

Year	Book value	Market value	Measuring of conservatism	The change of measuring conservatism	Change type	Change in market value	Change type after change of v m	Relationship type
2015	1.135	1	1.135	0.17	Rising	0.07	Drop	Inverse
2016	1.125	0.68	1.838	0.7	Drop	0.01	Drop	Direct
2017	1.59	0.6	2.65	0.8	Drop	0.3	Rising	Inverse

(*Source*: Compiled by the authors)

In order to analyse the data of this bank from this research, the level of the conservatism for 2013 was determined by (1.174). Since the ratio is higher than (1), this indicates is low conservatism, and no changes in the degree of conservatism and market value were identified as the beginning of the year. In comparison to the previous year, we observed a decrease in the level of the conservatism by (0.140), from the previous year. This was offset by a decrease in the market value by (0.013) for the previous year, and we find that the change in accounting conservatism is offset by change inversely in market value. In comparison to the previous year, we observed a decrease in the level of the conservatism by (0.17) from the previous year, corresponding to a decline in the market value by (0.07). We find that the change in the accounting conservatism is offset by an inverse change in value market. In comparison to the previous year, we notice a decrease in the level of the conservatism by (0.7) from the previous year, corresponding to a decline in the market value by (0.01). We find that the change in the accounting conservatism is offset by a change in the market value. In the year 2017, the degree of conservatism was (2.65). Compared with the previous year, we notice a decrease in the level of the conservatism by (0.8) from the previous year. This was offset by a decrease in the market value by (0.3). The change in the accounting conservatism is offset by an inverse change in the market value. The researchers believe that the data of the bank may be distorted and cannot be measured according to the scale (Beaver & Ryan) and this may be due to errors in accounting measurement or profit management policies of the Bank.

3.4. Kurdistan Bank

Table 4. **Analysis of the data by using the model (BTM)**

Year	Book value	Market value	Measuring of conservatism	The change of measuring conservatism	Change type	Change in market value	Change type after change of v m	Relationship type
2013	1.3	2.1	0.619	-	-	-	-	-
2014	1.421	2.25	0.631	0.01	Drop	0.15	Rising	Inverse
2015	1.16	1.9	0.61	0.02	Rising	0.35	Drop	Inverse
2016	1.7	1.45	1.172	0.5	Drop	0.45	Drop	Direct
2017	1.87	1.26	1.484	0.3	Drop	0.19	Drop	Direct

(*Source*: Compiled by the authors)

In order to analyse the data of this bank from this research, the level of the conservatism for 2013 was determined by (0.619), Since the ratio is higher than (1), this indicates is low conservatism, and no changes in the degree of conservatism and market value were identified as the beginning of the year. We note that the data of this bank indicate that the years 2013 and 2014 use conservative accounting policies, but their reversal in 2013 reflected a decline in market value. In 2014, the accounting conservatism was consistent with the increase in market value.

In 2015 and 2016, there was a decrease in the level of the accounting conservatism where the ratio (1) was correct (1.172) for the year 2015 and (1,484) for the year 2017 compared with a decline in the market value of agencies (0.450) for the year 2016 and (0.190) for the year 2017 and this ratio was consistent with the (Beaver & Ryan model).

3.5. Baghdad Bank

Table 5. **Analysis of data by using the BTM model**

Year	Book value	Market value	Measuring of conservatism	The change of measuring conservatism	Change type	Change in market value	Change type after change of v m	Relationship type
2013	1.184	1.8	0.657	-	-	-	-	-
2014	1.165	2.06	0.565	0.01	Rising	0.260	Rising	Direct
2015	1.17	1.65	0.709	0.15	drop	0.410	drop	Direct
2016	1.074	1.17	0.917	0.2	drop	0.480	drop	Direct
2017	1.131	0.91	1.242	0.3	drop	0.260	drop	Direct

(*Source*: Compiled by the authors)

In order to analyse the data of this bank from this research, the level of the conservatism for 2013 was determined by (0.657), Since the ratio is higher than (1), this indicates is low conservatism, and no changes in the degree of conservatism and market value were identified as the beginning of the year. In comparison to the previous year, we observed a rise in the level of the conservatism by (0.01) from the previous year. This was accompanied by an increase in the market value by (0.260) JD for the previous year. We find that the change in the accounting conservatism is offset by change in market value, (0.709) compared with the previous year, we notice a decrease in the level of the conservatism by (0.15) from the previous year, corresponding to a decline in the market value by (0.410) dinars, we find that the change in the accounting conservatism is offset by a change in value market. In comparison to the previous year, we notice a decrease in the level of the conservatism by (0.2) from the previous year, corresponding to a decline in the market value by (0.480). The change in the accounting conservatism is offset by a change in the market value. In the year 2016, the degree of conservatism was (1.242). Compared to the previous year, we notice a decrease in the level of the conservatism by (0.3) from the previous year. This was offset by a decrease in the market value by (0.260). The change in the accounting conservatism is offset by a change in the market value. We note that the analysis of the Bank of Baghdad data was consistent with the model (Beaver & Ryan) if the rise of the accounting conservatism in 2013 was offset by an increase in market value, while in the years, 2015, 2016,2017 there was a decline in the accounting policy offset by a decline in the market value of shares bank.

The analysis of the results of the statistical analysis confirms that The level of the accounting conservatism used in the financial reports of the shareholding banks listed in the Iraqi Stock Exchange affects the market value of these banks.

The results of the analysis show that there is a relationship between the ratio of change in market value to book value, or the rise in the level of the accounting conservatism with the change in market value. The results of the analysis showed that the high level of the accounting conservatism (book value to market value below 1 leads to higher market value. On the contrary, the validity of the research hypothesis proved that the results of the empirical analysis proved that the decline in the accounting conservatism leads to a decrease in the market value.

4. Conclusions

As a first conclusion, we note that accounting conservatism is one of the accounting policies that are used to reduce differences between management and other parties, which contribute to balance between management and the requirements of other parties.

Second, the fact that banks exaggerate the level of the accounting conservatism has a negative impact on the financial reports of the bank, and opens the way for manipulation of management, but in contrast, the use of correct conservatism policies consistent with the IFRS standards it has many positive aspects and limit the behaviours of utilitarian management and credibility of reports Financial, and provides protection for both investors and creditors and other stakeholders.

Third, the results of the practical part of the research showed that the model of Beaver & Ryan (2000) for measuring the level of financial conservatism on a sample of the listed banks in the Iraqi Stock Exchange for the period 2013-2017 is different in the sectors that belong to the bank financial reports.

Fourth, there is a fluctuation in the levels of accounting conservatism in the analysed banks. In a financial year there is a decrease in the level of the accounting conservatism, which is accompanied by a decline in the market value. In the following year, the bank itself is characterized by a high conservatism policy, which is accompanied by a rise in the market value of the bank. The researchers believe that the reason for the fluctuation is due to the difference in the basis of accounting measurement as well as ignorance in the application of amendments to the rules or accounting standards and accounting methods by the banks sample research.

Fifth: the results of the practical study in the banking sector, showed a weakness in accounting practices or lack of accounting conservatism, which was reflected in the values of these banks, where the market value of the book value declined significantly.

Recommendations

1. Increase this type of studies that measure the levels of the accounting conservatism in the Iraqi market, and for securities should be extent to which they are consistent with the local accounting rules and with the IFRS standards must be adopted, for the importance of the subject and a profit management for others.

2. The Office of Financial Supervision and professional organizations and academics in the field of accounting to issue instructions and practical guidance for the policies of accounting conservatism as a guide for banks to reduce the manipulation of accounting numbers and practices and management of profits by the departments of banks registered on the Iraqi market for securities because of the negative effects on the financial statements reflected on the aspects, including the quality of the financial

reports and the characteristics of the accounting information and as a result the fair market value of the bank.

3.The ISX should require registered banks to disclose the accounting policies used in the annual financial statements and explain the justification for using these policies and explain their implications for the outcome of the Bank's and banks activity for financial position.

4. The results of the applied this study show a fluctuation in the policies of accounting conservatism tends to decrease in the financial reports of the listed Banks on the stock market.

5. The study recommends increasing the supervisory role of the Supervisory Board of the Iraqi Stock Exchange to follow up the financial reports of the banks (especially the banking sector, which showed the results of the study significantly different between its market values and book values) and to ensure that they use appropriate accounting policies consistent with local accounting rules and standards and urge to adopt IFRS within the local environment to increase reliability in financial reports and ensure the rights of related parties.

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PS17 MANAGEMENT INFORMATION SYSTEMS

Chairperson: Victoria Stanciu, Bucharest University of Economic Studies, Romania

The challenges and difficulties in the implementation of ERP systems in Syria

Hasan Alkoutaini

Sherzad Ramadhan

The main factors in analysing the deployment of Cloud ERP in order to create a competitive advantage

Lavinia Costan (Popa)

Gabriela Pascu (Popescu)

Impediments of an environmental SAP rollout process inside a sales and distribution enterprise: Analysis and lessons learned from the Romanian case

Viorel Costin Banță

Dana-Maria Boldeanu

Current security threats in the national and international context

Lavinia Mihaela Cristea

The challenges and difficulties in the implementation of ERP systems in Syria

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Abstract: *This research aims to identify the difficulties and challenges related to the Syrian situation during the implementation process. The information was collected from multiple sources for analysis and conclusion of difficulties and challenges of ERP implementation and their impact on the different stages of the ERP life cycle. In this research, difficulties and challenges such as lack of academic studies, economic factors, as well as external experts such as consultants, partners, and local companies, have a direct impact on the process of implementation in different stages of ERP lifecycle. This research will help raise awareness of potential risks in an unusual implementation environment. There are many factors that are relatively constant over time and have no observed effect in politically and economically stable environments.*

Keywords: *Syria; challenges; difficulties; ERP; implementation.*

1. Introduction

Nowadays, the competition between companies regardless of the size of companies became more intensive than before, the reasons and factors behind this competition is rapid and quickened development in the information technologies, the increasing size of using smart devices, rapidity development of these devices and diversity of its products as well as the effectiveness of social networking site also emergence of E-business. The markets are no longer limited to a firm, an agent or a group, but it's available to each of companies, individuals, exporters, and importers.

As a result, companies of all sizes have turned to adopt the new and useful electronic components in the world of technology not only to manage the daily transactions, but to compete with other companies, by saving cost, controlling daily transactions, improving performance, attracting new customers, retaining current customers, making right decision in the right time and other success factors (Totla, 2016). In order to achieve advantages, accurate information is essential as well as easy to access this information. Generally, technology and particularly information systems are the backbone of the companies (Bingi *et al.*, 1999). It became crucial to all size of companies, large, medium and small to adopt information system that fit for their business to reach competitive advantages.

Information system developed gradually until the rising of the Enterprise Resource Planning System, which would apply global practices in every aspect of the organization through the chain processes applied to the system.

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ERP system is software solutions to meet the need of the organization, taking into account the operational perspective to achieve the organizational objectives by integration the whole functions of business, ERP system enhance the operational efficiency of the organization by supporting business processes as well as creating competitive advantage through the activation of innovative practices (Al-Mashari *et al.*, 2003).

There are many challenges companies faced when implementing an ERP system, and successful implementation and achieving the main objective of implementing an ERP system is a business success. These challenges include selecting appropriate system for business, selecting experienced firms, effective staff within the organization and ability to adopt the ERP system as well re-engineering the operations of the business (Garg & Agarwal 2014). The study aimed to identify the challenges and difficulties that companies faced while implementing ERP systems in Syria.

2. Literature review

In 1990s Enterprise Resource Planning system was not well-known as today. ERP systems are software systems for many fields of business consist of some modules encourages economics entities such as Accounting, Marketing, sales, customer relationship management (CRM), supply chain management (CM), manufacturing, financing, and human resources (Rashid, Hossain, & Patrick, 2002).

As ERP systems are just a computer system, have changed the way of business management also has led to the improvement and sophistication of many large companies and the ERP systems have affected the organizations in terms of operational and controlling (Annamalai, 2011).

AMR is a leading organization firm focused on best practice and supply chain and also support technologies issues has expected that ERP system will increase in growth after five years at the rate 37% (Caruso 1998). Also, AMR has mentioned that the marked of ERP system will be largest and influenced application industries into the millennium. In the last two decades, many companies had different software even different software from department to department to do their daily transactions and business. This will make each department store their information independently and separately as well.

Consequently, the companies faced many complications in getting proper information on time. Going further in the 1990s the world headed to a huge competition and many firms recognized the costumer's need concentrating on the shortest Product Life Cycle (PLC), particularly in the manufacturing sector.

Based on this, companies had to in the direction of intelligent factoring and re-design their business process.

The integration idea has become crucial for manufacturing firms to integrate all functional area such as manufacturing management, customer relations management, human resource management, etc. Under this circumstance the MRPII has been developed to Enterprise Resource Planning (ERP) (Sadagopan, 1999). ERP system creates a database and merged all functions of business as one integrated system as shown in figure 1.

Figure 3. ERP Systems and *IT* source

The ERP system provides real-time information, sharing and allowing all department to communicate with other departments in the firm.

The technologies have revolutionized business in the 21st century. As it has become possible for companies to communicate with customers, suppliers, and vendors through E-business only by clicking the mouse. To better succeed, companies need to be able to integrate the ERP system with new and innovative innovations in E-business. Figure 2-2 shows the linkage between the ERP system and internal external stakeholders through E-business such as supplier, customer, consultants, service provider and shareholders (Norris *et al.*, 2000).

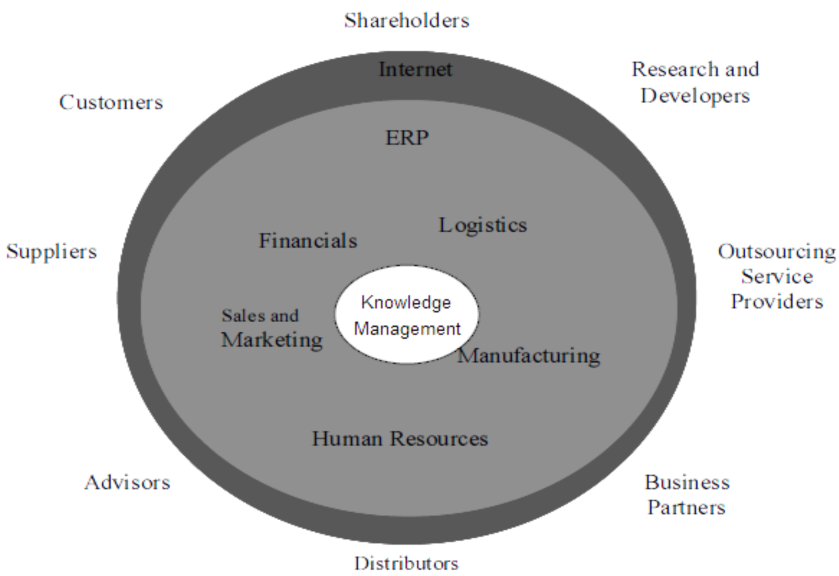

Figure 4. E-business *f*ocuses on communication with external stakeholders
(*Source*: Norris *et al.*, 2000)

Currently, the ERP system is considered one of the most favourable industries, differently with Syria, because there is serious lack of concerning research articles and academic research even in large as well as the small-medium size (SME).

Kamhawi (2007) has done research on factors for implementation success of ERP system, investigated six factors that impacted on the successful implementation of ERP systems such as encourage of top-management, convenient technical, training support, competitive pressure, and strategic fit. Also, Thapliyal & Vashishta (2012) argued in their research on ERP software implementation in Indian SMEs that, management support, technical issues, and organizational factors are the factors affecting the success of ERP system implementation. Mahdavian, Wingreen & Ghlichlee (2016) have conducted research on the key influence of key users ‘skills on ERP success, pointed out that effective technical expertise, strategic planning, and communication of key users have been critical success factors in ERP implementation.

The administrative support is considered the crucial role in succeeding the ERP implementation and the administration must observe all steps and procedures of implementing ERP systems (Wang and Chen, 2006). Also, (Poonam 2014) recommended that senior management should be an active member of the team of executing the ERP implementation.

The challenges when the ERP system implemented is studied. The implementation of ERP systems has many challenges named as non-uniform business operations in many countries, stakeholders have met their interests, lack of the number of master implementers, competent uses of multi-national advantages. Ranjan, Jha & Pal (2016) have done research on ERP implementation challenges, authors presented their work from four perspectives as following (ERP technology selection, Change management, Knowledge management, and Emerging technologies and future proof).

Another research from Sheu, Chae & Yang (2004) about national differences divided the challenges and issues into three main groups as below:

- Socio-psychological factors: Culture and language (CL) and Management style (MS).
- Economic/political factors: Government/corporate politics (GCP) and Government regulations/legal requirements (GRLR).
- Demographic factors: Internal technical personnel resources/labour skills (ITPR) and Geography/time zone (influence adaptation) (GTZ)

Table 14. **Challenges and issues with their influence on the implementation**

Influence	**Socio-psychological**		**Economic/ political**		**Demographic**	
	CL	MS	GCP	GRLR	ITPR	GTZ
Adoption	X		X	X		X
Implementation approach		X				
Project Duration		X				
Information Sharing			X			
Training	X				X	
Centralization	X				X	

(*Source:* Sheu, Chae & Yang, 2004)

Olsen (2013) mentioned in his study six phases in the ERP life cycle (Olsen, 2013, pp. 2-11).

- Discovery & Planning
- Design & Configuration
- System Development
- Testing
- Deployment
- Ongoing Support

But in our research, we divided the life cycle into three Phases: pre-implementation, implementation and post-implementation

- Pre-implementation: Vendor selection, Planning
- Implementation: Data transfer, Install, Configuration, Adaptation and Go live
- Post-implementation: Routinization and Development

3. Methodology

In this research, was collected data from reviewing articles about ERP life cycle and national difference in ERP Implementation to address the issues and challenges with their impact on each phase of the ERP life cycle, afterword we divided the ERP life cycle into three main phases to ease the analysis process (pre-implementation, implementation, and post-implementation).

Our Data was collected from private and public websites like Central Bureau of Statistics, Central Bank of Syria, Accountants Syndicate and from webpages related to partners' information in following ERP sites (Oracle, Sap, and Microsoft).

The next step was to analyse the impact of each challenge on the ERP life cycle, the challenges and issues related to national differences were ignored like (cultural, language, geography and time zone), the focus was on the challenges and issues that emerged from the conflict in Syria.

The objective of this research is to address the challenges and issues of ERP implementation in Syria and only the areas controlled by the Syrian state were considered in this research, in the other areas there are no statistics or information available.

4. Results

4.1. Lack of academic studies

There is a lack of academic research on ERP implementations in Syria. The authors established research in multiple academic databases like Syrian Ministry of Higher Education library (Education n.d.) , University of Aleppo library (University of Aleppo n.d.) and Tishreen University library (Tishreen University n.d.) for the following keywords (ERP, enterprise resource planning and enterprise systems). only two studies were founded with ERP word in their subjects.

- The role of ERP in controlling and improving the control processes in the project / applied study on the Syrian food companies 2013 (Alazwar, 2013).
- ERP in Syria: Propositions for ERP success (Shammout, 2007).

A large number of studies on the benefits of the system has a direct impact on raising awareness of ERP benefits. The organizations in the planning stage need these studies to carry out a comprehensive analysis of the current state of the organization and study the expected benefits from adopting ERP systems.

It is also important to have studies on the ERP systems selection, which will help the organization in how to differentiate between vendors, and what is the best solution that fits the organization.

Having sufficient studies on ERP success factors and the causes of failure will help the management in understanding the concept of success and perform successful implementation.

Also, articles that discuss ERP life cycle give an idea of the most important points that must be focused on each cycle and make it easy to perform ongoing evaluation of the implementation.

In the post-implementation phase, it is important for the management to measure the success rate of the implementation. The existence of studies on measuring success will help in determining the goals achieved and developing a sustainable development plan.

4.2. Syrian economy issues

The Syrian economy has been experiencing difficulties and challenges since 2011. This has affected the situation significantly on the local currency exchange rate, the Syrian pound lost about 90% of its value in the period between 2010 and 2019. As for the energy sector, electricity production in 2017 decreased by 78% compared to 2010, resulting in an electricity rationing policy of up to 12 hours per day in some areas. In the oil and gas sector, there is also a significant decrease in production, which reached 50% in gas and 26% in oil between 2010 and 2017.

Table 2. **Electricity/Gas an oil production in Syria 2010 – 2017**

Production	2010	2017	% of reduction
Gas / ton	99,243	50,017	50%
Gasoline Extra / ton	927,743	711,884	77%
Normal gasoline / ton	50,398	28,703	57%
Normal Kerosene / ton	3,498	759	22%
Oil / ton	3,699,937	947,333	26%
Fuel / ton	4,007,899	1,470,855	37%
Electricity for industrial use / Mwh	1,082	841	78%

(*Source*: Statistics n.d.)

All this led to uncertainty in the continuity of production and in the expectation of revenues and expenses in general and Since the adoption of enterprise resource planning is an investment of the enterprise, this uncertainty affects negatively the accuracy of the plan and the implementation timeline.

4.3. Local programs/ERP partners/consultants

There are several local solutions that are widely used in small and medium enterprises, but these solutions do not amount to being called ERP systems but it is more accurate to name them as accounting programs. These local companies are also responsible for the software installation and consultation of the program that bought or want to buy. The performance of these programs is acceptable despite some technical problems from time to time, although these programs remain cheap compared to solutions provided by non-local companies.

A research was conducted for ERP partners on the websites of the most famous ERP vendors, no partners were found in Syria. As of now the reason behind this could be the economic sanctions on Syria but this situation was similar to the one before the conflict in Syria.

In the pre-implementation phase, the management usually uses consulting companies or specialized companies in the implementation process to provide advice on the process of choosing the solution that suits the company and the nature of its activity in addition to taking into account its financial position. In the case of Syria and due to the lack of local consultants or implementation partners, the administration is obliged to resort to non-local expertise, which carries a large additional expense. The same will be in the implementation phase and beyond, the company will bear additional cost for implementation and training services.

5. Conclusions

This research investigated the difficulties and challenges that Syrian companies may face in the process of implementation during the different stages of the life cycle of the ERP. This study helps to highlight the potential risks to avoid the failure of implementation.

Syrian researchers should be more interested in conducting research on topics related to ERP systems in order for the parties concerned in implementing and using the ERP to benefit from these studies.

Professional associations should also have a role in conducting awareness seminars or workshops on ERP systems, its benefits and its impact on companies and users.

In the pre-implementation process, companies must develop a flexible plan capable of dealing with different scenarios, this can be done by controlling and managing the risks. Companies wishing to adopt an ERP system should study their needs and objectives from such adoption to choose the appropriate solution. Local programs are still a good solution for SMEs at a reasonable cost.

Presence of ERP partners will have a positive impact on the process of ERP implementation by transferring this experience from ERP vendors to the Syrian market. ERP partners also have a role in studying and understanding the needs of the market and organizations to build multiple solution plans that suit the needs of the organizations in different business sectors.

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The main factors in analysing the deployment of Cloud ERP in order to create a competitive advantage

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Abstract: *Enterprise Resource Planning (ERP) systems offer extensive benefits and facilities to the entire business. ERP systems help the company to share and transfer data and information across all function units inside and outside the company. Exchange of data and information between company departments contributes in many ways in order to achieve different objectives. Cloud computing is a modern approach to computing, that takes place over the internet and offers scalability, reliability, availability and low cost of computer resources. The implementation and operation of ERP systems over cloud offers great advantages and benefits, despite the difficulties and challenges encountered. The time-for-market speed dominates today's business agenda, including new products and the supply of new IT applications and platforms. The ERP Cloud solutions enable company management to access accurate real-time information to help them make faster and better decisions and ensure data accessibility, visibility and consistency. Moreover, Cloud ERP eliminates redundant processes and systems and dramatically reduces the costs of doing business.*

Keywords: *ERP systems, Cloud ERP systems, Cloud computing, Cloud benefits, Cloud challenges.*

1. Introduction. About Enterprise Resource Planning

Enterprise Resource Planning (ERP) systems have gained increased attention over the past two decades as companies continue to look for ways to achieve a strategic and competitive edge with these technologies. As Harwood (2016) says, ERP systems are complex software packages that integrate information and business processes into and within business areas. An area that continues to elude practitioners and researchers is how to realize the benefits and full value of an ERP investment.

With a huge amount of resources invested in ERP initial deployment (Rajan and Baral, 2015), companies are increasingly keen to turn this investment into organizational success. However, studies have shown equivocal results for ERP implementation. On one hand, as Liaquat *et al.* (2002) says, some companies have achieved operational efficiency and other positive changes through ERP implementation.

On the other hand, some companies are left to struggle with transforming the expectations into the current success of ERP. An area that has come under control as a possible explanation of variations in ERP success is the level of ERP usage among implementation firms. ERP implementation companies continue to struggle with the reduced use of ERP end-users. Improper use of the ERP system was linked to a poor

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understanding of ERP systems, causing firms that maintain parallel systems and end-users to create solutions for delayed migration.

Although the ERP system configuration is generic and is mostly with ERP vendors, the process of acquiring and using these packages can be influenced by organizational factors. Such factors (Safari *et al.*, 2015), if not adequately addressed, are able to limit the usage of ERP systems. A large body of ERP research literature has identified critical factors that favour the successful implementation of the ERP system implementation, including technological and managerial support (Ramadhana *et al.*, 2016).

2. Research methodology

2.1. Research criteria

Scientific papers published in quoted journals were identified using the above-mentioned keywords. Only articles published since 2014 have been selected for analysis.

2.2. Evaluation of study selection

From the identified articles, we only pick the items that best fit the topic of this article. For pertinent conclusions, scientific articles on the use of ERP in business were pursued, and we excluded articles on the use of ERP in other areas. The research papers identified were eligible for this topic.

2.3. Research methodology

The research methodology features in defining three hypotheses and analysing the qualitative data. Using the documentation mentioned below we will demonstrate that there is at least one element which confirms the assumed hypotheses:

H1: Adopting an ERP system can create a competitive advantage for the companies if they take into account the organizational context.

H2: If ERP system selection features are in line with company needs, ERP will work efficiently and effectively.

H3: If a company wants to maintain its competitive advantage in technology, it should be in trend with new technologies and accept the challenge of Cloud ERP.

3. Results

H1: Adopting an ERP system can create a competitive advantage for the companies if they take into account the organizational context.

As stated before, although companies continue to invest in ERP systems, such investments have not always yielded the expected results. This article identified the factors that can influence the use of the ERP system. Insight was provided as to the specific interplay among organizational factors as technical resources, organizational fit and extent of ERP implementation and ERP system usage as well as ERP benefit.

The influence of organizational adaptation, technical resources and extent of ERP deployment can affect ERP system usage. The key antecedents of using the ERP system can provide theoretical lens for a better understanding of how companies can stabilize and use ERP systems efficiently and effectively.

For managers and executives, the key to the proper use of their ERP technology may be in the depth and breadth of initial ERP deployment. Thus, before ERP deployment, it would be better for organizations to analyse how well ERP implementation captures critical business processes, data requirements, and user interface rather than relying solely on ERP vendors' claims that ERP systems are guaranteed to offer "best practices" solutions for the company's information processing needs.

Although this article brings a series of contributions, like all other research studies, it has some limitations. First, the article identifies a limited number of variables that may affect the use of the ERP system. It was considered important not to delimit the use of the ERP system in the organizational context, ignoring the social context in which the system is used. However, this study takes into account the organizational context and does not take into account elements of the social context, such as the level of matching of the system with the organization that could affect the success of ERP system use, the appropriate way of interacting with the user or the level of personalization. It is important to emphasize that these elements have not been identified as key elements in other studies, but rather in correlation.

H2: If ERP system selection features are in line with company needs, ERP will work efficiently and effectively.

Previous ERP articles have focused on investigating the capabilities and role of ERP in generating competitive advantages. Few studies have been conducted on how ERP adoption and implementation can contribute to creating a competitive advantage.

The findings of this article emphasize the usefulness of certain factors by providing evidence of their effect on the competitive advantage of ERP projects. Our findings suggest that understanding the potential strategic value of ERP in terms of potential cost reduction, customer service improvement, and managerial decision making is important for setting up the opportunity to achieve competitive results.

Other studies identify an insignificant relationship between quality of information and competitive advantage (Mao *et al.*, 2016), which confirms that information provided by ERP system cannot automatically lead to the creation of a differential value.

To demonstrate the hypothesis, this article will highlight the importance of a set of factors since the adoption stage of an ERP system. It will be demonstrated that managers should actively participate in this process to gain a competitive advantage from ERP, but it is recommended that managers first define the goal of benefits from possible complementarities between different factors that can directly influence competitive advantage from the ERP adoption stage.

3.1. Effect of system quality on competitive advantage

Research results show that the quality of the system is a significant element in establishing the competitive advantage in ERP projects. If we have previously established the role of system quality over the effect of organizational performance, we have now expanded our knowledge on the role of system quality in achieving competitive advantage.

Our findings suggest that good system quality is a necessary condition for creating differential capabilities. A good quality ERP system will facilitate stronger and more profitable partnerships with supply chain partners, support the brand's distinctiveness and diversity of products and services by incite innovation to remain competitive on the market. Since ERP systems are generally purchased off-the-shelf, the results of this article highlight the need for careful analysis of system quality attributes in order to gain competitive advantage.

3.2. Effect of data quality on competitive advantage

We find that the data quality is not a significant predictor of competitive advantage, which is a somewhat unexpected result. Previous articles have argued that the quality of the data has a significant positive influence on the organizational impact. The results suggest that ERP's ability to produce accurate and up-to-date information and well-formatted information can not necessarily turn into differentiated benefits.

The growing maturity of ERP systems may also be another reason for producing a consistent level of data quality for adopting organizations, which does not lead to unique benefits. Given the results, it is plausible to suggest that managers should focus on how information is used and reinvented to create a distinct advantage.

3.3. Effect of organizational readiness on competitive advantage

The results show that organizational training is a significant element for achieving a competitive advantage in ERP projects. An organization's capabilities to deploy, operate and maintain an efficient ERP system will make it easier to use and could lead to differential benefits.

The findings confirm that competitive advantage can be created by focusing on staff skills development, having a good experience in network-based applications and a company-wide information sharing culture. Installing updates confirms that staff with well-developed IT skills are vital to maintaining and using ERP and facilitating operational efficiency and performance in areas such as transaction speed, improved supply chain management, increased market share, and improved returns on investments.

With a well-computerized and network-connected infrastructure, the ERP's operation and integration will be riddled with problems within the organizational structure. Policies and programs aimed at adopting appropriate technological advances and upgrading technical infrastructure and staff skills could help substantiate the deployment of ERP and assist differentiated benefits after ERP adoption.

H3: If a company wants to maintain its competitive advantage in technology, it should be in trend with new technologies and accept the challenge of Cloud ERP.

ERP Cloud solutions are new technologies that require standards, rules and regulations. The most important element for the Cloud is the security challenge. Sharing the resources over the cloud can lead to performance and lock risks. Improving security standards in cloud-based ERP systems will also be reflected in performance (Kinuthia and Chung, 2017). Most of the analysed articles reported the benefits of cost reduction. ERP Cloud solutions are typically provided in generic packages to meet the requirements of a wide range of customers.

ERP systems reflect the size of the business and this business dimension is subject to change over time due to many external and internal factors. ERP Cloud solutions offer scalability to cover the company size changes. ERP Cloud solutions help the company focus on other concerns related to their core business. On the other hand, ERP cloud deployment can lead to loss of IT skills.

4. Conclusions

H1: Adopting an ERP system can create a competitive advantage for the companies if they take into account the organizational context.

This article provides valuable insights into the use and benefits of ERP systems as a way to explain variations in ERP implementation and use results. In line with the hypotheses, the conclusions indicate that the technical resources have a significant positive effect on the use of the ERP system.

This result not only confirms the hypotheses, but also indicates that *organizational context* is an important factor in using the ERP system. This finding is in line with recent research, which states that greater compatibility between a system and organizational processes that the system supports will result in higher efficiency and effectiveness. It is necessary to consider how the processes and requirements of existing user organizations fit the process, data and interface of an ERP package, otherwise the effort to achieve the optimal performance of an ERP system may be useless. In addition, managerial flexibility has proven to be a moderator of the relationship between organizational matching and the use of the ERP system.

Consistent with the hypothesis, the results indicate that the scale of ERP implementation has a positive effect on the use of the ERP system. The expansion of ERP deployment facilitates the integration of processes for a wider business range and allows end-users access to more ERP functionality.

H2: If ERP system selection features are in line with company needs, ERP will work efficiently and effectively.

This article brings three main arguments in support of the hypothesis, contributing to the development of theory on how the characteristics of an ERP project can be correlated with the competitive advantage.

Firstly, this study demonstrated that early assessment of the following factors in the ERP adoption phase is essential to assess the likely capacity to achieve a competitive advantage: system quality, organizational preparation, environmental assessment, and strategic value assessment. If one of these factors is judged to be inappropriate, then it may be brought to the attention of management at the ERP adoption stage and addressed in such a way as not to impede the realization of the competitive advantage.

Secondly, it has been found out from the above-mentioned features that they can influence in many ways the successful adoption of the ERP system. For example, the choice of ERP system functions is not only essential to the success of the adoption phase in the ERP implementation process, but it can influence several stages and can also contribute to gain the benefits and differentiated values that contribute to competitive advantage.

Thirdly, a set of background factors have been identified that have a significant impact on achieving the competitive advantage of ERP projects.

Using the methods outlined above, it is possible to determine the effects of other background factors that can be included in future research, such as top management support for achieving a competitive advantage.

Effect of environmental assessment on competitive advantage

Assessing the organization's environment can have a direct and positive effect on achieving competitive advantage. The articles analysed have found that there is a correlation between internal and external factors, such as vendor support and consultant competence (Tsai *et al.*,2009), which significantly influence decision-making and control, efficiency and cost-effectiveness.

We believe that setting the environment can create a competitive advantage by supporting the company to acquire distinctive branding skills and personalized product delivery. This advantage can be achieved by identifying and planning gaps and opportunities for expanding products and services, improving product and service features, creating new products and product lines, ending maturity and lowering products and services, and identifying new and untapped customer markets. An early SWOT analysis, a strategic planning technique, can help identify strengths and weaknesses, opportunities and threats related to business competition or project planning and it will be important for implementing the strategies needed for differentiated growth.

Effect of strategic value on competitive advantage

We believe that acquiring a good understanding of the strategic value of ERP adoption is an essential element for achieving a competitive advantage. The results of other studies (Koeijer, 2017) imply that an understanding of the desired perceived strategic value in terms of reducing costs, improving customer service and improving operational managerial efficiency is essential to achieving competitive differentiation.

H3: If a company wants to maintain its competitive advantage in technology, it should be in trend with new technologies and accept the challenge of Cloud ERP.

For creating an overview of Cloud ERP system, we will present the benefits and challenges for adopting it.

The most important *benefits of Cloud ERP*, identified during the study and presented as results of this article, are:

- *Lower costs*: Due to the separation of computing resources from the company location, businesses do not have to pay for building the computing environment. They pay for accessing the environment and the data via the internet.
- *Quick implementation*: Cloud systems vendors offer a wide range of ERP solutions and these solutions can meet most of the company's needs. The choice between different solutions and products takes place according to the needs of every company. The implementation process has accelerated due to this selection process.
- *Scalability*: Cloud services are very elastic via dynamic ("on-demand") provisioning of resources.
- *Focus on key competencies*: Cloud ERP helps the company to manage its business more efficiently and offers the chance to focus on other concerns related to their core business.

The main *challenges* regarding Cloud ERP are:

- *Subscription fees*: In order to use cloud ERP, companies must pay subscriptions for the services they use, as long as the company is using these services.
- *Security risks*: Due to high availability over the cloud for cloud services the security risks increase as well. Handling security issues for could ERP is a challenging and complex process.
- *Customization and integration limitations*: Suppliers offer ERP solutions in packages with limited customization and integration options. These limitations do not exist in traditional ERP systems.
- *Loss of IT skills*: Switching to Cloud ERP involve that many activities will be moved to the IT department of the ERP cloud provider. The result of this move could be the loss of the company's IT department skills.
- *Cloud ERP control*: Cloud ERP systems are geographically located outside of the company, and the control process is more cumbersome than the traditional ERP.

Drawing a general conclusion about the information contained in the analysed articles, we believe Cloud ERP is the next-generation "workforce". Cloud is not just the proven baseline for ERP, but the way to reduce the number of companies that still have active systems at the headquarters. Unlike yesterday's ERP systems, cloud-based ERP allows companies to meet the requirements of the digital economy.

Workforce requires access to new technologies, such as mobile and social, with an easy-to-use interface that allows them to easily collaborate and share information. And it is unlikely to accept old processes, obsolete technologies and difficult to use interfaces. Companies that will not join ERP Cloud will lose the competitive advantage they have at this time.

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Impediments of an environmental SAP rollout process inside a sales and distribution enterprise: Analysis and lessons learned from the Romanian case

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Abstract: *Nowadays, to be able to stay in competitive environment, organizations have understood, that implementing an ERP system it's the best condition for a sustainable business. Many companies in Romania have become branches of large companies in the world. In order to manage these companies, they had to adapt their IT solutions to the standard imposed by the mother company in order to monitoring of enterprise processes and factory floor is one of the ways to achieve better efficiency, performance and overview. As consequence of several frameworks, a lot of methodologies were proposed, rollout being one of them. The rollout solution was adopted by the Romanian company for which this case study was made. We will look at the difficulties encountered by SAP consultants in discussions with the Romanian business environment in the context of the rollout case adaptation of Poland and Slovakia. All cases encountered during the project run, as well as the proposed solutions, will be analysed. However, the amount of different available solutions provides difficulties to make right decisions. In conclusion, part of this case study, we have achieved an implementation model, which makes implementation the successful one.*

Keywords: *Enterprise Resource Planning, global, SAP, rollout implementation, risks, Romania.*

1. Introduction

Organizations living in nowadays digital world are dependent of IT intelligent systems which will provide customers fast and efficient services, at a competitive price and with guarantee quality, in order to improve the enterprise's business results. Professionals are coming up with modern and innovative approaches in software delivery so that they will integrate the business processes throughout various areas for getting the competitive advantage. Many companies are seeking international growth by going global. In this regard, their IT solutions require challenging and costly transformation. As the subject (IT solutions) is very vast, we are limiting our discussion to Enterprise Resource Planning (ERP) global solutions, mainly to what rollout models and approaches mean. Our paper aims to explore the difficulties encountered by ERP, in our case SAP, consultants in regard with the Romanian business environment in the context of the rollout case adaptation of Poland and Slovakia. For this we will analyse what a full rollout means as a strategy for a Romania company's new ERP system.

To enhance the analysis, we seek answers to the following questions regarding the difficulties of the adaptation of the rollout at the level of the company:

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R1. What are the type of risks concerning and what is the priority?

R2. What is my team's role in mitigating the potential risk?

R3. What is the appropriate mitigation strategy?

As a methodology we have performed a qualitative data collection by conducting some interviews with key stakeholders at the level of the Romanian company reading the difficulties of the ERP rollout adaptation, likewise a small questioner concerning the level of risk for implementing a new technology, like SAP system.

In the following section we review the relevant literature on global ERP systems' implementation in context with the Romanian market and, also, on rollout implementation process. Next, we present the case study and analyse data extracted from the results of the ERP implementation process, discussions with parties involved in the process and respondents to the questionnaire and present results. We end our paper with conclusions, limitations and future perspectives.

2. Literature review

2.1. ERP implementation in Romania and globally

A significant number of companies are implementing these days an ERP system. Some companies are expanding to another country, for example to Romania, acquiring organizations from different fields of activity. Therefore, if these companies have subsidiaries in several countries, so they run globally, are already familiar with the issues that can arise from running a separate ERP system and they need to implement a strategy in this regard. According to Oracle, such a global ERP system provides a single transparent view into operations across multiple locations, meaning fewer teams are required to manage information and information flows more swiftly through the business. In this way, the decision-making process is going smoothly.

According to Albu *et al.* (2015) many existing studies are concerned mainly with ERP systems' implementation issues (such as benefits, issues, etc.), while the post-implementation or systems' employment phase is less investigated. We are going to investigate the post implementation phase, the one in which the rollout process model of a global company is going to be adopted and adapted to Romania.

2.2. ERP implementation rollout project

In the sense of ERP systems, rollout refers to expanding the business after implementation. In this regard, a company, especially a global one, which is expanding their services to other countries, follows a rollout. Right selection of rollout model is very important for a successful deployment of the solution (Perecharla, 2017). Therefore, adopt and adapt your model to the business environment. A way to ensure your employees are comfortable with the new tool and the various processes it oversees, is to have a proper rollout strategy in place right before you implement it (Benjamin, 2018).

There are two important axes that contribute to complexity in an international rollout (Frick, 2018):

- parallelization: the necessity to rollout in more than one country at once rather than sequentially. This requirement is due to time restraints, similarities between countries or other specific needs.

- localization: the necessity to adapt a product for specific countries, which involves additional development work, resource allocation and expenditure.

Consequently, in order to have a proper development necessitates examining factors including the number of countries and the similarities between those countries and the date when you go-live.

3. Case study

3.1. Description of the research site and motivation for changing/implementing an SAP solution

The company that is being talked about in this case study works in the sales and distribution area and production of painting products (interior paints, exterior paints, interior and exterior stains, industrial paints, adhesives & sealants). It is a multinational company based in another country - USA. The company in Romania was acquired in 2017, the management decision being to implement SAP as an IT solution, replacing two of the existing system (management and accounting and sales and distribution) at that time.

The mention two systems are active in area of sales and distribution and accounting area as well, with several areas of customers, with whom this company has business. When SAP was installed as an IT solution, version ECC 6.0 Ehp7 package was used, using the HDB database (HANA database), adding the entire area of sales and distribution module, material management, warehouse management and production planning module, part of the business environment existing in this type of company.
In 2018, it was decided to add the company from Romania in the core SAP system from the company "mother". Where a lot of discussions how they will proceed, to be a stand-alone company, or to be a company code in an SAP system.

The decision was to be a company code inside SAP of the company "mother". Under the "mother" SAP system, there were still 46 company codes, from Spain, Bulgaria to Poland and Slovakia and others. Another decision that had to be made was how the new company code in Romania will look and what model will be implemented, knowing it that will be an SAP roll-out and they will need a template. After a research work regarding the legislation, the way of working, the specificities in Romania, and the way of adapting the software solutions found here, it was decided to use the template found in Poland (with a customization part in Slovakia).

The activities inside this company from Romania are diverse ones, from production of paints products (interior, exterior paints, adhesives & sealants), to packaging and distribution of these products throughout the country. This company collaborates with smaller distributors and large chain stores, even with warehouses. One of the problems that occurred with the implementation of SAP was to connect with all vendors of paints products, links that are outside the system work area.

All of these business areas were covered by the SAP information system, the desire of the company's management being to have accurate data, to have all the activity in a single system, to report on-line, and to connect with all clients, customers and service providers to be made in the best possible time so that their activity is not disturbed.

The SAP system is used at maximum capabilities, from the accounting area (the one that solves all reports to the Romanian state - preparation of statements required by the state - here is also the export of data to the state institutions) to the production area and then sales and distribution of paints products. In the economic departments work several accountants who have their roles well defined in the organization chart of the company. The company also has an IT department, with three IT consultants working here, some foreign-language speakers, others not.

The communication difficulties with the SAP system provider (Romania or Germania) have greatly influenced the possibility of resolving some errors in agreed times and costs. Throughout migration / roll-out to the SAP environment, there have been several problems caused by the poor understanding of a foreign language, whether English or German. The most difficult thing was to adapt the thinking of the company's employees, to the SAP methodology, to how this system works.

3.2. Difficulties encountered during the SAP ERP rollout implementation into a sales and distribution company

The SAP solution provider (in our case being the one who will implement the rollout/change/modifications of the system) contacted the paint company (production and sales & distribution) in 2017, based on a large S/4 promotion campaign (ERP SAP ERP change activities), knowing that 2025 will be the end of maintenance cycle for the current SAP environment ECC solution. There have been a series of presentations either at the company mother SAP Competence Centre in Netherlands or at the company's headquarters, in USA. Were other presentations even in Romania or Netherlands headquarters of the company that distributes SAP. The scope for these presentations were to see which the best solution is, for the company acquired in Romania, so as to take into account the legislative difficulties, knowing that these are an integral part of the whole process of adapting the SAP solution.

It has been presented at the beginning of the discussion that this change of IT solution activity will not be easy, it will be long, the preparation of such a process of change, with different scenarios to follow, the choice of one solution being difficult to reach that date. In the process of changing the IT solution, even if it is scheduled to be achieved by 2025, the difficulties that have arisen have kept the price demanded by the implementing company as well as the number of days allocated to this change (adoption period). So, at the end, they chose to make a rollout in existing SAP system. This means that the acquired Romanian company will be a company code in the existing SAP system located in the Netherlands.

The big problem for the Romanian company regarding the change of the IT solution was the budget allocated for this activity, it had to be reduced (the initial requirement being to work with external consultants), the way this was accomplished by allocating internal resources within the SAP Competence Centre from Netherlands, France, Poland, Hungary and Poland. In the contract that was signed between the parties it was mentioned that the ECC Ehp7 SAP solution needs a powerful IT Infrastructure, the servers to be the powerful ones. There have been mentioned a series of actions that the Adopter (RO company) must solve in a very short time. The existing infrastructure does not meet the new challenges of the software solution provider. Another issue was the ability of employees to use new technologies and their ability to adapt to new requirements as quickly as possible - knowing that SAP is not a lightweight software solution.

Changing the IT solution within a large company is not easy, but on the other hand it can achieve in medium and long terms a reduction in IT division spending. If end users as well as key users do not have a clear vision of what will happen, I think it is a major risk for implementing new technologies. This should be managed very well by the company's management. The investment offered by the company in such implementations is a very large one, and the results must be in place.

In addition to the above details, an employee who knows the company's processes well will help the provider in the customization and testing of new solutions that come with the change from SCALA to SAP. Another point (issues) to be considered is setting targets for implementing new solutions, so if the adopter does not know exactly what to ask from the vendor, he cannot help in such a change. Another issue was the solution offered by SAP, this is totally different from the previous solution - SCALA, so adapting the employees to this one was very difficult for the consultants which were on the rollout project. Employees had to learn the new system, besides the fact that they had to do their daily tasks as well. We want to mention some other difficulties/risks encountered throughout the project:

Table 1. **Risks and difficulties associated with the project**

Id	Stream raising the concern	Risk/concern description	Risk/ concern type	Priority	Mitigation strategy
1	IT	Template definition difficulties	Operational	1	See action plan + Escalation to SteerCo
2	IT	FI/CO Localization issues	People/HR X-functions	2	Identify and have a local SAP FI/CO consultant and replace the French consultant
3	IT	High attrition risk for a consultant which want to leave the project	People/HR X-functions	2	Find a replacement and replace consultant in a proper manner; manage the relation with the consultant before leaving
4	IT	Project delays due to the slow response time from CoE	Operational	3	Escalation to CoE manager (Competence Centre Experts) and to responsible person in Romania, If needed, escalation to SteerCo
5	IT	Project stop for company provider of SAP and project due to the negative feedback	Operational	3	Improve the collaboration with SMEs; Delay the gap analysis with the local team until documentation

Id	Stream raising the concern	Risk/concern description	Risk/ concern type	Priority	Mitigation strategy
		received from SMEs (company management receive a negative feedback from the employees involved in the project)			is provided and sandbox is configured properly
6	IT	Delivery Manager - Role and responsibilities have not been communicated clearly and in detail. Change management efforts will be impacted	Strategic	1	1. Consultant prepares Role Description 2. The company management agrees on the profile and nominates the Delivery Manager
7	IT	IT needs - The new operations model most likely will require changes to the current IT landscape. The requirements have not been defined yet	Operational	2	1. Prepare template for data collection 2. Collect topics from functional streams + x-functional topics for IT as company enabler 3. Centralize all envisioned changes to IT Systems / IT Infrastructure 4. Start discussing with KMGI IT Dept. timeline for implementation."
8	Legal & Compliance	Classification of lawyers' activity as dependent by the fiscal authorities	Operational	3	1. No modification to existing lawyers' contracts hired w/ ILA (those who act as legal counsels) - Reinforcement from Consultant Team, and validation with CoE (versus the responsible in Romania)
9	Finance	Organizational landscape of Romanian acquired company: when should the "boxes" related to each team be finalized?	Operational	1	1. Conduct sizing exercise in parallel w/ first nominations (fill in change impact assessment tool) 2. Conclude on final Target Operating Model of RO Company according to proposed timeline (following finalization of Process Mapping - when all activities at each department level should be clear)"
10	Finance	When and based on what principles would we need to identify the people within each team? (e.g. stream leads to be nominated or more people);	Operational	1	"1. Prepare proposed approach towards team nomination/ structure during a week established 2. Agree w/Project leadership and Top Management

Id	Stream raising the concern	Risk/concern description	Risk/ concern type	Priority	Mitigation strategy
					3. Communicated w/Cons. streams and implement"
11	HR	Role-Person Fit Assessment Strategy- What tools and what criteria will we use to assess the population subject to the restructuring? Performance, even though a good indicator, is not enough for the decision	People/HR X-functions	3	"1. Prepare proposed approach towards team nomination/ structure during week established (such a strategy will address also retention bonuses, relocation packages topics). 2. Agree w/ Project leadership and Top Management 3. Communicate w/Project streams and implement"
12	HR	What are the costs to this assessment? (Can we afford to use external providers, what is the FTE involvement from inside the HR team to make the assessment, what is the level of involvement internally?);	Strategic	3	See above, point 11
13	HR	What recruitments can be internally sourced and what needs to be externally sourced? We will need to decide, with the guidance of the top management, on the philosophy of the human resources transition: are we offering the first chance to the internal candidates (positive discrimination in favour of the current employees) or we would rather get the best person for the job (and what is the impact for the staffing team workload – or would we rather contract a recruitment company?)	People/HR X-functions	3	See above, point 11
14	HR	Talent and Key People Strategy - The bigger risk though, is that some of our best people leave before or soon after the transition:	People/HR X-functions	3	See above, point 11

Id	Stream raising the concern	Risk/concern description	Risk/ concern type	Priority	Mitigation strategy
		Retention measures for the key people and talents ; Hand-over and takeover measures; Involvement of these employees in championing activities for the company, giving them responsibility to promote, explain and take leadership of the acquisition transition; Assessment of real engagement levels and intention to stay with the organization of the talented people (to avoid apparent commitment to the organization, followed by resignation once a better offer appears, with major implications for key role coverage).			
15	HR	Employer Branding Strategy -The implementation of the SAP will inevitably impact the entire organization and also the external reputation of the Group. We will have to cooperate with Communication and PR experts to ensure the impact to our employer brand is not negative. Our Recruitment team is already facing difficulties in recruiting for a number of positions, so a negative public impact of the restructuring can only make matters more difficult. We believe that communication should be done externally by the habilitated PR teams, but also internally, by our managers	People/HR X-functions	3	See above, point 11

(*Source*: compiled by the authors)

Based on below collected difficulties/risks during the mention project we can have a clear overview about all discussions / phases regarding the SAP implementation in the RO Company. At the beginning of the project we clarify exactly with management, team leaders and team members to contribute to the identification of risks throughout the life of the project in order to ensure that new risks are identified timely. Also stream leaders are invited to identify possible risks and to review the Risk Log. In order to do that we have created a questionnaire and we invited to answer the following questions:

- Do any of the identified risks impact my work stream? If so,
  - What is my team's role in mitigating the potential risk?
  - Has the appropriate mitigation strategy been outlined to avoid / mitigate the risk?
- What additional steps/ actions should be documented to finalize the risk mitigation strategy? (These additional steps must be documented in Risk Log by the team leader).
- Have all potential risks that could impact the successful completion of my stream's goals been identified? If not, the stream leader must identify the risk and outline the mitigation strategy in Risk Log.

Based on this, stream leaders will be expected to monitor the risks that have been identified to impact their teams to ensure that the mitigation strategy is successfully engaged if the risk materializes during the life of the project. More than that the PMO will monitor all high-level risks to ensure that team leaders plan mitigation strategies for identified risks and execute those plans should the risk become a reality.

Based on collected difficulties and risks we have the following situations:

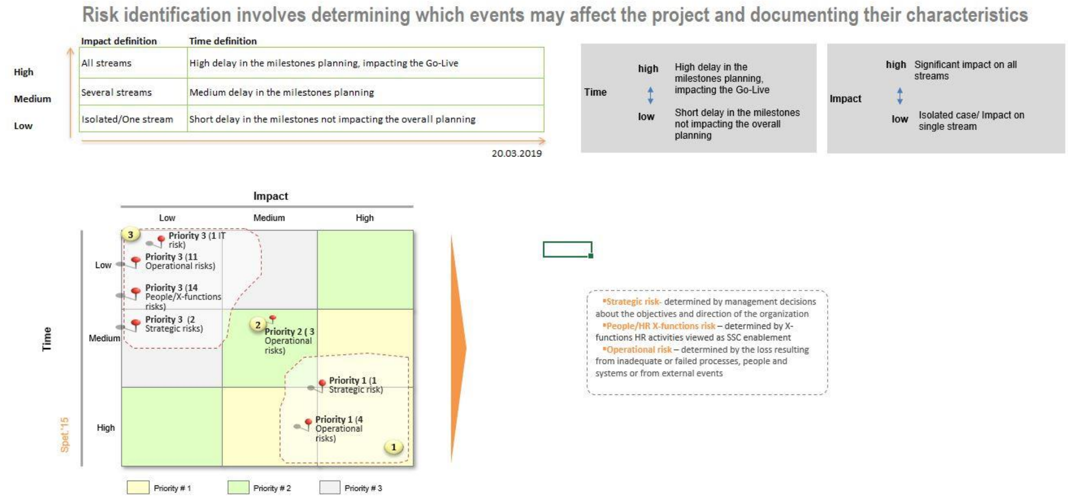
Table 2. **Identified possible situations**

Priority	Risk/concern type	Number of identified risks
1	Operational	3
1	Strategic	1
2	Operational	1
2	People/HR X-functions	2
3	Operational	3
3	Strategic	1
3	People/HR X-functions	4

(*Source*: compiled by the authors)

In the following graph we will show the time/impact matrix resulting from the collection of the 15 difficulties / risks.

Graph 1. **Time/impact matrix**



(*Source*: Authors' projection)

The phases of the project were also slightly exceeded (acceptance phase overlapped the adaptation phase), taking into account the fact that due to the change in the price of the implementation/modification of the IT solution, the implementation was done also with the help of the internal consultants (they were trained only through the project, the consultants from the to the implementer, making customization and training). The routinization phase started with a series of difficulties in all areas of using the new system (reports, the difficulty to find the transactions, etc.).

In our opinion the Infusion phase did not start yet. There are a lot of other directions where this system it can help. And nowadays the adopter adapts the new solution offered by SAP, the rapidity with which this change has been made, not being well thought out. From the point of view of the implementation provider, the cost reduction was a major impediment to the successful implementation of the migration project.

4. Conclusions, limitations and future research

The current case study was made within a company in Romania, from the production and sales and distribution area of the products used in construction, the paint part. We wanted to observe and analyse and draw some conclusions on how this Romanian company was prepared to face a change in the IT solution.

We have noticed and noted during this transition a number of difficulties and risks encountered in the SAP rollout project, risks that have been encountered due to several factors, such as: poor organization of the company's management in terms of transition to an IT solution top, such as SAP, poor training in terms of infrastructure, desire to create a great project with few resources, poor communication in a foreign language (English or German), creating a multinational team has led to difficulty in understanding the task existing projects, etc.

The risks were major along the implementation of the SAP solution, the focus of which was heavily insisted on the management and human resources area. Those who were the most open about adapting the new solution were those in Finance and Production departments.

Another aspect that we would like to conclude here is the Role-Person Fit Assessment Strategy. It was very difficult throughout the project to define a strategy in this regard. After all, it was necessary to involve the company that implemented SAP to find a solution in this direction. What we found out throughout the project, these things were founded in many companies in Romania, was the increasing pressure to the employees who participated in such actions: in one had to do their daily tasks, on the other hand they had to be part of the actions that took place in the project. We consider this a big risk; these increased the possibility for employees to make a mistake.

Moreover, this has generated a lot of stress and fatigue along the project, more experienced employees leaving the company, taking with them a lot of experience. All of our research and its results will be a "lesson-learned" for those in the future who want to explore the world of SAP implementation projects. We want to keep in mind that such implementation should be very well thought out, without big difficulties and risks, the implementation of such software requiring a thorough preparation of the project.

Future research will focus on the next stages of SAP evolution, how it will be received by the business environment in Romania, how we can mould a multinational team (language adaptation frustrations used in the project, culture, best practices, nationalities, understanding of the processes used in the project) and how this software will be implemented with the help of new cloud or on premise technologies.

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Current security threats in the national and international context

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Abstract: *The whole world is experiencing a great informational change conducted by reshaping and redefining technological processes. The rapid growth of information technology (IT) has evolved security risks in all financial and non-financial sectors. This paper intends to accentuate the great exposure of financial and non-financial information in the new cybersecurity context, emphasizing the impact of IT on security threats, cyberattacks and information security. In this context, the author adopted the qualitative method, based on an empirical approach, where the examination of national and international cybersecurity threats reports has been performed. The paper brings forward a comparative synthesis of top current security threats and raises the awareness of cyber criminality by bringing to the fore security issues intending to aspire future research. This paper answers four key questions and is the first part of a large research process which the author aims to continue.*

Keywords: *Cybersecurity, attacks, cybercrime prevention, top cyberattacks, current security threats.*

1. Introduction

The current requirements of the digital era facilitate the restructuring of information systems and force companies to adopt new strategies that respond to the challenges of information security. In addition to the advantages, IT usage brings new challenges: electronic fraud, information security issues, the processing of large volumes of data itself, final scope existing to ensure better decision making. It is generally accepted that cybercrime is a global issue being already a "sophisticated transnational threat operating on an industrial scale" (Hunton, 2012:203).

Information security is a complex and vast subject, current and interesting for any field of professional activity. Information security is a concept that is ensured by implementing a complex set of policies, procedures and organizational structures that have evolved very dynamically over the past 10 years as a response to globalization issues and the expansion of IT-based business processes. Paradigm shifts and further developments in technology have brought new concepts such as borderless security, cloud computing, big data, mobility, IoT, etc.

Companies' information systems, supporting business processes, can only be designed, implemented and exploited through a complex approach integrating information security features. Any security system must ensure the confidentiality, integrity and availability data storage and processing. As cloud services build and at the same time manage contemporary hybrid applications, cybersecurity plays a considerable

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challenge for every company and many threats are found in existing company's platforms. Cybersecurity is represented by the digital information with a focus on confidentiality, integrity and availability (CIA) of information security element contrary to potential vulnerabilities (von Solms and von Solms, 2017). Cybercrime became a permanent and constant threat for companies, individuals and governments as well. The financial and economic motivation is emphasized by numerous attacks. There are also newer coordinates in the cyberattacks close to political and military areas.

The objective of the author' research project is to gain an understanding of the dynamic and complex cybersecurity landscape, investigating the main threats and cyberattacks nature and typology emphasized by the international surveys, to develop a discussion on this critical topic and raise the awareness on cyber criminality. I consider this research *"Current security threats in the national and international context"* a challenge itself for the author, nowadays, security problems representing a true debate among specialists and companies.

As the Romanian literature is scarce on the subject and there are limited transparency and debate on the Romanian cybersecurity issues, the present research aims at (re)activate the interest for the research on the field and increase the interest and transparency for the subject implying companies' and government representatives and individuals not only the security information specialists.

This paper is structured as follows. The first section provided the introduction on cybersecurity, emphasizing the challenges which companies face up to, presenting paradigm changes on information security and short lines about cybercrime topic. The second section supports this paper by adding literature review, describing IT environment and critical vulnerabilities, highlighting the alertness of cybercrime climate and extending the security need to know, by answering how and why CISO should behave and what the motivation behind the hacker scene is. The third section discusses the research methodology, presenting the questions on which this study intends to answer on both local and global cybersecurity contexts. The fourth section presents the investigation of this study, concluded with the synthesis and discussion on cybersecurity reports. This paper ends with conclusions and future research directions.

2. Literature review

New technologies and technology related concepts conducted to an irrevocable transformation of the global economy. Global connectivity provides huge business opportunities and redefines communication and business processes but it also provides a generous field of action for cybercrime actors. "We live and operate in an ecosystem of digitally connected entities, people and data, increasing the likelihood of exposure to cybercrime in both the work and home environment" (E&Y, 2014). In this context, cybersecurity is no longer an information security specialists' concern but implies individuals, companies' board members and governments in the common effort to face and mitigate cybercrime.

Cybersecurity threats are not slowing down and they have no boundaries. All security specialists recognize the cybersecurity's increase in both frequency, impact and rate of success. The diversity and complexity of attacks maintain a permanent flag alert for the

CSIO and board members. “Enterprises continues to struggle with traditional security threats such as loss of devices, insider threats, malware, hacks and social engineering, while simultaneously trying to keep sophisticated attacks by non-traditional thereat actors” (ISACA, 2015:12).

The IT environment is getting more complex, day-by-day, under the business competition pressure and business globalization. In this context is proved that new technologies’ adoption is moving faster than security implemented solutions. There is a huge effort to deploy policies and controls aiming at securing information assets. “Procuring the advanced security technologies does not necessarily lead to a secure environment as their performance critically depends on how they are implemented” (Alhogail, 2014:540).

It is also important to define security policies and identify the most adequate solutions in a proactive approach, starting from the business processes’ characteristics and industries’ specificity. In this respect, the information security specialists’ ability to understand the business is critical. “The companies are investing in more and more in security solutions but they use the resources building a fence around their internal organization – including their data, systems and personnel… but the perimeter is no longer stable, and a fence no longer possible. Most of today’s business is done outside the defensive fence” (E&Y, 2014:7:19).

The entire security should be designed an d implemented in a coherent view of the business chains. As long as the partners’ processes are interrelated and the information flow follows the business chain, the security system design should integrate all the linked systems. Once the vulnerability is identified in any of the participant systems, the partners’ business chain is exposed. “Companies should move fast enough to mitigate the known vulnerabilities (E&Y, 2014:2). As IT environments register faster development and “are getting more and more complex, avoidance of information security incidents requires cooperation not only in the technological area but also across strategic, process and organizational area” (Drtil, 2013:44).

Literature review emphasizes as most significant vulnerabilities the following: outdated information security controls or architecture, mobile computing use, social media use, careless or unawareness of employees and employees’ insufficient monitor, cloud computing etc. One of the most significant vulnerabilities of all security systems seems to be the user itself. This is why companies are providing IT security training to their employees. “Enterprises that offer awareness training do not seem to be benefiting from a corresponding decrease in successful attack types; the nature of their attacks remains human-dependent, similar to those of enterprises without a program” (ISACA, 2015). Even so, the information security awareness programs should continue because is tremendously important to change security attitudes and behaviour among employees. There is also the need to build skills in non-technical disciplines to integrate cybersecurity into the core business.” (E&Y, 2014:7).

The companies’ culture should be revised and the awareness on risks, information security risks inclusively, should be improved determining a shift in the employees’ thinking in regard to information security. Information security risks should be understood in a proactive approach and addressed accordingly.

The cybercrime and cybersecurity landscape

Evolution in cybersecurity has experienced over time a "special" regime. Why special? We call it special because the evolution has been noticed unforeseeable and quick, imposing dynamism and permanent update across technology. Year by year, more sophisticated ways of the attack appeared onto the security "stage" and hackers continuously enjoy to blow up information systems.

Cybersecurity is all about the protection of data, currently settled in electronic form. Cybersecurity means a challenge for companies and many threats are found in computing platforms. And because a challenge must be faced, employees are the first pawns on the chessboard which must move and react accordingly. Information security awareness programs help, but if the human thinking is not completely aware of the consequences, reputable company and customers' data could suffer. The employees' attitude and behaviour could perform fantastically positive about information security. That is, there is always room for improvement.

By reason of this, strong communication within the team has been always encouraged. The same applies to the leadership between Chief Information Security Officers (CISOs) and Chief Executive Officer (CEO). The source of information is critical. To receive information from employees who are directly involved and work for information security is vital for the company since, for hackers, information is the most wanted data. Continuing in this respect, to be well informed about security threats in a world of continuous change is a top priority for seniority level and it will always be.

Cyber defence process requires the free and undeviating flow of information. This is critical in improving security posture and creating a strong CISOs-CEO leadership. Direct communication with the CEO has become compulsory since is enhancing transparency and is contributing to the easiness of decision making. The same believes Bitdefender (2018), strong cyber defences demand faster decision making and without a direct reporting to the command chain, cyber security may endure unfavourable consequences. Financial Services Information Sharing and Analysis Centre (FS-ISAC) drawn attention on a direct reporting method, which is to the CISO to the CEO. However, only 8% of CISOs report to the CEO and 66% to the CIO, CRO, COO. Financial companies are encouraged to pursue in the fighting against cybercrime. This would reduce unwanted pressures that hackers could exert on their targets and step by step contributing to better prevention with current resources. In time, small measures that are taken from the first signs might significantly reduce future strong attacks that could ruin company forecasts and stakeholders trust.

To keep hackers at bay is a great responsibility for the top company's hierarchy. Nine of ten IT decision makers admit the top priority which information security plays within their company. Nonetheless, only 64% of cyberattacks can be prevented, discovered and blocked, with the company's resources (Bitdefender, 2016). In their turn, hackers are strongly motivated to initiate attacks. For example, Sony was the victim of a malware cyberattack with the purpose to steal confidential information, but for Target and Depot, the motivation for attacks was the financial gain (ISACA, 2015). Interest for attacks is various and complex at the same time.

Hackers are preoccupied in finding new and intelligent ways to broke systems and be recognized for their efforts. As to seniority, IT-level is concerned among protection, detection and identification, hackers are clever enough to anticipate next movements. Attacks seem to evolve on a daily basis and the most frequent threat actors which exploit enterprises are represented by cybercriminals (45.6%), followed by non-malicious insiders (40.72%) and hackers (40.09%). Those actors think for financial gain, intellectual theft gain, theft of classified data, theft of personally identifiable information, disrupt of service (ISACA, 2015). It is important to know the background and motivation of cybercriminals. This might facilitate understanding the sophistication of cyber-attacks, the so-called social events (Kumar and Carley, 2016).

3. Methodology

This paper aims to examine, synthesize and compare current security threats in both national and international contexts. The research method is based on the empirical approach, the author adopted the qualitative research methodology. In order to offer a large perspective on the evolution of cybersecurity threats, there have been explored international cybersecurity reports during 2013-2018 and national cybersecurity reports during 2015-2017.

The authors considered this approach suitable and applicable for achieving the main objective of this article: to investigate and highlight the most alarming security incidents and to increase the awareness on this critical topic, namely cybersecurity. This study focus on understanding the changing and sophisticated cybersecurity landscape, presenting a comparative synthesis on the evolution of current security threats, but also a quick view on past security reporting and estimated costs of data breaches.

Firstly, preponderant theoretical research has been performed, where relevant worldwide literature has been studied, inquiring keywords as “information security”, “information security threats/incidents”, “cyberattacks”, “attack”, “information security changes”. The performed research introduces a systematic literature review of actual studies, where IT topic and current security issues in organizations have been debated by specialists. The literature review has provided me with support in structuring my research purposes and in synthesizing the main security issues highlighted by researchers.

Secondly, based on qualitative research, the author conducted an investigation for terms as “security threats report”, “global information security survey”, “motivation of cyberattacks”, “top 10 cyberattacks”, “cybercrime”, “cybercrime prevention”, “CISO”, “cybersecurity”, “DDoS attacks”, “data breach”, action necessary for the analysis of present cybersecurity landscape in a global and local view. The author analysed the cybersecurity surveys issued by Big Four companies and prestigious international security software companies, which offers premium protection against malware, spam, identity theft and guard companies privacy. The terms “threats”, “vulnerabilities”, “alerts”, “issues” are used interchangeably in this paper.

This study opens the debate on a detailed exploration (i.e. security issues) and discussion (i.e. knowledge among employees in information security) on cybersecurity topic. Thirdly, a critical eye on the most frequent cyber threats has been assumed over six years of study (2013-2018), remarking the trend of cybersecurity threats. Security alerts reports have been examined and topmost frequent cyber threats are presented in the next section, with emphasis on how many reports and to what extent that particular threat has been reported.

This paper intends to find the answer to the next four questions:

1. What is the top of the most common types of cyberattacks?
2. Do Big Four companies (E&Y, KPMG, PwC) reports conclude on the same top? But other international cyber reports (Kaspersky, Bitdefender)?
3. What is the position of Romania in the national cyber context and what are the security threats?
4. What should be done in order to avoid, protect and prevent cyber-attacks?

Data regarding cybersecurity threats encountered in organizations have been detailed in figures and discussed accordingly. The information gathered contributed to a better understanding of the threats evolution and is aiming to raise awareness among employees and managers since this problem seem to continue in a critical way. The author intends through this paper to engage in discussion cybersecurity specialists and alert the importance of this subject.

4. Results

This section describes the results of an investigation of main threats and provides important observations among security alerts during the last years among foreign companies and Romania. It is also introduced a discussion on the cybersecurity landscape, companies' average costs and the security challenges that appeared over time. In this section, the author hopes to boost the interest in security research and enhance the transparency, enthusiasm and curiosity on cyber criminality.

4.1. An international insight

Continuously progressing technology brings shifts in security threats and companies have no choice than to align to the new digitalized world, by adopting new and different strategies. As a result of security reports, according to PwC, in 2015, security incidents increased by 66% compared to 2009 (PwC, 2015). This suggests that security threats were changing so much, that for required controls is impossible to face all risks implied by the attacks. Another reason could be the response time which was no minimum at all and the chosen technology not implemented according to the business model. Companies should check whether controls are in place and employees have the knowledge to react in the company's best interest.

Organizations should look for their vulnerable points and try to overcome those problems by adopting good decisions that would offer an exact mind-set (e.g. each employee should definitely know what to do and how to react in case of an attack). KPMG (2018) agrees on this issue, employees doubtless play an important role in organizations. The perception of the misuse of a privileged account by an inside employee seems to conclude at 23%, placed on the 5th top cybersecurity vectors. The same found PwC (2015), incidents are caused by the staff (43%), but ranked as the 1st worst security incident. Kaspersky (2017 and 2018) split damages caused by the employees between intentional (30%, respectively 51%) and unintentional actions (31%, respectively 49%). CA Technologies (2018) reveal the lack of employee training/awareness at 31%. Information security would have a positive level of awareness among employees if employees would read information security policies and be engaged in security discussion, creating an active curiosity among them and enthusiasm through active participation at workshops or training.

For US retail stores the average cost of cybercrime in 2014 was of US $8.6 million (double compared with 2013) (ISACA, 2015). This suggests the actual damage which cyberattacks run on economic business in billions of dollars. Hackers look for the big prize and continuously "work" for successful attacks. E&Y estimates that the average cost of a single data breach is of $3.62 million for both 2017 and 2018, being confirmed the estimation of Ponemon Institute in its report for 2018 (E&Y, 2018). By 2019, cybercrime is estimated to become a problem which might cost a $2.1 trillion dollars (Security Intelligence, 2016). If those costs would rise so high, companies would definitely be critical affected. Consequences can sphere troublesome to downright critical.

A high concern is determined by the cyberattacks actors' ability in covering their criminal actions materialized in systems' penetration. If the Kaspersky report stated that the longest Q2 2015 DDoS attack lasted 291 hours, the longest attack in Q3 2018 lasted 239 hours. This finding is in line with Netwrix (2018), where the 1st of 10 overwhelming types of attack was defined by distributed denial-of-service (DDoS) attacks. This information reveals the complexity of the attacks, which is targeted and well prepared, and the huge explosion of the targeted system and impact on the entity exploiting that system.

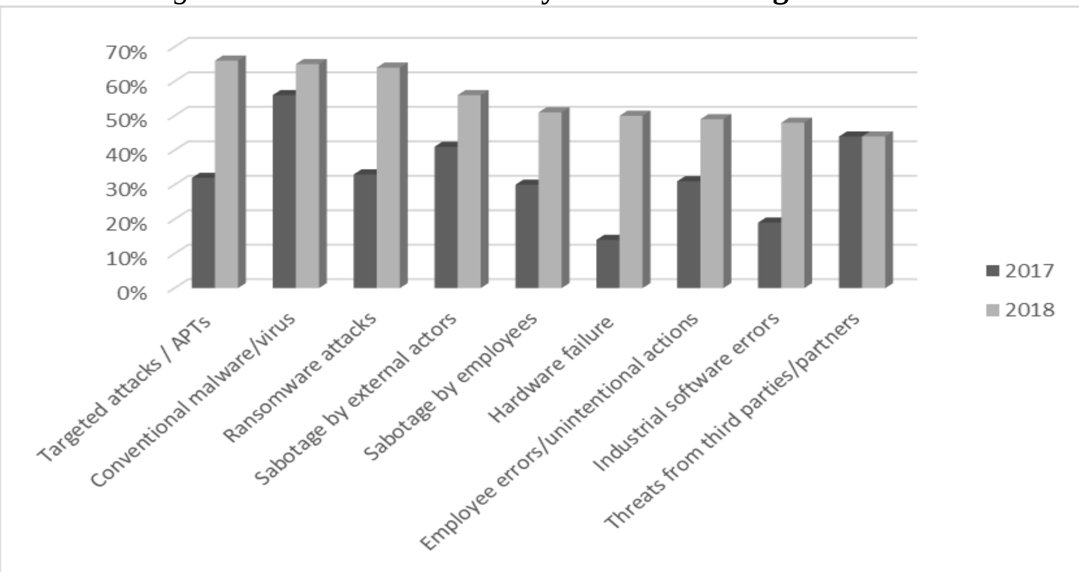
Compared to 2017, 2018 reveal a visible enhancement in the evolution of security incidents. Security threats continue to record high, presenting Targeted attacks/APTs (1st), succeeded by conventional malware (2nd) and ransomware attacks (3rd). The same trend is presented on sabotage by external actors. This incident upward at 56% from 41% and the company's first priority should be to extend controls in order to protect infrastructures' company. Sabotage or other intentional damages by employees (51% compared to 30%) needs special attention. This type of employee could be inspired from many sources like holding an antipathy over a bad personal evaluation, conflicts within the team or management, pressure from outside or other ideological vision, different from company's view. Security professional should observe in case there exist unusual behaviours among employees, like unsuccessful attempts to log in from a user system, frequency of downloads, arriving early at the offices and leaving late when everyone else is missing.

Surprisingly, hardware failure increased a lot in 2018. All electronic devices company's using should be protected by anti-malware software which can perform specific action against Trojan viruses, CIH virus (known as Chernobyl or Spacefiller), disrupted Flash BIOS. If protection is not in place, a hardware failure may cause impossibility on booting or starting the system and expensive repairs. Employee errors/unintentional actions represent unknown and ignorant errors because they do not realize the risk involved. The simple answer is really big. Proper education and workshops among cybersecurity, more direct discussion with staff by bringing issues and real situations which caused incidents could make them more aware. The same applies to the passwords in order to be changed on a regular basis, and why not including the second step in authentication for extra protection.

Another vulnerability that employees could bring is opening an entryway through devices they use, with unsecured apps. There are apps which need online connection during the day and may end up in contact with office mainframe, opening the gate for hackers. It is recommended mobile phones to use only verified and secured applications, without a connection to the office work. Industrial software errors are caused by software bugs and present an upward evolution for 2018. Industrial software programs should be designed according to the company needs, vision, strategy and mission.

Even if is difficult to implement an application that fits 100%, companies should be ambitious and adopt the suitable application for their processes and learn employees how to do proper work, facilitating the connection among system-employee-company. Last, but not least, threats from third parties or partners register the same 44%. Organizations should take into consideration and examine properly third parties whose behaviour could have an impact on the company's reputation.

Figure 1. **Evolution of security incidents during 2017-2018**



(*Source*: Author's projection based on KASPERSKY reports)

In line with Kaspersky, malware and ransomware are presented as well on top threats in international cyber threats reports during 2013-2018 (E&Y), (PwC, 2015), KPMG (2017, 2018), Kaspersky (2017, 2018), MIT Technology Review (2018). The investigation of all those reports reveal the complexity and sophistication, but the dangerous evolution of attacks. It is well-known hackers are constantly working to find new targets and future victims on their radar screen. The expansion for all vulnerabilities is ascending, cyberattacks continue to develop, evidence which expresses an alarming effect on information security and in opposition, a negative impact concerning the experience of users with different types of attacks and for the top company's hierarchy, an increased problem-awareness.

International security reports (E&Y, 2013-2018; KPMG, 2017, 2018; PwC, 2015) express as well other threats, such as phishing, fraud, spam, vulnerabilities associated with the system, cyber-attacks to steal money/to disrupt/to steal IP which follows the same higher trend. This trend does not seem to downward or stop. IT specialists, board members and investors continue to offer increased attention to security problems and are engaged more and more every day.

Even so, the impression advises this is not enough. The level of awareness should increase significantly, tending to 100%, should exist confidentiality on the processes, authentication of the system should be regularly checked, integrity of data should be in place, authorization of user must be provided only to the authorized person responsible with that particular system/process and availability of resources must exist.

Knowledge of cybercrime prevention and incident reporting topics among employees must be encouraged. Organizations need to do more. Actions pro-security have to be on the top of the today to-do list, forecast true budgets and devote economic resources on IT security. All cyber threats have to be considered and adopt better protection concerning potential hackers. Following a hypothetical case scenario introduced by Cyber Risk Management (CyRIM), a ransomware strain could break more than 600,000 companies globally within 24 hours. Whether companies remain unprepared to confront present attacks, a malicious global cyber-attack could cause global economic losses in the amount of $200 billion (The State of Security, 2019).

Companies seem to be more prepared to deal with cyberattacks (E&Y, 2019). Larger companies are more likely to raise budgets last year (63%) and this year (67%) than smaller companies (50% and 66%). As digital transformation agenda continue to dominate, a larger budget for IT security is needed. Almost all companies regard technology as a robotic process, characterized by automatic learning, artificial intelligence, contrary to natural intelligence. All these changes will come with additional cyber risks and necessary investments.

4.2. A Romanian insight

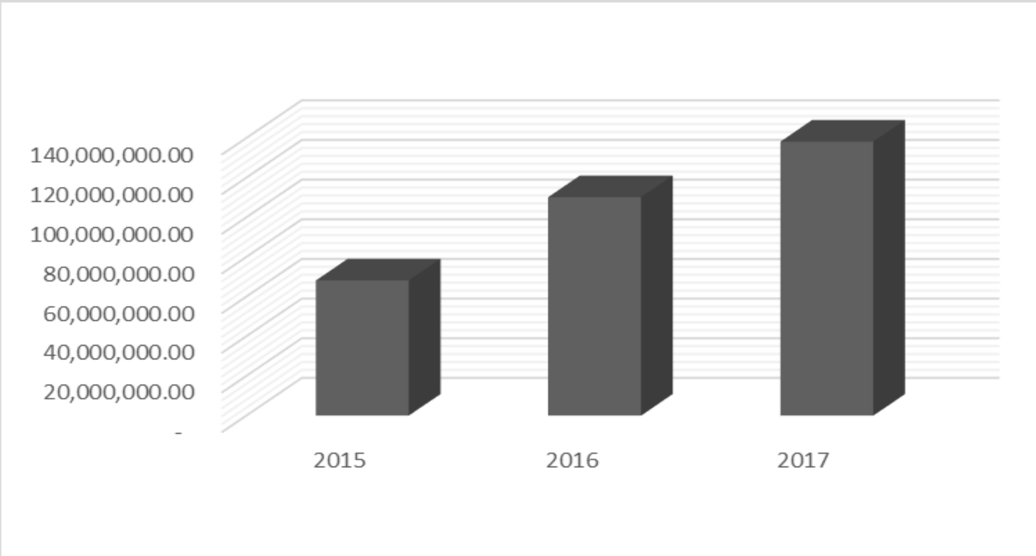
Romania is both a cyber-security incidents-generating country and a proxy (transit) for attackers outside of the national space through the use of vulnerable or compromised computer systems that are part of the national cyberspace. It is concerning as to find that the vulnerabilities' sources remain the same year after year: not updated or unsecured systems, inappropriate configurations etc. (CERT.RO, 2017).

Which are the causes? Without detailed data, we can presume as possible causes: insufficient budgets for information security issues, insufficient security specialists (this being a global issue), poor or insufficient training of the specialists and scarce knowledge information security for specialists' in regard with the specificity of the domain their company is operating in, inappropriate organizations' culture on information security risks etc.

However, in Romania there are initiatives to develop cybersecurity management system. In 2017, European Commission adopted a recommendation, blueprint. This proposal aims to agree on how to exchange information and manage major cyber security incidents at European level. Subsequently, in June 2018, Member States called for the establishment of this European crisis management cooperation framework, which also takes into account the national situation in each Member State.

Cyber threats and vulnerabilities to the national cyberspace continue to diversify, as evidenced by the fact that starting with 2016 CERT.RO introduced new types of alerts. The following analysis is based on CERT.RO public reports and is reflecting the number and type of alerts encountered. The author conducted a comparative analysis of the top ten incidents registered by CERT.RO in 2016 and 2017. The dynamic of cybersecurity alerts between 2015 and 2017 is revealing for the Romanian cyberspace exposure (see figure 2).

Figure 2. **Number of cyber security alerts during 2015-2017**

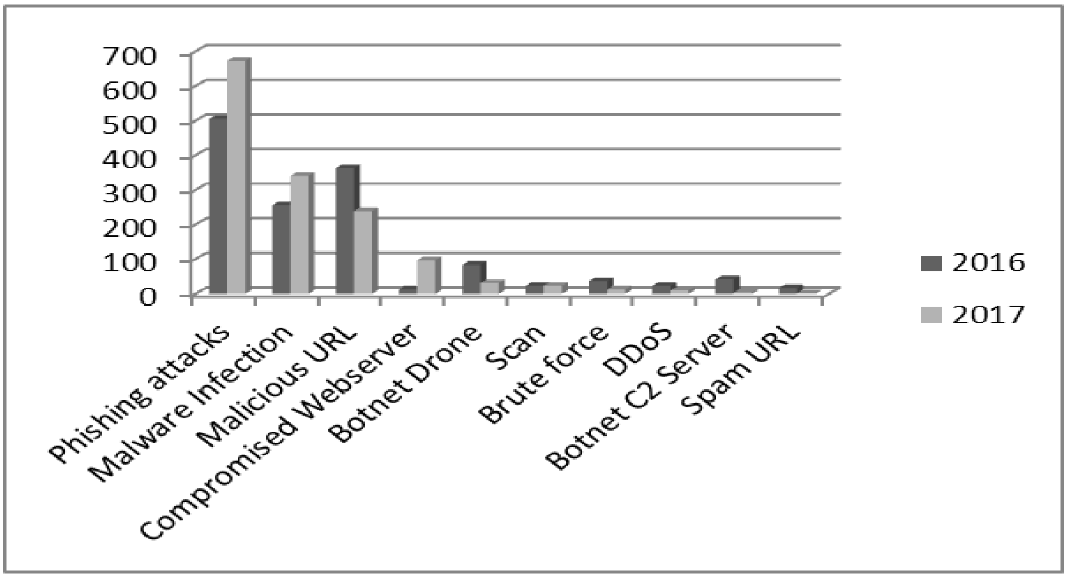


(Source: Author's projection based on CERT.RO reports*)*

There is a concerning increase of the compromised web servers (13 incidents in 2016 compared with 97 reported incidents in 2017) and significant increase of phishing attacks and malware infections (an increasing rate of 33%). Even if the number of incidents consisting in web-servers compromise is not significant, the increase rate emphasizes the shift in the hackers' attacks, their focus being web servers. This is more concerning if we take into consideration the social and industries domains asked to notify the incidents as NIS Directive requirement (Directive (EU) 2016/1148 of the European Parliament and of the Council concerning measures for a high common level of security of network and information systems across the Union): energy, banking, health, water, transports, financial market infrastructure and digital infrastructure.

It is relevant to mention that in 2016, Kaspersky analysis on web attacks (ranked by percentage of targeted users) places Romania in the countries' group of medium risk with a percentage of 27.4% (Kaspersky, 2016). CERT.RO conclude on best security threats in period 2015-2017, where for phishing attacks were registered 673 alerts in 2017, compared to 505 alerts in 2016. A detailed capture of cybersecurity alerts for both years is presented below.

Figure 3. **Evolution and cyber security alerts during 2016-2017**



(Source: Author's projection based on CERT.RO reports*)*

Phishing and malware attacks continue to remain the main security issues. Malware registers an important increase in complexity and sophistication. Analysing types of malware specific for Romanian cyberspace it can be identified as preferred targets the Windows systems and the shift to Android OS (see Ghost-Push attacks). This is why the government information security agency insist on the urgent update of Windows systems both in the case of companies and individuals. The year 2017 has brought a premiere: the first attack on a Romanian hospital. The WannaCrypt "wave" affected a Romanian hospital, an automobile manufacturing plant (making non-functional same as the robotized production lines) and Ministry of Foreign Affairs. The Kaspersky analysis of WannaCry ransomware attacks places Romania on the 9th place in the top of the first 20. The 2017 Kaspersky global analysis places Romania in the group with a medium level of infection risk.

According to the Global Cybersecurity Index 2017, Romania has placed the group of maturing stage countries demonstrating developed complex commitments and engagement in cybersecurity programmes and initiatives (Global Cybersecurity Index, 2017). From the European Region, Romania scored 0.585 for the 42nd global rank, following ITU Member States Global Cybersecurity Commitment Score by Region. Compared to the European Region, Romania's score is quite good considering the extensive global rank (5-165) and range of score (0.040 and 0.846, assigned to the lowest global rank correlated to the highest commitment). According to CGI evaluation, Romania presents red flags are in the following areas: standards for organizations and professionals, cybersecurity metrics, cybersecurity good practices, R&D programs, multilateral agreements. Good results are registered in: areas like cybercriminal legislation, National CERT issues, child online protection, standardization bodies, public awareness campaigns, public-private relationships (GCI, 2017).

5. Conclusions

It is clear that both volume and scale of cyberattacks will continue to develop, in terms of sophistication and complexity. The current paper is an attempt in reviewing and discussing the most frequent security threats in the national and international context. This study opens the gate for further research in the cybersecurity context. During this paper were discussed top security threats that technology impact brings to the world. Along with well-known advantages (efficiency, capacity to work high volumes), there are also disadvantages (critical infrastructure from the Internet, cyberattacks, system vulnerabilities).

Cyberattacks evolution seems to not stop and continue to harm companies' infrastructure and to steal valuable information. The analysis performed reveal the alert evolution regarding the number and the persistence of cyber alerts. This evidence suggests the exposure of financial and non-financial information, vulnerable to this new, challenging and technological cyber context. As cybercrime rise in complexity, managers themselves argue the easiness for attackers to quick access to sensitive information. Companies are seeking to align with the new digitalized world, adopting different business strategies. One effective defence is to be one step forward and to do it faster than the dark side. In this way, hackers would be surprised to interact with the already-know companies' plan. In line with this strategy, employees have to always be prepared and well trained.

Employees' errors and unintentional actions are placed on top security incidents following the results of this paper. It constitutes an important aspect to rethink the way employees interact with the system and to develop more secured working areas. User thinking has to be managed and stimulated accordingly with proactive training. As a result, this action will increase employees' awareness and will intensify their focus on R&D in cybersecurity.

As being mentioned, this article presented evidence on top cybersecurity attacks based on cybersecurity reports issued by Big Four companies and CERT.RO, from both international and national perspective. This paper reveals the alert evolution of an extensive period of time (2013-2018) of the most encountered cyberattacks. Also, the author aims to accentuate the severe impact of security information which tends to be neglected by both companies and employees, and cyber vulnerabilities which range from limited impact (DDos attacks), manipulation and stealing of data to total impact, concluding into catastrophic damage.

The author is emphasizing the most frequent security incidents, such as targeted attacks/APT attacks, malware and ransomware attacks, sabotage by external actors, hardware failure, employee errors, issues which seem to persist and progressively harm companies' systems. This analysis has been performed for 2017 and 2018, based on Kaspersky Lab cybersecurity reports. Looking for a longer period (2013-2018), Big Four companies seem to conclude on the most encountered cyberattacks, namely malware and ransomware, following the analysis of Kaspersky cyber reports.

Those cyberattacks constantly increased in sophistication and complexity. The most common delivery method is through the attachment sent to the victim. Once the victim is downloading and opening it, the company is badly affected. During 2017-2018, a dramatic increase in the number of malware and ransomware attacks have been evidenced. Following the international perspective (i.e. Big Four reports), the most confronted cyber threats are introduced by: malware, ransomware, phishing, denial of service, compromised web servers. The malware was presented by international and national companies, being reported as one of the most powerful security issues. Another similarity between global and local perspective is the infection with viruses, phishing and ransomware attacks. Those security issues are well-known as the most powerful and the most frequently lethal attack combinations.

Through this paper, the author aims to underline the high cost which a cyberattack is causing to the targeted companies. However, the penetration rate of cyberattacks in the companies' systems registers from year to year longer attacks. This issue is perceived by many experts a big data analytic problem. Under the detailed analysis and synthesis performed, is underlined the critical situation which exists in the whole world because of powerful technologies, as long there are also vulnerabilities incurred in its evolution.

Moving to the local view, based on CERT.RO security reports, the numbers of cybersecurity alerts evolve in terms of ambiguous impacts and complexity. From the national perspective, Romania is considered an incident generating country and transit for cyber attackers, being placed in the group of the maturing stage where have been continuously developed commitments and cybersecurity initiatives. Through the results of this paper, I evidenced top cyber threats in Romania, namely: malware, ransomware, malicious URL, compromised web server. Those cyber threats could be prevented to occur. Companies must add additional layers of security since it takes on average 31 days to manage a cyberattack. Recommended for companies would be to reduce this time; in this way, the damage will be highly reduced.

A better way to frame cybersecurity might be to connect it to values other than framing cybersecurity alone. This strategy would avoid misunderstanding and ambiguity on safety in cyberspace. In line with security measures, employee errors represent another worry which must be handled by companies. This finding is suggested by both international and national perspectives. Whether employee errors or unintentional actions could be prevented, there would not be reported a high percentage in the evolution of cybersecurity incidents.

More, to personalize the messages for easy recognition is vital for potential attacks. This action has profound implications in taking the right measures against cybercrime. It is impossible to predict the future impacts of cyberattacks taking into account individuals' behaviour in a cyber-system. Companies might consider formal validation and testing, along with perimeter defence to better secure against cyberattacks. Following this approach, I consider that an attack can be replicated and blocked with the help of a predefined set of methods.

In conclusion, cyber attackers are targeting big data warehouses and are looking at big data scale volumes, a fact which has been observed through this paper since data breach costs are so high, following the redemption the hacker asked. For sure, technology brings much faster speeds, but much vulnerability. Information technology security implies individuals and systems and concludes on the uncertainty regarding the future of a possible impact.

However, one thing is certain; companies have to work both hard and smart to resist the impact of severe attacks. Organizations' reputation is protected when all staff is adequately trained and well informed about security risks, business leaders are able to detect cyber-attacks and be ready to react when the breach occurs. The current state of preparedness must be compared with the future required state of preparedness. This rigorous and objective evaluation will facilitate the right response, necessary for the improvements and missing gaps.

The purpose of this study was to stimulate the attention to the cybersecurity field and expand transparency for this topic. The author is planning to continue this research, by adding new future tendencies in cybersecurity, evolution and insights that belong to the next period. Future research may adopt the analysis of other states, involved in security attacks, where the situation is really intense, such as Mauritius, United States of America, Oman, Singapore, Malaysia, Estonia, etc. By doing that, new cybersecurity threats and prevention solutions would be discovered, analysed and discussed in order to provide additional security knowledge insights.

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