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FOREWARD

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 9-10 June 2021. This year's very unusual circumstances given by the COVID19 pandemic did not prevent participants from engaging in very fruitful conversations about research and teaching practices.

During the conference, we organized two plenary panels, animated by esteemed international colleagues from Canada, Poland and the United Kingdom, as well as the ACCA Southeastern Europe office. Eight parallel sessions completed the program, for 30 papers that were presented. 72 participants from nine countries registered and contributed to the debates in either panels or sessions.

Preceding the AMIS 2021 conference, IAAER and the Association of Chartered Certified Accountants (ACCA) have co-organized, on 7-8 June 2021, another edition of their traditional Accounting Scholars Research Workshop. 11 presenters and 10 other young researchers from Poland and Romania benefited from the presentations and feedback offered by nine established faculty. These 11 accounting academics have also presented their projects to these very accomplished faculty and received timely and constructive feedback on how to improve their work with a view to make it publishable by international journals.

In the end, I will also thank our team: Nadia Albu, Raluca Guşe and Dragoş Mangiuc. They have volunteered their time to this important and traditional event in Central and Eastern Europe.

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

Professor Cătălin Albu
Conference Chair

SECTION 1

Ethics Education in Accounting – Reasons, History, and Instruments – A Literature Review

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Abstract: *What are the most important aspects and variables influencing ethics education in accounting, its tools, and their effectiveness and how could the latter be improved? To give the reader an idea of its context and evolution, I have also included a brief history of ethics education around the world. Fortunately, there is a plethora of existing research of which the most useful I found to be other literature review articles: Bampton and Cowton (2013), Apostolou* et al. *(2019), Nguyen and Dellaportas (2020). This literature review is the first step to then determine the current state of ethics education in the Romanian profession, both by academia and by professional bodies, in comparison with international peers. This can then serve as a map and / or improvement tool for the ethics education of Romanian professionals and will be the first-of-its kind in-depth analysis of how ethics is taught in the Romanian accounting profession. Articles found in reputable journals having as topic accounting ethics education were taken into consideration, the only publishing language being English. The information helped structure and further develop the initial research questions. The main objective of my research is to give those responsible of educating professional accountants in the field of ethics a toolkit to improve their interventions and impact.*

Keywords: *Accounting, ethics, education, effectiveness.*

1. Introduction

"*While Pacioli believed profit was necessary to a successful business, translations of his writing suggest that profit was actually a byproduct of a successful business. Pacioli firmly believed that business had a social mission and the business person (merchant) had a responsibility to contribute to the public interest*." (Coate and Mitschow, 2018)
To me this means that from the very beginning of the accountancy profession, with the publishing of the Summa in 1494, Luca Pacioli firmly set the ethical standards to which profit, an accounting product, should be linked.

Following that, ethics has since been a constant in the accountancy profession, being more or less in the spotlight, depending on society's awareness, economic context and attitudes towards accountants. However, ethics education for business did not catch up until early 20th century and it seems that it is a controversial subject as regards who should teach it, what should be taught as well as what its impact is. Also, it is not as present as it should be in either academia (Miller and Shawver, 2018) or professional bodies (Fleming, 1996; Spalding, 2019).

Throughout the years, interest and volume of ethics education research increased (Nguyen and Dellaportas, 2020), however the quality and prevalence of business ethics

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education itself did not seem to keep pace, in US-based research (Fisher *et al*., 2007 quoted by Cooper *et al*., 2008; Miller and Becker 2011) or Europe, namely Italy (Caglio and Cameran, 2017). This refers to formal activities undertaken by all stakeholders that are or should be involved in ethics education (academia, professional bodies and employers).Caglio and Cameran, 2017 were questioning whether firms sufficiently address integrity in their training programs. The cooperation between these actors who should be involved in educating the ethics of professional accountants seem to be lacking as well; Chelariu *et al*. (2014) have listed „improving the relationship between the university and the professional bodies" as method to improve ethics education found through their research.

What seemed to be the universally accepted hypothesis were that accountants must be ethical (albeit for various reasons: public accountability, impact of accounting scandals, globalization) and that ethics can indeed be taught, since its methods and impacts have been widely researched. Some discerning views regarding the impact of ethics education on specifically moral development and unethical behavior were also found (Ponemon, 1993).

Ethics and integrity are **defining traits of the professional accountant** (Fatt, 1995) but ethics is **an elusive concept** from its meaning, to how we engrain it, to the fact that it evolves with the economic context and even across generations (Caglio and Cameran, 2017). The way it is approached also varies: extrinsically (regulations) and intrinsically (self-regulation and modelling the right behavior) (Chelariu *et al.*, 2014). The versatility and elusiveness further increase its research interest, besides the reason that it is prevalent in the everyday activity of the accountant. It is no surprise that ethics is a common research topic in accountancy. When searching only one of the known publishing databases (Elsevier) for keywords: "accounting" and "ethics" on 08.01.2020, the return results were 1,589 webpages 3,997 books 263 journals, in total 5849 references.

My interest in the accountancy profession was born since before I joined one of the best accounting high schools in Bucharest, some 25 years ago. My education and then career have since been intertwined with accounting and with national and international professional associations. The first ethics scandals in the modern profession (Enron and then Worldcom) caught my eyes when I was working for the Romanian national body of accountants and I was fascinated by the contrast between what was written in the ethical manuals and what was happening.

It was really engaging for me to study these research papers which specifically addressed the issue of ethics education in accounting, mainly from reputable journals. If articles only addressed ethics education as a tangent (for instance having as main subject whistleblowers), they were eliminated from this research.

Sections of this paper and how they were organized were influenced by the literature review I carried. The paper ended up including more sections and more variables than I had started with, for instance during my research I added the section regarding the question whether ethics can be taught, the section on ethics education history and the approach to analyzing impact of ethics education by career stage (Fiolleau and Kaplan, 2017).

This brief literature review of what I found to be the main aspects in ethics education in accounting has barely started to scratch the surface of what is a vast area of existing research. However, it was very useful in shaping the structure and variables of my future research, which is a first in the landscape of Romanian accounting ethics education. For the reader, should they be interested, this article provides some ideas to follow-up and further reading to do as well as a list of several instruments used to deliver ethics education from the many papers I researched.

I hope to give the overview of the main aspects of ethics in accounting – its **value for professional accountants** and **how accountants have been, are and could be taught ethics.**

2. Research questions and objectives of the review

Ethics, professional judgment and the morals of the professional should be a steady lighthouse in a storm of constant change and uncertainty and a constant proof of the unique value-added that humans can bring to business.

Consequently, the following questions are a very important starting point in order to lay the foundations of a solid research:

- **Why should accountants be ethical?**
- **Can ethics be taught?**
- **What is the evolution of accounting education and the current status?**
- **What are the instruments for teaching ethics, their effectiveness and how can they be improved?**

This article will provide a high-level overview of how previous researchers have attempted to answer them. In my future research, based on findings from the current one, I have or will analyze the following research questions:

- What is the degree to which Romanian faculties include ethics notions in their curricula? (qualitative and quantitative research)
- What interventions (or tools) in ethics' education are more effective? When in the professional life of the accountant?
- How do professional bodies make sure that their members have a minimum level of ethics?

Finding the answer to these questions will give an overview of how ethics is taught to future and current professionals and is important because:

- By synthetizing information on these topics from research published in top specialized journals around the world I offer a wide view on them and starting basis for other researchers and practicing professionals interested in them, to improve or map their ethics training against their peers.
- It helps enhance my vocabulary and widen my perspective for future research so that it is comprehensive and useful in the Romanian environment, where such a research on ethics education has never been undertaken to the best of my knowledge.
- It will give the general public a reassurance of the degree of ethics education that their professional accountant has been through and what they still must comply with (ethics code).

While the focus of my research is on educating ethics, I considered it fit to take one step back and first determine why ethics is important for accountants, in order to lay the grounds of why we should study it. I was fortunate enough to find a plethora of existing research trying to address the following questions:

- Is ethics something that is central to the professional accountant? (Fatt, 1995)
- How is ethics enforced through different codes? (Jakubowski *et al*., 2002)
- Can ethics be taught? (Kerr and Smith,1995; Kaufmann, 2018)
- How can ethics be taught? (Kaufmann, 2018; Davidson, 2011; Cooper *et al*., 2008 quoting: Menzel, 1997; Thorne *et al*., 1999; Mathison, 1988)
- How can we improve ethics education? (Chelariu *et al.*, 2014, table)

By first **undergoing this extensive literature review** it has helped me better structure my thinking regarding the most important questions in the field of ethics, it has created a timeline of implementing ethics education in accounting and it has gathered in one place a couple of papers proposing better ways to teach ethics. The format of this article evolved as I uncovered more aspects of ethics in accounting. For example, the sections on whether ethics can be taught, on ethics education history or the idea of analyzing impact of ethics education by career stage (Fiolleau and Kaplan, 2017) were not included in my initial planning which aimed to only uncover ways of teaching ethics to accountants and their general impact, without considering any variable.

3. Research methodology

For the **purposes of this literature review,** I have accessed ResearchGate, Springer, Emerald and several other online databases. Within these, I have searched papers using these three key words: “accounting”, “ethics”, and “education”.

I then chose mainly the papers that had ethics education in the accountancy profession at their core and attempted to only choose those published in reputable journals of which the Journal of Business Ethics was the one that appeared most often. Other journals which I found and that published papers on accounting ethics education are: Journal of Theoretical Accounting Research, Accounting History, Accounting, Auditing & Accountability Journal, Global Perspectives on Accounting Education, Journal of Accounting Education.

I have analyzed the articles based on how well they replied to my initial questions but also based on how many other questions and angles they uncovered around my initial, basic, structure. I found it very interesting how many authors had their curiosity further stirred by their research and how many other open questions they left at the end of their papers.

My approach to analyzing the research articles was reading them or their abstract with a view to see how they answer my initial questions. If they had not, they were not included in this paper. I read the ones that were left after this initial analysis more thoroughly, extracted their main ideas in a separate document (starting hypothesis, research methodology and conclusion) and then put these ideas in a readable, and hopefully useful, format for other researchers or interested parties.

My endeavor was helped greatly by other literature review articles: Bampton and Cowton, (2013), Apostolou *et al*. (2019), Nguyen and Dellaportas (2020).

For the purpose of transparency, I also list some of the limitations and difficulties I faced during this research. Contrary to expectations, my main difficulty was the large volume of papers I had to browse through as the area is extensively researched in many of its subdomains. My difficulty was choosing what to focus on and what to give up. Despite the level of research, there is still not consensus or clarity at least as to the impact and effectiveness of ethics interventions for instance.

One main limitation I found was that all papers I researched originated from the academic environment and as a future step, I could look for reports on ethics issued by accounting practices, the likes of Big 4 for instance.

Another limitation, similar to Bampton and Cowton (2013) was that the only sources of articles were from English language journals. Most likely, when I will start analyzing curricula of professional associations, one of which I intend to be French, I will expand the geographical areas of my research.

4. Literature review

Why should accountants be ethical?

Many authors have emphasized the importance of ethics teaching starting from the impact of international scandals (Davidson, 2011). Some have mentioned also globalization (Boyce, 2008 quoted by Chelariu *et al*., 2014) and of course, the reliance that the public has on accounting information (Fatt, 1995) as a source for the need that accountants have to be ethical.

Therefore, while the consensus is that accountants have to be ethical, different researchers place different emphasis on the underlying motives why they should be so.

Also, closely connected and somehow clarifying the "Why?" question researchers have approached questions such as:

In which circumstances should accountants be ethical?

The short answer is: all the time. In the detail provided in one of the disciplinary committee sanctions issued by the Association of Chartered Certified Accountants, ACCA (5 September 2019) we see that "professionals' actions out with their calling can impact on the reputation of the profession... (even if that action)... was unrelated to his profession". ACCA's Disciplinary Committee determines, based on ACCA's Code of Ethics and Conduct that "serious offending would undermine the standing of the profession in the eyes of the public, and was therefore discreditable to the accountancy profession".

In this vein, connected activities (or support activities as they are called in certain public practices) undertaken by professional accountants have to be ethical as well. They have reached such an importance for accountants to the extent that certain researchers have studied them separately: Mălăescu and Avram (2018) "Ethical Challenges in Marketing of Accounting Services: The Case of Romania".

How is the ethics of accountants assimilated?

There are two approaches that can be taken as to how an individual engrains ethics principles in their professional decisions: extrinsic and intrinsic (Chelariu *et al.*, 2014). Extrinsic consists of a variety of national or professional formal norms (laws, ethical codes, formal education). Intrinsic is innate to the individual (can be influenced by providing examples of rightful behavior to students, by taking into account the moral stance of the accounting student, by teaching the student to "imagine" what kind of a person they would become if one or another course of action is taken (Young and Annisette, 2009)

Can ethics be taught?

There are numerous papers asking whether ethics can and should be taught as I found in my research. The answer was mostly yes, and some researchers even called for questions to be focused on **what** works in ethics education and not to just ask whether ethics education in accounting works or not (Bampton and Maclagan 2005 quoted in Bampton and Cowton, 2013).

Some authors started from the premise that instead of „building fences" to restrict unethical behavior (i.e. reinforce regulation) we should encourage intrinsic ethical behavior (i.e. teaching ethics) and proceed to make an analysis of intrinsic supporting contexts like religion or culture (Kaufmann L. 2018). We have some local researchers as well clearly stating that it is mandatory for future professionals to have an education in ethics, which should be outlined in faculties' curricula. Mălăescu (2018) started the question on educating ethics by briefly analyzing its status quo in a few Romanian Accounting and Management Information Systems faculties and determining that two of the five major universities in Romania had no ethics course, two had only one and only one university had two courses of ethics. This is in stark contrast to what was happening three years later, when the first detailed analysis on the prevalence of ethics courses in Romanian faculties, members of AFER, was carried out by myself and Răzvan Hoinaru and determined that more than 90% had an Ethics course.

There is an important stream of literature on how ethics is reflected in university curricula, professional conduct codes (Jakubowski *et al.*, 2002) in curricula of universities accredited by professional bodies in one or a couple of countries (West and Buckby, 2020).

In addition, professional associations like the Association to Advance Collegiate Schools of Business (AACSB) International called for the need to teach ethics (AACSB International 2004).

This paper refers entirely to ethics teaching not legislation implementing and the premise of my research is that ethics can be taught, and I choose to focus on its evolution and the effectiveness of instruments of teaching it (Davidson, 2011).

The matter gets even more interesting as researchers also attempt to answer:

- Who should teach ethics (as in Fleming 1996 who believes that it is not only universities that should have responsibility for teaching ethics)?
- How do ethics education objectives map to the IFAC Ethics Education Framework, based on Rest's four-component model (Miller, 2014)?
- How can ethics be taught better – as a standalone course or included throughout other courses?
- How can we improve on instruments used to teach ethics (and this is a separate sub-title in this paper with its respective literature review)?

History and current adoption of ethics education

The period when formal codes of professional conduct for accountants were first issued in early twentieth century (Jakubowski, 2002) coincides with the start of ethics for business courses (Lovell, 2004 quoted by Cooper *et al.*, 2008). Nguyen, (2020) found in a very comprehensive historical literature review of accounting ethics education that it was not until 1972 that the first article on the topic was published. Incidentally, until the 80s it also remained the only article published in the decade.

In 2020 Nguyen and Dellaportas issued an extensive paper with the University of Nottingham: *Accounting ethics education research: A historical review of the literature*. They have performed a literature review of how ethics education in accounting is featured in academic research journals, analyzing 255 articles in 88 journals. They found that since that first article the number of articles on ethics education in accounting increased every decade, with a particular increase of interest in the topic in the 1990s where the authors found 52 articles, almost nine times compared to the previous decade and then in the 2000s the number almost doubled with 90 articles found. Since then the number was quite stable with 106 articles in the 2010s.

There are even researchers who attempt a comprehensive yearly literature review of accounting education research, including Ethics subjects (Apostolou, 2019).

However, while interest in research increased and while legislative reforms reinforcing the need for additional ethics education were introduced, in 2007 business ethics courses in the US seemed to be decreasing (Fisher *et al.*, 2007 quoted by Cooper *et al.*, 2008).

The situation persisted in 2011 when Miller and Becker found that accounting programs in 97 US universities did not cover fundamental ethics topics (terminology or definitions) in their curricula.

Analyzing the history of how ethics is taught to professional accountants, and when, also depends a lot on the legislative context. Fleming (1996) noted for the UK, most student accountants (of professional associations) do not have an accountancy degree (from university). This can be extrapolated to several legislations where the legislation does not require people joining an accountancy professional body to have graduated an accounting or even economic university. Hence, studies regarding the degree to which professional accountants were taught ethics during their accounting academic degree might not be as relevant as most of their ethical training might have come from their professional associations.

In 1996 though, Fleming was saying that professional associations are only including ethics in their curricula as a formality and that in general "*accountants are consequently ill-prepared to face ethical dilemmas*" and, "*at best, no more ethically aware than average*".

A couple of accounting scandals later and the issuing of the IFAC 2006 "Approaches to the Development and Maintenance of Professional Values, Ethics and Attitudes in Accounting Education Programs", professional bodies have a very visible discourse about ethics. ACCA (www.accaglobal.com) has over 11,000 mentions of ethics (research reports, articles, news) on their website. AICPA (www.aicpa.org) has over 600 mentions of ethics. IFAC (www.ifac.org) (with close to 1500 mentions) is constantly publishing research and updates on ethics on their website, the most important one issued recently being the revision of the International Code of Ethics for Professional Accountants effective as of June 15, 2019.

Following my analysis of the correlations in Table 5 of Miller and Shawer (2018), I could draw the safe conclusions that educators in UK academia think that ethics is "a must" in their accounting modules, regardless whether formal requirements of accreditation ask for it. A downside from this was that a possible reason for this might also be that educators did not believe that their students get enough postgraduate education in ethics (from professional associations), and that is despite the advances that professional associations have taken in the field of showcasing ethics education in the past years.

Ethics education tools and their effectiveness

The purpose of ethics education in accounting is to make sure that professional accountants recognize an ethics dilemma when they are exposed to it and that they make the right decision when they must. While another equally important way to achieve this is through regulation, the purpose of this paper is to only address the education route, the tools that are used to teach ethics and their effectiveness in this subtitle.

We know we must expose students to ethical concepts and applications, to reinforce existing values, teach ethical reasoning and prepare them for potential challenges (Menzel, 1997 quoted by Cooper *et al.*, 2008) but what are those practical interventions?

To structure the approach that ethics education has, it is important to understand for what we are asking the student to use that tool. In Rest's (1986) Four-Component Model of moral judgment and behavior (moral sensitivity, judgement, character and motivation), there is a clear delimitation of the stages of an ethical dilemma and how a professional could act. That professional should first be able to recognize that (s)he is facing an ethical dilemma, then be able to see what potential course of action could be taken, choose a course of action and then have the courage to act on that action. Hence, teaching interventions should happen in order to inform a professional accountant in all these stages.

While researching **ethics teaching tools**, I found the following:

- **The case-based method** is one of the most popular (Winston 2000; Thorne *et al*., 1999 quoted by Cooper *et al*., 2008) but researchers mention also:

- **Ethics textbooks** (with the downside that they are too philosophical and not applicable to junior students) (Mathison, 1988 quoted by Cooper *et al*., 2008)
- **Lectures** (Davidson, 2011)
- **Applied ethics workshops** (Kaufmann, 2018)
- **Homework** (Davidson, 2011)
- **Reflective** learning (personal journal, work logs) (Limijaya, 2019)
- Sharing by **guest speaker** (Limijaya, 2019)
- **Literature and other forms of narrative** material (plays, film and short stories) (Young and Annisette 2009)
- **Learning by experience –** students being involved in projects with impact on their lives or lives of others (Huber and Mafi, 2013 quoted by Chelariu *et al*., 2014)
- **Students becoming content creators** (Kaciuba 2012 quoted by Chelariu *et al.*, 2014)

I found it surprising that Limijaya (2019), who has done an extensive research about tools used in ethics teaching, has mentioned reflective learning as one of the 15 tools however did not consult Young and Annisette (2009). The latter make the case specifically about imagination and reflection in ethics with the individual having to consider themselves an unfinished project. Hence the imagination and ethical reflection, in their view, with the help of the literature, will support expand professionals' set of experiences and realize any ethical dilemma can fundamentally alter their lives. I find this approach very encompassing and global, helping to integrate ethical decisions in the wider picture of someone's life. Something similar happened through the project Philanthropy experiment in the research of Huber and Mafi (2013) (quoted by Chelariu *et al.,* 2014) where students realized the implications of ethical decisions on a wider, real, community, the one they live in.

Limijaya (2019) does not mention Mintz (2006), which touches precisely reflective learning in accounting. The reason why I am mentioning these lacks of an excellent article is not to discredit it but to underline, once again, the limitations of research and literature reviews as no researchers are going to be able to cover all literature in the field (not even the one in English language).

I am also making these points to underline that reflective learning is an important part of ethics assimilation and there are whole bodies of literature approaching it.

Having listed some of the ethics teaching tools currently employed, the next step is to analyze their **effectiveness and how they could be improved.**

There is a debate of who is the main responsible of ethics teaching in the professionals' life. Do they obtain their ethical compass in the family, in the faculty or within the professional body? Most of the research papers I studied have put an undue emphasis on academia, although if we talk about professionals, a big part of the responsibility for teaching ethics should be placed on the professional body as well. This is especially in the context of some jurisdictions not requiring an accounting or economic degree to join the accounting profession.

In this context, a very important determinant of the effectiveness of teaching ethics in accounting and how we can improve it should be regarding ***WHO*** the teachers are. A first idea would be to improve the **cooperation between academia and professional bodies.**

I found Table 1 in the Chelariu *et al*. (2014) article interesting as it lists 27 methods of improving accounting ethics education in the profession and how many times they appear in the research articles they studied. While it talks about the profession, the table shows a strong focus on what the academia should do. Only two out of the 40 occurrences of proposals to improve methods are referring to the profession: involving professors in the accounting profession and improving the relationship between the university and the professional bodies.

Interestingly, and in the same vein of not utilizing professional bodies enough and their resources in the academia, only two of the articles I analyzed for this paper (Davidson, 2011 and Cooper *et al*., 2008) mentioned the 2006 IFAC Ethics Education Toolkit (EET) which includes sample course outlines, teaching notes, case studies, video clips of ethical dilemmas and a database of ethics education resource materials. Moreover, some authors (West, 2017) strongly critiqued the IFAC approach as unsatisfactory, in both a practical and theoretical sense (raising issues such as it being a negative approach and only dealing with the first half of Rest's four component model).

However some national bodies as recent as 2015 (AICPA – as per the Spalding, 2019 paper) were not even complying with the minimum requirements of the IFAC standard and had just began tentative steps to move from an exclusively rules-based regime to both rules and principles in ethics. The authors note though that the principles introduced by AICPA are not on "authoritative parity with its rules".

In Table 5 of Miller and Shawver (2018), I also analyzed the answers provided by members of academia to the questions "*I believe students get all the ethics education they need after they graduate*" and "*I believe we should teach ethics in accounting courses*". It seems that responding professors do not have confidence that professional bodies are giving accountants enough ethics education and consequently feel more responsible themselves.

On the other hand, compared to only two articles mentioning the IFAC EET, eight articles from the ones which I studied mentioned the AACSB (The Association to Advance Collegiate Schools of Business) ethics task force report (Shawver, 2017; Miller, 2011; Miller, 2014; Miller, 2018; Apostolou, 2019; Limijaya, 2019; Fiolleau, 2017; West, 2018) which to me proves another inward look of academia. Even so, in practice, not so many accounting programs in US appeared to include all the material recommended by AACSB (Miller and Becker 2011, Table 4).

Another means of improving ethics education, and keeping in the same domain of WHO should teach, should be improving the **cooperation between academia and employers**. Some authors (Caglio and Cameran, 2017) state that accounting companies should concentrate more on advertising the integrity, ethics and responsibilities that accountants have since it is in their best interest to create a good image for the profession so that they have a sustainable pipeline of future employees.

Another determinant of the effectiveness of teaching ethics in accounting and how we can improve it, should be regarding ***AT WHAT STAGE OF THEIR CAREER*** accountants are when the ethics intervention is taking place. Fiolleau and Kaplan 2017 had researched ethical sensitivity of accounting students compared to practicing industry accountants. Their working hypothesis, which they disproved, was that practicing accountants would be less ethically sensitive than accounting students. Their initial reasoning was that practicing accountants are more exposed to making monetary-based decisions while accounting students, not having such responsibilities and with more exposure to repeated ethics interventions will be more inclined to make the ethical choice, at least in a scenario.

Another determinant of the effectiveness of teaching ethics in accounting is the ***MOMENT AND TIMELINE OF THE INTERVENTION.*** That is, whether the intervention is one-off or contained (a self-standing course such as the one in Miller *et al*., 2014) or engrained throughout the accounting curricula (Shawver, 2017) and then in the professional life of the accountant. How many times it is repeated is also an important and related question.

Studying the impact of any ethics intervention (including something more straightforward like usefulness of ethics codes – Cowton, 2009) requires careful consideration of several variables in context and there are studies that attempt to determine the effectiveness of such intervention. For instance, after past studies have mixed findings of whether ethics interventions have positive impacts or not (studies quoted by Shawver, 2017). Shawver (2017) has attempted in an article published in 2017 titled *Moral Intensity Revisited: Measuring the Benefit of Accounting Ethics Interventions* to measure moral intensity to see whether an ethics intervention was effective. Her findings demonstrated the benefits of such intervention and gave encouragement and motives to integrate ethics in accounting courses.

5. Conclusions and next steps

Research in ethics education is extremely rich and versatile. While doing this research I found new approaches which I found interesting and further raised my curiosity about the subject. I hope this is the case with the reader as well.

This research has also **turned around some of my misconceptions**. I thought ethics should be a standalone course. However, it works best if it is engrained throughout the curricula (Dellaportas, 2006 who suggests that interventions of less than three weeks are not as effective; Miller, 2014 who also advocates for the incremental benefits of a self-standing course on top of ethics knowledge integrated in other courses, similar to Armstrong (1993), quoted in Shawver (2017)).

I thought that all national member bodies of IFAC respected their minimum requirements for ethics, but I found out that even some of its bigger member bodies such as AICPA fail in this respect (Spalding, 2019).

I thought that there is a good and fruitful cooperation between academia and professional bodies in terms of ethics curricula. However, from research I found that academia is not confident that, after graduating, their students are receiving the appropriate ethics training and also they are not putting hope into cooperation with the professional bodies (own remarks from Chelariu *et al*., 2014 table).

This research has **widened my perspectives** (in terms of the variety of angles we can approach ethics' interventions from – who teaches it, when, where, how, with what tools, how often) and stirred my curiosity to further look into the subject.

However widened, my knowledge in this field is just developing and in order to provide as clear a view on how academics can map and / or redesign their curricula and ethics education interventions in Romania in order to enhance their effectiveness, further in-depth research is needed. I am considering the whole range of educators in my research: professors, mentors, whistleblowers and professional associations so that each can take away something from it. When it is completed, the entirety of my research might provide clarity to the public on what ethics education path their accounting professional went through and help strengthen their trust in their ethical approach.

Otherwise, as Miller and Sahwver (2018) noted, following a literature review, authors have differing opinions regarding the **impact of ethics interventions on moral development**. This then creates confusion on what educators should do – what instruments they should use to teach ethics and for what length of time.

Shawver (2017) published the first study attempting to measure the moral intensity change following a prescribed ethics intervention after Miller *et al*. (2014) published the first study, which attempted to measure the benefits of a complete ethics framework rather than benefits from just some types of content. While in both papers authors mention that prior studies on impact of the ethics interventions have been carried out, there is clearly a lot of space to further clarify the effectiveness and benefits different types of interventions bring.

It was paramount to understand all these questions from previous researches to then be able to determine how several selected regulated accountancy bodies are teaching ethics, including how they influence the coverage of ethics in UK undergraduate accounting programs and providing training post-degree (from shortcomings discovered by Miller and Shawver, 2018) and make a comparison between them in order to draw attention to differences. This will help interested accountancy bodies to map and / or improve their members' exposure to ethics' interventions.

In order to attain that step of my future research, it seemed only logical to start with how universities in Romania cover ethics education. Hence, I already performed a second stage in my research, together with a PhD fellow student, a **desktop quantitative review**, to determine to what extent Ethics is included in the curricula of Romanian economic faculties, members of the Association of Economic Faculties of Romania - AFER (Manea and Hoinaru, 2021 – ICBE Proceedings, presented on 19 March 2021). We analyzed almost all study plans of AFER members programs in audit, accounting and BA and came to the satisfying conclusion that more than 90% featured Ethics as a subject, even though ethics is not formally required by the Romanian higher education regulator (ARACIS). 80% of the 123 courses we found having ethics as main or secondary subject, are mandatory and 85% of them have half or more of the maximum credits allowed for any subject, which speaks of the importance placed by professors on ethics.
As next step in this research, I have carried out interviews with professors in the same faculties to understand their position on ethics teaching and its influence in the development of future professionals. The need to perform also this **qualitative**

research came in order to counteract the limitations of the quantitative research, as through our analysis of the curricula we could not determine how much ethics was covered in other courses, if that course did not specifically have ethics in its title. Interviews with professors detailing how ethics is covered in the entirety of the curricula will help find more clarity.

I will continue with a questionnaire for students of the same faculties to see what their opinion is on whether ethics is taught or not, the influence of the ethics course on their development and the instruments of teaching ethics they were exposed to. This will give me a rounded view of how ethics education is perceived in the Romanian economic faculties.

As a further direction for my research and to come closer to the world of the practicing accountants, I will study how ethics is currently included in curricula of approximately five national or international accountancy bodies and make a cross-border comparison of current stage of their ethics interventions. I could also include reports on ethics issued by accounting practices, the likes of Big 4 for instance in my future research.

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Digitalised Accounting: IT Required Skills in European Countries

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Abstract: *The wide adoption of emerging technologies across various domains of activity is an extensively debated topic. Despite the popularity of digitalized accounting, little research focused on comparing the professional bodies and the labor market's expectations regarding the IT skills accountants should demonstrate. The research proposition is to identify the IT skills required from accounting professionals by the labor market from emerging and developed European economies and analyze whether there are differences depending on the type of economy and the period analyzed. The dataset selected for this study consisted of 1000 job advertisements from accounting, collected during two periods: September 2017 - July 2018 and January - February 2021 and the results illustrate the European labor market's current expectations and the statistical analyses conducted highlight an association between the skills requested by emerging and developed European based companies.*

Keywords: *Accounting education, information systems, IT skills, digitalized accounting, accounting graduates.*

1. Introduction

Unquestionably, the accounting profession has been subject to tremendous changes in the last decades due to the considerable growth and development of information technologies (IT) solutions, such as Enterprise Resource Planning (ERP) systems, cloud computing, mobile technologies, and artificial intelligence (AI). This increasing interest in emerging technologies that might disrupt the accounting profession has heightened the need to research the companies' current demands regarding accountants' IT skills.

Nowadays, almost every process in the finance and accounting departments has been digitalized and the organizations' current needs changed. As per this, the practitioners are no longer only required a certain level of proficiency in accounting, but they should also have solid knowledge regarding the current IT solutions being used in this field.

Corporations are extensively investing in Robot Process Automation (RPA) solutions to increase productivity and reduce costs, which are leading to the automation of entry-level accounting processes (Bakarich and O'Brien, 2020; Cooper *et al*., 2021) and the expectations are that almost all the processes will be, at some point, conducted solely with the use of robots. In this context, we might question the chances that fresh graduates can fill a position when most of the skills they possess have been already automated are and with just a few lines of code, a software can easily replace them, having a greater precision and being more profitable. The overall trend is to adopt more efficient IT solutions to decrease costs and increase accuracy. Recent evidence

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highlighted that investing in IT solutions determines an increase in the organisations' profitability (Dow *et al*., 2017).

Worldwide, most accounting activities are outsourced and offshored, as this solution has been proved to be more profitable than the costs generated by an internal accounting department (Panigrahi and Joshi, 2020). In emerging countries, the number of Business Process Outsourcing (BPO) and Shared Service Center (SSC) companies increased significantly because of the reduced expenditures. These companies do not perform the processes as initially transferred; they are optimizing them. Along with these enhancements, procedures tend to simplify and the level of professional judgment required reduces at least in the case of the entry-level operations.

During the last years, professional bodies (ACCA, 2017; ACCA 2018; ACCA, 2020a; ICAEW, 2018) have emphasized the need for future accountants to develop a new set of skills that combines accounting proficiency with more IT capabilities related to the current technologies used. The adoption of new technologies is reshaping the profession, as we know it today, as it allows the automation of specific processes. In this context, accountants should also improve their IT knowledge and skills to match the current demands. The shift of accountants from number crunchers to advisors cannot be avoided anymore as the professionals currently have at their disposal all the solutions needed to provide more value-added services, such as advising and providing strategic solutions. Moreover, with this avalanche of technologies (such as distributed ledgers, AI, and cloud computing) that brings more significant benefits, new threats appear, such as incorrect data manipulation and unintentional or deliberate exposure of confidential information. As per this, a new role of the future accountant emerges - caretaker of sensitive data.

However, although considerable research has been devoted to the IT-related skills that the accountants should master, in the light of adopting more efficient technical solutions, relatively less attention has been paid to the actual demands of the employers, to research whether the trends proposed by the professional bodies are aligned to the current market expectations.

This paper aims to investigate the IT skills required from accountants and the organizations' current expectations. In this regard, a cross-sectional study based on job requirements from emerging and developed European countries has been conducted to provide a glimpse of the current skills accountants should possess.

This paper is structured in four parts. The first part presents the relevant literature review for this research, focusing on the IT skills accountants should demonstrate from the professional bodies and researchers' perspective. The second part details the methodology used to conduct the study, mentioning the purpose and objectives. The third part presents the results obtained and discussions regarding the outcomes derived from the job advertisements' study. The last part presents the conclusions, the limits of the present study, and future research directions.

2. Literature review

This part of the study focuses on the expected skills professional accountants should develop in the current context of digitalized accounting. The investigation is centered on cloud computing, business intelligence (BI), distributed ledgers, and AI as the most endorsed IT solutions, along with the need for practitioners to have sufficient understanding and skills regarding information security.

2.1. Development of the accountants' set of skills – from number cruncher to advisor

As the current economic environment creates a vast amount of data, new technologies are needed to store, process and manipulate the information efficiently. Process automation, cloud computing, and mobile accounting are just a few of these new technologies that have already become a core part of the accounting and finance functions.

Over the years, the international professional bodies issued a series of different reports focusing on the accountant's new role in the context of digitalization. Recent evidence suggests that the accountant's traditional role will fade as a result of the automation of activities (ACCA, 2013a; ACCA, 2020a; Frey and Osborne, 2017; ICAEW, 2018) and technologies such as AI, distributed ledgers, and cloud platforms are critical differentiators for the future of the accountancy profession.

In the last years, the professional bodies (ACCA, 2020b; CIMA, 2019; ICAEW, 2021) tried to increase the level of awareness by introducing in their curricula special topics designed to help future professionals to create a sufficient base of knowledge and an adequate set of skills, such as:

- Identifying the best hardware and software solutions;
- Implementing and assessing controls using information systems;
- Understanding and using emerging technologies, such as data analytics, cloud computing, AI, and distributed ledgers, along with data security and cyber risks.

Previous literature has clearly shown that with the usage of these technologies, the accountants now have a real opportunity to shift from number crunchers to advisors by taking advantage of the functions that these technologies provide (Appelbaum *et al*., 2017). Since the objective of this study is to analyze the IT skills that the accounting practitioners should master, we cannot overlook the ability to work with Accounting Information Systems (AIS), as we expect to find in our study requirements regarding these skills, as it was the case of the study conducted by Albu *et al*. (2011). Nowadays, companies from different fields of activity started using ERP systems instead of AIS as the first one is a fully integrated and comprehensive end-to-end solution that incorporates all (or almost all) the activities of a business. Previous research (Caglio, 2003; Albu *et al*., 2011) considers that the adoption of ERP systems in accounting facilitated the hybridization between different accounting roles.

The AIS courses represent the first bridge between the accounting and IT fields in the accounting university training and profession. Nevertheless, prior research has shown that not all the accounting faculties merged with the Information System departments to facilitate the fusion between these two areas (Pan and Seow, 2016), which leads to the idea that graduates might not have at least a basic understanding of the IT solutions.

In the accounting literature, several studies accentuate the gap between the universities' curricula and the international bodies' expectations regarding IT skills. The curricula either do not contain sufficient AIS courses or there is a lack in the continuity of the IT competencies gained by the students during the study programs (Senik *et al*., 2013). There is currently a gap between the accounting universities' curricula in Romania and international requirements (Stanciu and Rîndașu, 2017) and the results showed that even in the case in which the accounting departments merge with the Information Systems departments, there are still inconsistencies between the academic curricula and professional bodies' requirements in the case of emerging technologies. A recent study (Kotb *et al*., 2019) highlighted the primary motivation in integrating into the accounting curricula IT subjects and although the majority of the interviewed professors acknowledged the importance of incorporating the technologies used by the labour market, only some of the respondents included in the modules IT-related aspects, the main limitations being the lack of staff and resources.

Still, it seems that the universities are not preparing the students for a long-term career path, as the curricula are focusing more on entry-level requirements and theoretical aspects than on long-term career skills and practical experience (Lawson *et al*., 2013; Pratama, 2015; Herbert *et al*., 2020; Stanciu *et al*., 2020). Therefore, universities can sometimes be seen as an inhibitor of the profession (Watty *et al*., 2016) due to their late response in the face of the digital changes, despite professional bodies' recommendations. A recent study (da Silva *et al*., 2020) highlighted that students are keen to embrace the new changes and wish to become active contributors in solving companies' IT issues, but they will need support from the universities in this process.

As prior literature emphasizes, among most required core IT competencies organizations seek from accounting professionals are AI, big data and data analytics, cloud computing, database analysis, distributed ledgers, and system design (Coyne *et al*., 2016; McKinney *et al*., 2017; Mangiuc, 2017; Moll and Yigitbasioglu, 2019). Moreover, practitioners need to understand how technology might affect or enhance the quality of their activity (Islam, 2017; Mangiuc, 2017).

As we have previously presented, the international professional bodies are trying to support the accountants in understanding and efficiently using these technologies. However, without the implication of universities and local regulators of the accounting profession, most accountants will not gain, individually, the needed set of skills to face the challenges brought by these technologies.

2.2. Accountants – caretakers of sensitive data. Are the accountants prepared to face the cybersecurity challenges?

As some powerful emerging technologies, such as cloud computing, big data, and mobile technologies, already adopted by organizations in the accounting departments, for their unquestionable benefits, besides the professionals' visible lack of skills, another challenge emerges - data security. During the last years, professional bodies (ICAEW, 2014; ACCA, 2016; AICPA, 2017) emphasized that accountants should play a vital role in protecting sensitive data. ICAEW even created an online open accessed tutorial on cybersecurity, presenting the main types of cyberattacks to assist the accountants and auditors.

Over time, the human factor has been considered one of the leading causes for unintentional or malicious data leakages (Colwill, 2009; Montañez *et al*., 2020);

however, at the same time, the human factor can be seen as an essential barrier against sensitive data exposure (Von Solms and Van Niekerk, 2013; Morgan *et al*., 2020).

As the accounting and financial departments are responsible for producing and managing a significant part of organizations' sensitive information, they must clearly understand the underlying causes and methods of preventing data leakages. This aspect does not mean that future accountants should be transformed into cybersecurity experts, but a new role of accountants is emerging, that of caretakers of sensitive data. By using their professional knowledge and having a sufficient set of capacities in understanding and using these new technologies, the accountants should design and assess various controls for maintaining data privacy.

This concept of caretaker of sensitive data can usually seem too abstract for accounting professionals. There is no standard set of rules to prevent data leakage, as information security is principle-based due to the complexity and variety of the IT solutions used. As per this, accountants might feel the need for some guidance in this new role. To understand how practitioners can protect data, we must first understand what cybersecurity means and the main data leakage methods or exposure.

The American Institute of Certified Public Accountants (AICPA, 2017) defines cybersecurity as being based on confidentiality, integrity, and availability, as well as the skills needed for complying with these concepts. Other professional bodies, such as Chartered Global Management Accountant (CGMA, 2017), started to present the cybercrime matter in a more technical approach, focusing on encryption, man-in-the-middle attacks, along with methods to protect the hardware devices, creating in this way a sufficient base for practitioners to at least get a glimpse on the actual methods of cyberattack.

After analyzing the relevant literature on the matter of skills for future accountants in relation to emerging technologies, along with the capacity of the professionals of acting as caretakers of data, there is clear evidence underlining the fact that organizational bodies and researchers are trying to act as a mediator for the gap between the current accounting profession requirements and future expectations.

3. Research methodology

The professional bodies have already provided a glimpse of the accounting profession's future concerning the merger between accounting and IT. The impact anticipated by them is focused on developing the accounting professionals, who should play a vital role in supporting organizations' value-added processes in the light of technological development (ACCA, 2020a). Researchers have correctly predicted the increase of hybrid jobs at the intersection of these two fields – accounting and IT (ACCA, 2013b; Guthrie *et al*., 2012) as representing the profession's future.

This research aims to identify the current IT skills requested by European-based companies from emerging and developed economies, having as a milestone the forecasts of international professional bodies. Thus, the general research objectives set out were:

O1. Analyzing the current skills required or desired from accountants and evaluating whether there are gaps between the actual practice and the expectations formulated by professional bodies.

O2. Identifying any significant differences between the requirements of companies from emerging and developed economies.

O3. Evaluating whether, between the two periods (2017-2018 and 2021), there was any significant change regarding the required IT skills in the accounting field.

The research's general approach consists of conducting an exploratory cross-sectional study to better capture different perspectives regarding employees' IT skills.

In this exploratory research, we analyzed 1,000 job offers from Bulgaria, Czech Republic, France, Germany, Hungary, Italy, Lithuania, Romania, Slovakia, and the United Kingdom available on different recruiting websites (Appendix no. 1).

When starting this study, we had in mind prior research pointing out that emerging economies have been more conservative and rigid regarding changes in the accounting area (Martikainen and Tilli, 2007). Moreover, in most of these emerging countries (Bulgaria, Czech Republic, Hungary, Lithuania, and Romania), the accounting profession relies more on fiscal regulation and rigid accounting frameworks (Nobes and Parker, 2008) rather than applying a principle-based approach. The other four countries in our selection are the most developed from Europe: France, Germany, Italy, and the United Kingdom. The analyzed sample has, in total, 1000 job advertisements, one hundred from each of the ten countries listed above. Half of the job ads were selected between September 2017 and July 2018, while the rest were selected during January-February 2021.

When selecting the job advertisements, we considered two conditions: the requirements mentioned either experience in the accounting field or a degree in accounting and no more than two announcements from the same employing company, per country were selected. The job requirements analyzed from the countries mentioned above were solely in the accounting field. A centralization of the data collected is presented in table 1.

Based on the professional bodies and organizations' expectations, as presented in the last part of the paper, the objective was to identify all the IT-related skills mentioned in the job advertisements either as desired or required.

4. Results and discussions

To achieve the study's first objective, we have performed a content analysis using the data collected from the job offers and examined the IT-related skills mentioned in the advertisements. After completing the investigation, we discovered that the IT-related abilities referred to office software suite - OSS (word processors, spreadsheet editors, presentation programs, personal information management software, hosting services, and online communication tools), AIS, ERP, databases, database management systems (DBMS), optical character recognition (OCR), RPA, decentralized ledgers, and BI.

The most frequent required IT skill mentioned in 649 advertisements was proficiency in using the OSS, especially spreadsheet editors, representing 64.9% of the analyzed data sample. Indeed, prior research studying the skills needed from accountants presented the ability to work with OSS as essential (Bradbard *et al*., 2014; Uwizeyemungu *et al*., 2020). Nowadays, these skills of working with spreadsheets editors or word processors, search engines, personal information management software, and social networks are considered basic digital skills, mandatory for all professionals (European Commission, 2017). Although the professional bodies and researchers encourage the use of data analytics solutions instead of the classic spreadsheet editors, recent studies have highlighted that accountants are demonstrating resistance to move past Excel and rely on new solutions instead (Schmidt *et al*., 2020)

In terms of frequency, the next skill was represented by AIS and ERP systems. Since both of them are mainly used for the same purpose by the accounting professionals, we decided to allocate these skills in the same category and use the name AIS to denote AIS or ERP in the following part of the paper. From the 1000 jobs analyzed, in only 518 cases the companies mentioned that previous AIS experience was either a requirement or a desirable skill. The result is considered to be in line with the expected trends in a career for fresh graduates. However, for mid to senior levels, this condition should be mandatory, as nowadays, almost every accounting process is performed with the help of a digital solution. Moreover, graduates should possess a certain proficiency level in using accounting software and economic universities must include this subject in their curricula. This will help them understand the digital accounting processes, the main controls, means of improvement, and how to respond to the reporting demands and security issues. This result is aligned with the previous research conducted by Uwizeyemungu *et al*. (2020) after analyzing 171 job ads from Canadian companies, in terms of frequency, AIS was the second most required IT skill.

In only 36 announcements, BI skills were required or desired; these positions were primarily related to reporting, controlling, and analysis. In some cases, the advertisements also mentioned the systems, such as Oracle Business Intelligence, SAP BW, and Power BI. Since most of the offers did not specify the system used, we could not identify whether the future employee will have to demonstrate skills regarding data mining as some of the IT solutions listed above provide this feature. In other cases, the job offers were mentioning only “detailed expertise using business intelligence applications” or “experience with BI tools”. Still, having in mind the benefits of using BI to have a clearer view on the actual accounting figures, prevention or detection of fraud, and also increasing the accuracy of the forecasting accounting (Amani and Fadlalla, 2017), this outcome is somehow unsatisfactory. It enhances the idea that the organizations from the countries analyzed might not be seeing the full potential of these technologies.

Required or desirable skills regarding databases were identified in 23 job offers where previous experience of working with databases and DBMS was a required skill. A study focusing on Romania’s accounting education (Stanciu and Rîndașu, 2017) identified that the majority of study programs have in their curricula courses regarding relational databases and DBMS. In this context, this result highlights that the employees might not be completely aware of the skills that future practitioners are developing during the academic education programs. To think that this skill is somehow redundant for accountants, we must keep in mind that in the current digitalized accounting AIS are used extensively and practitioners should understand the relational model used by the systems, if not also regarding the implementation. These skills are meant to enhance the performance of individuals, especially when working with large data sets. It should also be considered that although DBMS courses are included in the curricula, the agenda is not focused on accounting processes but rather on a syllabus that does not manage to keep the students engaged. By focusing more on the practical side of using databases and providing clear and practical examples, future practitioners will have a better understanding of data analysis. For example, a recent study (Lawson and Street, 2021) has demonstrated how accountants can leverage the skills acquired during DBMS courses to discover rogue data.

Four job offers mentioned VBA skills as desirable, VBA being an event-driven programming language mainly used to automate tasks. In only one case we have identified for an accounting position the requirement that the candidate should have working experience with RPA and OCR solutions, which are part of the AI domain. In another job ad it was specified that the future employee should manage projects focusing on digitalization and automation techniques. However, we did not find sufficient information to clearly state that the recruitment advertisement referred to automation using AI or other non-AI solutions, such as VBA.

Skills regarding distributed ledgers were specified only in one job advertisement where this was not mandatory, but a desirable skill: "in a perfect world you will have understanding of crypto-accounting or have experience working with several currencies and/or intangible assets". In none of the job offers cloud computing skills were mentioned. This result can be partially explained by the fact that these solutions are still emerging and there is no significant level of adoption. However, given the probable rise of these technologies in the near future, we expect to notice these skills more often in the next couple of years.

Since international professional associations consider that accounting practitioners should have a good understanding of IT systems to the point in which they can advise what solution is suitable for the business needs, at least in terms of the accounting and reporting activities, we have also analyzed whether the job advertisements mentioned any collaboration between the future employees and IT departments and we have identified five cases. These were not required or desired skills and were presented on the attributions list (three from France, one from Germany and the last one from the United Kingdom). The statements were the following: "Participate in defining the IT strategy", "Make any proposal regarding IT software requirements and improvements to existing software so that the IT tool is continually adapted to the needs of accounting and financial services", "Contribute to Sage and ERP improvement by working with IT and other departments", "Assist in the implementation of our ERP system", and "Liaise with IT system developers to understand data and promote system developments".

As these emerging technologies used in the accounting profession increase the risk of sensitive data leakage, we have also analyzed if any of the job advertisements included such requirements, as proficiency in implementing and assessing controls and any data security-related skills. However, no job that fulfils these conditions was encountered. This result raises concerns as not all the companies are training the employees regarding information security threats and given the level of personal data used in accounting, especially having in mind the General Data Protection Regulation that came into effect in 2018, organizations are at risk of being fined if the employees are not complying with the regulation when using personal data.

Table 1: **Centralization of the results**

Country	**AI**	**AIS**	**BI**	**Databases and DBMS**	**Distributed ledgers**	**OSS**	**VBA**
Bulgaria	-	47	3	2	-	84	-
Czech Republic	-	52	2	1	-	72	-
France	-	46	4	1	-	48	-
Germany	-	77	8	2	-	72	-
Hungary	1	47	2	2	-	68	-
Italy	-	52	3	3	-	60	-
Lithuania	-	44	5	3	-	52	-
Romania	-	55	3	3	-	71	-
Slovakia	-	46	1	2	-	68	3
UK	-	52	5	4	1	54	1
Total	**1**	**518**	**36**	**23**	**1**	**649**	**4**

As in the case of the study conducted by Uwizeyemungu *et al*. (2020), we have not discovered any IT-related competency that is not covered by the courses provided by the majority of accounting faculties in Europe or promoted by professional bodies. Nevertheless, comparing the findings of this study with the results obtained by Uwizeyemungu *et al*. (2020), in the current sample, we did not encounter any job advertisements that will require competencies regarding IT governance, protection technologies and software, or computer and telecommunication networks.

In the selected sample, we have found 209 items, representing 20.9% of the total dataset used in this study, having no mentions of any particular IT skills the candidate should demonstrate. In some cases, we have found some abstract requirements. Several examples are the following: "commits to being knowledgeable and up-to-date with relevant technologies", "have a high affinity for IT topics", "proficiency with IT tools is essential", and "a good command of IT tools and architectures". Since the skills required or desired by the employers were not specified in terms of technologies, we could not deduct what skills are needed, as there are various IT tools used in the accounting domain.

After assessing the research results, the authors concluded that this outcome indicates that organizations might undervalue the accounting professionals through the presented job requirements. Their job offers focused primarily on essential digital competencies and AIS. One logical explanation for this aspect is that, as previously stated by Albu *et al*. (2012), about the accounting profession from Romania, there is a gap between the current role of accountants and their true potential as advisors and strategists. We, therefore, might conclude that the accountants' capabilities might be disregarded in these ten countries analyzed. The minimal IT skills and knowledge emphasized by the accounting international professional bodies, part of their requirements for accountants' certification, should be a valuable benchmark for the companies worldwide and not a key differentiator for remuneration.

Regarding the second objective of this research, evaluating if there are any significant statistical differences between emerging and developed economies in terms of the skills asked from accountants, we performed a chi-square test for independence, using the Statistical Package for Social Sciences (SPSS).

Given that in the case of BI, AI, databases, DBMS, and VBA there were only a few job advertisements identified, we performed the tests only for AI and OSS. Both tests had two categorical variables with two groups. The first test's variables were the country (emerging versus developed) and AIS skills (AIS versus non-AIS), while the second test had country and office software suite (OSS versus non-OSS) as variables.

The chi-square test hypotheses formulated for the first analysis were the following:
$H0_1$: There is no association between the type of country (emerging or developed) and the AIS skills required or desired.
Ha_1: There is an association between the type of country (emerging or developed) and the AIS skills required or desired.

For the second chi-square test analysis, the hypotheses formulated were the following:
$H0_2$: There is no association between the type of country (emerging or developed) and the OSS skills required or desired.
Ha_2: There is an association between the type of country (emerging or developed) and the OSS skills required or desired.

After analyzing the results obtained after performing both chi-square tests, having the p-value of 0.011 in the case of AIS skills (table 2) and 0.001 in the case of OSS skills (table 3), we rejected the null hypotheses ($H0_1$ and $H0_2$) with a level of confidence of 95% and concluded that there is an association between the types of country and the expected skills. However, as observed from the Phi-value in both cases (table 4 and table 5), the association's effect is small between the variables.

Table 2. **Chi-Square Tests for AIS**

	Value	Df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	6.542[a]	1	.011		
Continuity Correction[b]	6.216	1	.013		
Likelihood Ratio	6.556	1	.010		
Fisher's Exact Test				.012	.006
N of Valid Cases	1000				

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 192.80.
b. Computed only for a 2x2 table

Table 3. **Chi-Square for OSS**

	Value	Df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	11.987[a]	1	.001		
Continuity Correction[b]	11.523	1	.001		
Likelihood Ratio	11.913	1	.001		
Fisher's Exact Test				.001	.000
N of Valid Cases	1000				

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 140.40.
b. Computed only for a 2x2 table

Table 4. **Symmetric Measures for AIS**

		Value	Approx. Sig.
Nominal by	Phi	.081	.011
Nominal	Cramer's V	.081	.011
N of Valid Cases		1000	

Table 5. **Symmetric Measures OSS**

		Value	Approx. Sig.
Nominal by	Phi	-.109	.001
Nominal	Cramer's V	.109	.001
N of Valid Cases		1000	

By performing these analyses, we achieved the second objective of the research and we can conclude that there are statistically significant differences between emerging and developed economies in terms of the skills asked from accountants, but the effect size is weak.

To achieve the third objective of the research, we have performed another chi-square analysis to test whether the job requirements in accounting have changed due to the extending digitalization of processes. As in the case of the second objective, since the only statistically significant volume of skills was identified in the case of OSS and AIS, we conducted two chi-square tests. The first test's categorical variables were panel (Panel A – for the dataset collected during 2017-2018 versus Panel B - for the dataset collected in 2021) and AIS skills required (AIS versus non-AIS) and for the second test panel (Panel A versus Panel B) and OSS (OSS versus non-OSS).

The third chi-square test performed had the following hypotheses:
$H0_3$: There is no association between the panel and the AIS skills required or desired.
Ha_3: There is an association between the panel and the AIS skills required or desired.

For the fourth chi-square test analysis, the hypotheses formulated were the following:
$H0_4$: There is no association between the panel and the OSS skills required or desired.
Ha_4: There is an association between the panel and the OSS skills required or desired.

The p-values of 0.486 in the case of the AIS skills (table 6) and 0.842 in OSS skills (table 7) determined us to accept the null hypotheses and conclude that there is no association between the panels and the skills. This result emphasizes that during the period 2017-2021, there were no significant changes between accounting professionals' IT skills regarding AIS systems or OSS skills. We expected that there would be a significant statistical association, as in the last years, companies started to increase the number of remote jobs and, in the absence of face-to-face training, employees should demonstrate sufficient skills to perform the job requirements. However, the chi-square tests did not confirm our expectations.

Table 6. **Chi-Square Tests for AIS**

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.577[a]	1	.448		
Continuity Correction[b]	.485	1	.486		
Likelihood Ratio	.577	1	.448		
Fisher's Exact Test				.486	.243
N of Valid Cases	1000				

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 241.00.
b. Computed only for a 2x2 table

Table 7. **Chi-Square Tests for OSS**

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.040[a]	1	.842		
Continuity	.018	1	.895		
Likelihood Ratio	.040	1	.842		
Fisher's Exact Test				.895	.447
N of Valid Cases	1000				

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 175.50.
b. Computed only for a 2x2 table

The outcomes of the study can be explained through four perspectives:

- A significant part of the companies does not consider mandatory for candidates to have a particular set of IT skills as these capabilities will be gained by the professional after taking some internal training. However, this approach is costly and the company is not fully benefiting from the employees' IT skills.
- Future employees will not need any other IT skills besides AIS and OSS to perform their roles, as the mentioned technologies are not being used or the company is focusing only on the present or short-term needs.
- The recruiters might not have complete visibility and understanding of the context in which the professionals will work and the job descriptions might not fully cover the required area of expertise.
- From an accounting education point of view, although many accounting faculties incorporated some of the technologies promoted by the professional bodies in their curricula, the labor market is not satisfied with the skills graduates acquire. This fact might result from the fact that the IT educators do not have sufficient knowledge regarding using the technologies they are teaching from an accounting perspective, as a prior study suggests (Kotb *et al.*, 2019).

5. Conclusions

This research revealed clear evidence that the accounting profession is changing due to the current extensive adoption of IT solutions. These new technologies aim to facilitate the overall processes in this field and international professional bodies are trying to increase the level of awareness regarding the need to efficiently use new IT technologies and dedicated software tools, as well as protecting the sensitive information from possible vulnerabilities brought by the digital revolution in accounting.

After performing a content analysis targeting one thousand job advertisements from ten European emerging and developed countries, we discovered that accountants' IT skills level demanded is relatively low. When we decided to conduct this study on emerging economies, we expected a certain level of conservatism. However, given the fact that the majority of the digital skills required focused more on basic capabilities, such as the experience of working with spreadsheets and text processors, while just half of the analyzed items mentioned mandatory or desired AIS skills, we concluded that either organizations are not fully harnessing the actual IT potential of their current and future employees, or the professionals' IT skills are not sufficiently developed to formulate such demands. Although, as presented in the literature review, sometimes accounting educators might respond late to the labor market requirements, still to do so, they should receive all the necessary information regarding the demands.

After achieving the second research objective, the results obtained highlight a significant statistical association between the economies (emerging versus developed) and the AIS and OSS skills. However, from a statistical point of view, there is a weak effect size between the variables despite the significance. Moreover, the analysis performed regarding the association between the panels and skills has highlighted no statistically significant association during the periods (2017-2018 and 2021) and the skills asked.

The overall result of this study highlights the fact that in the European Union, the labor market does not expect accounting practitioners to demonstrate skills regarding IT solutions, except for AIS and OSS. However, some faculties have included in their curricula courses relating to AI, distributed ledgers, and Big Data, yet most employers do not require these skills. Therefore, accounting faculties should analyze what they can improve so that the future practitioners' skills will be appreciated and sought by the labor market.

A limitation of this study is that there are many small companies in Europe and they might not have yet adopted some of the technologies presented in this paper. The company size analysis has not been performed in this study as some job advertisements were from recruitment companies that did not specify the customer's name, the companies' employee number, or size. The same logic applies in the case of the field of activity, although this should not have a significant influence.

The authors expect that this outcome will suffer some changes in the near future, as more and more technologies that reduce the redundant processes will be adopted to cope with the economic realities. Digital environment extension and complexity will impose new and solid IT skills from professional accountants. In this respect, employment demands will be updated accordingly. The permanent dialogue and cooperation between accounting faculties, professional bodies, and employers will ensure the curricula's adjustment so that the bachelors training will respond to the professional requirements in a highly digitalised environment.

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APENDIXES

Appendix no. 1: List of the recruiting sites used to collect the job advertisements

1. https://de.indeed.com/
2. https://it.indeed.com
3. https://offre-demploi.monster.fr
4. https://www.cadremploi.fr
5. https://www.cvonline.lt/
6. https://www.ejobs.ro/
7. https://www.indeed.co.uk
8. https://www.indeed.fr
9. https://www.jobijoba.com
10. https://www.jobs.bg/
11. https://www.jobs.cz/
12. https://www.linkedin.com/
13. https://www.profesia.sk/
14. https://www.profession.hu/
15. https://www.reed.co.uk/

Fraud - A Multidisciplinary Element. Famous Cases in Such Different Fields

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Abstract: *This article aims to demonstrate why fraud is a multidisciplinary element. The subject is of real interest for both theorists and practitioners, due to its controversial nature and divergences of opinion in national and international literature, but also the many fields in which it is found. The paper is qualitative. We used a series of bibliographic sources consisting of books, accounting, tax, and legal regulations, studies and articles published both nationally and internationally, web pages of institutions with responsibilities, in order to achieve the set objectives. The research methodology begins with the identification of scientific databases that host articles related to our research context. Ten major scientific databases were selected to complete the literature review. In the second part, the Web of Science database was selected and an analysis was made based on the 17,825 results found when searching for the word "fraud", and then three example of cases were presented. The main purpose of this paper is to demonstrate the ramifications of fraud in multiple areas. The results answer in the affirmative to the research question. In addition, the implications of the results are that all actors can outline an overview of the phenomenon, but especially reveals the gaps in the discovery of the phenomenon. Research is an interdisciplinary research, because to understand the concepts we need many disciplines.*

Keywords: *Fraud, tax fraud, tax evasion, multidisciplinary element, fields.*

1. Introduction

This article aims to demonstrate why fraud is a multidisciplinary element. The subject is of real interest for both theorists and practitioners, due to its controversial nature and divergences of opinion in national and international literature, but also the many fields in which it is found. The work is qualitative and we used a series of bibliographic sources consisting of books, accounting, tax and legal regulations, studies and articles published both nationally and internationally by various bodies in the field, web pages of institutions with responsibilities both nationally, as well as at European Union level, to achieve the set objectives. The main purpose of this paper is to demonstrate the ramifications of fraud in several areas.

The results answer in the affirmative to the research question, namely that fraud is a multidisciplinary element. In addition, the implications of the results are that all actors can outline an overview of the phenomenon, but especially reveals the gaps in the discovery of the phenomenon. Research is an interdisciplinary research, because to

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understand the concepts we need many disciplines such as ethics, law, taxation, accounting and more.

The following represent the main objectives of the theoretical research undertaken:

- Objective 1: Clarification of the conceptual delimitation of fraud.
- Objective 2: We will demonstrate why fraud is a multidisciplinary element, using a database such as Web of Science.

The work is qualitative. We used a series of bibliographic sources consisting of books, accounting, tax and legal regulations, studies and articles published both nationally and internationally by various bodies in the field, web pages of institutions with responsibilities in the field, both at national level as well as at the level of the European Union, in order to achieve the set objectives.

The paper is structured in four parts, the first part is a review of the literature, the second part presents the research methodology, and the third part analyzes the research results and, finally, presents the conclusions and future research directions.

2. Fraud - literature review

The term "fraud" is defined by Coteanu *et al*. (1998) in the Romanian Explanatory Dictionary (DEX 1998, p.397) as follows: "Committing in bad faith, in order to obtain benefits, acts that infringe the rights of another; theft".

According to the Oxford dictionary, the notion of fraud is defined as "the crime of deceiving someone to obtain money or goods illegally".

International Standards on Auditing (ISA), through ISA 240, defines fraud as "unjust or illegal advantage".

According to Grosu and Timofte (2018): "A creative accounting practice can later turn into an illicit accounting practice, especially if it extends over a long period of time and involves considerable monetary values". In the opinion of Stolowy (1994) quoted by Grosu and Timofte (2018) "frauds have nothing creative".

YitzhakiI (1974, p.201), using the same notation and equation as that used by Allingham and Sandmo (1972), shows, starting from the premise that the taxpayer has an absolute risk aversion that decreases with the source of income, that as the tax rate increases, tax evasion decreases. In this case, there is no substitution effect.

In their paper, Marelli and Martina (1988, p.68), concluded: "In this paper we have examined tax evasion in the context of an oligopolistic market. In particular, we have shown how the optimal amount of tax evasion depends not only on the collusiveness of the market, but also on the relative market shares. If market shares are not "too far apart", an increase in collusion gives rise unambiguously to an increase in tax evasion, irrespective of the type of tax in existence. Furthermore, we analyzed the effects of State controlled parameters (such as the probability of detection, the penalty and the tax rate) on the tax compliance variable, confirming the qualitative results obtained in the literature for other types of market. We are well aware of the very simplified nature of the mode1 employed; however, even with such a simplified model, one can gain some insights into the nature of the tax evasion phenomenon and, therefore, on the characteristics a design of efficient tax-enforcement policies should have."

Later, Bustano *et al.* (2011) talk in their paper about the removal of undeclared work from the underground economy, which is a form of tax evasion.

Stankevicius and Leonas (2015, p. 388) conclude that: "Financial fraud is an incredibly dynamic phenomenon - and fraud models have a very short validity period - a simple tax system and complete information about the activity of agents can reduce evasion tax. "

Several authors, quoted by Yamen *et al.* (2018, p.10) define tax evasion as follows: "Korndörfer, Krumpal and Schmukle (2014, p. 19) define tax evasion as "an illegal act that violates the law and deviates from social norms which provide for the payment of taxes". Tax evasion can also be seen as "the deliberate attempt to defeat or evade the tax law in order to illegally reduce the tax obligation" (Gottschalk, 2010, p. 453).

Azharul *et al.* (2020, p.2) quoting several authors lists several theories: "There are different theories of tax evasion that dictate the country's attitude towards non-taxpayers. The theory of economic deterrence (Allingham and Sandmo, 1972) states that tax evasion is a crime and is committed by an individual when he considers that the predicted benefits of the crime are far greater than the costs of being caught. Legal commitment based on the rule of law provides adequate ground for the government to prevent and punish evasionists (Allingham and Sandmo, 1972; Schneider and Enste, 2000). The finding that there is a negative association between law enforcement and tax evasion (Becker, 2013) supports the theory. Feld and Frey (2007) developed the concept of associating the terms: fiscal-psychological for establishing a fair and reciprocal obligation between government and taxpayers, where one side gives something and the other takes something - a situation quid pro quo. Based on this theory, taxpayers feel discouraged from paying taxes if they perceive the quality of state institutions as low in general. Like the theory of deterrence, this theory also considers taxpayers to be rational people who have the ability to know the costs and benefits of tax evasion. Smith and Smith (2014) presented another theory called the theorem of moral feelings that involves religiosity that acts as a type of internal moral force in the payment of taxes. One study found that religious people have more moral sense (Marquette, 2012) and religiosity keeps people away from all evil activities and discourages tax evasion.

Although Allingham and Sandmo's (1972) tax evasion model is crucial in explaining the potential reasons for tax evasion, it is limited only by law enforcement (the institutional rule) by the tax authority and ignores the potential influence of taxpayers' personal beliefs and economic freedom of the country as regards the behavior of the taxpayer. Again, the sentimental theory of tax evasion considers only one aspect of tax evasion (individual norm) while other aspects (economic freedom and institutional norm) are absent. On the other hand, psychologically, the theory of the concept of tax evasion considers that all individuals are rational, but the concept of rationality is ambiguous because it depends on multiple factors, taking into account the limitations of existing tax theories of evasion (Nurunnabi, 2018).

Grosu and Timofte (2018) also classify financial accounting frauds, stating: “Financial-accounting frauds can take various forms: tax evasion, theft, fraudulent management, embezzlement, forgery, financial reporting fraud, fraud, use of company credit in personal interest, money laundering offenses, offenses provided by special laws of fraud of the budget of the European Union, etc. Legal norms for their incrimination are found scattered in the national legislation, being included in the Criminal Code, Law no. 241/2005 for preventing and combating tax evasion, Fiscal Code, Companies Law no. 31/1990, Customs Code, Law no. 656/2002 for the prevention and sanctioning of money laundering, etc., the sanctions being mostly criminal”.

The fraudulent offenses provided /by the Romanian Criminal Code, the special part are described by Boroi (2019, p 245) and are found in Chapter III “Crimes against property by disregarding trust” of the Criminal Code.

At national level, in Romania, by Government Decision no. 793/2005, amended by Government Decision 1211/2006, the National Anti-Fraud Strategy for the protection of the European Union’s financial interests in Romania was approved. Chapter V of the mentioned Government Decision defines the general principles of the fight against fraud, respectively: efficiency in the fight against fraud, institutional and managerial responsibility, and professional competence of the personnel involved in the fight against fraud, transparency of activities carried out by institutions involved in the fight against fraud. In the same chapter, the specific objectives proposed by the National Anti-Fraud Strategy are mentioned: prevention of fraud of community funds through communication and public relations actions, public financial control, fiscal control, investigation and prosecution, financial recovery, coordination of anti-fraud and protection of the financial interests of the European Union in Romania.

According to Trif (2015): “The means used to evade tax obligations come in infinite forms, but they can be divided into two categories: illicit (fraudulent tax evasion) and licit (legal tax evasion, tolerated). A distinction can therefore be made between tax fraud, which is an unlawful act, even of a criminal nature, and tax evasion itself, which does not involve facts which meet the constituent elements of a crime”. He states that in Anglo-Saxon countries tax evasion stands for fraud, and tax avoidance stands for tax evasion.

At European Union level, the body responsible for combating fraud is the European Anti-Fraud Office (OLAF), which investigates cases of fraud in the European Union budget, corruption and gross negligence at the level of the European institutions and draws up anti-fraud policy on behalf of the European Commission.

Based on the information and experience gained, European Anti-Fraud Office (OLAF) helps the authorities responsible for managing European funds (EU and non-EU) to identify the various types of fraud, existing trends, threats and potential risks and to protect the EU’s financial interests by preventing fraud.

The Hercule programs fund actions aimed at preventing and combating fraud, corruption and other illegal activities that affect the EU’s financial interests. Actions eligible for funding include operational and technical support for investigations, specialized courses and research activities. They are implemented through grants and contracts.

At the national level, in Romania, the Department for the fight against fraud - DLAF was established, the department ensures, supports and coordinates the fulfillment of Romania's obligations regarding the protection of the European Union's financial interests and is the contact institution with OLAF.

3. Research methodology

The research questions are:

RQ1: What is fraud?

*RQ*2: Where do we find fraud? Is fraud a multidisciplinary element? Why?

The research methodology, to review the literature and to answer the first research question begins with the identification of scientific databases that host articles related to our research context. Ten major scientific databases were selected: ScienceDirect, Proquest Central, Web of Science, Emerald Management EJournals, CEEOL, Scopus, CAB ebooks, Jstore Business Colections, Springer ebooks Business and Economics Collectione but also Google Academic. The process of searching through the literature began with the creation of the criteria that determine the articles to be included or excluded from our analysis. We have established four criteria, stipulating that the article must (1) contain one of the keywords, (2) be written in English and / or Romanian, (3) be published between 1958 and 2020 or be approved for publication (4) have the full text available in at least one of the ten databases.

The sources used in the qualitative analysis are: dictionaries, encyclopedias; articles indexed in international databases (ScienceDirect, ProQuest, etc.); articles published in the volumes of international and national conferences; representative interdisciplinary books for the analyzed field, national and international literature; national and international regulations (OLAF and DLAF, ISA 20) and European directives; monographs, treatises, etc.

The research begins with the traditional review of the literature, starting with 1958 and until 2020; each concept analyzed is followed by comments, observations and personal points of view of the authors.

To answer the second research question and to demonstrate that fraud is a multidisciplinary element, we will analyze the Web of Science database, looking for the word "fraud" and analyze the areas in which it is found, depending on how was mentioned in the article. From the information provided by the Web of science database the record count in each column is the total number of articles published in the selected year. The count included Early Access articles that are fully peer-reviewed, citable, and published but have not been assigned a volume/issue/page number.

Finally, we will present cases of fraud in various fields, using the Bloomberg financial database, the public reports of criminal investigation bodies and information from the press.

4. Results analysis

4.1. Analysis of the Web of Science database, looking for the word fraud

A click away, on the Web of Science, searching for the word "fraud", we will notice that we can find this word in papers from all the existing domains in this database. The search is showing 17,825 record for topic fraud. Figure 1 shows the statistics generated by Web of Science, which include the number of papers containing the word "fraud" for each field. The first 25 domains.

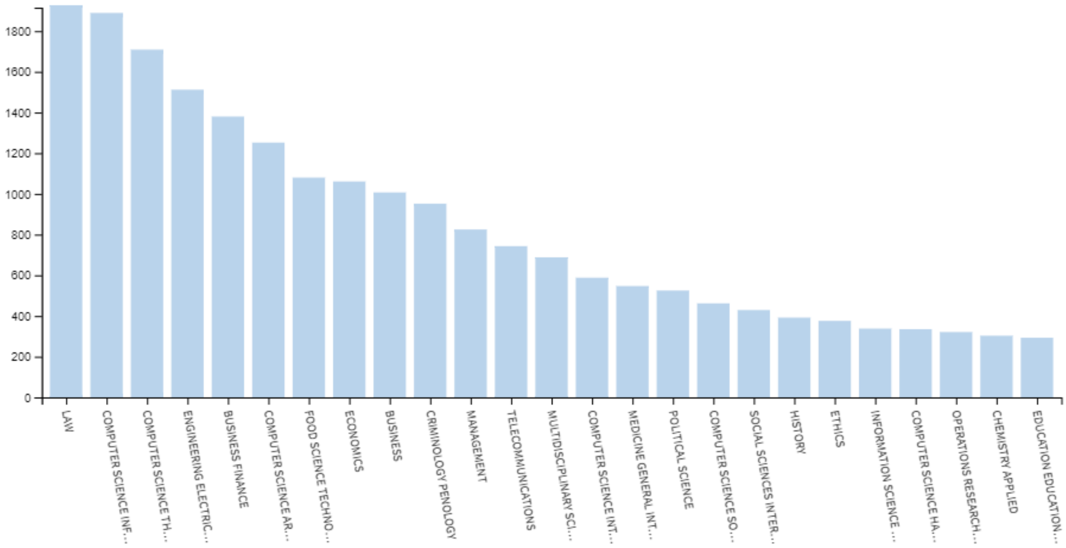

Figure 1. **Search for the word "fraud" in the Web of Science database. Bar graph. The first 25 domains**
(*Source:* Web of Science)

Usually, the word is encountered in the field of law, given the fact that fraud is most often criminalized as a crime. What is surprising, however, is that the business finance field is ahead of the IT field in this ranking. Which reveals to us the new era and the ability of fraud to bend on the new models.

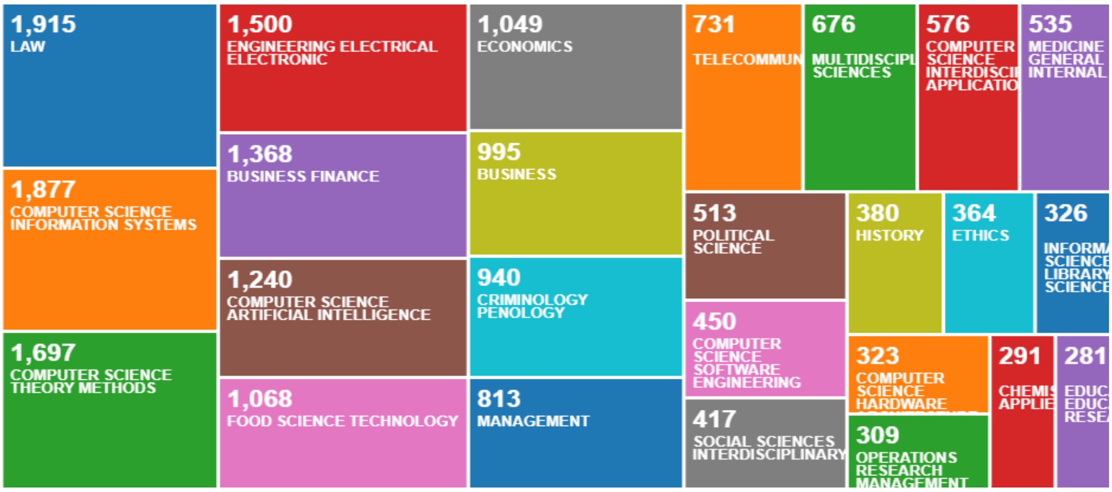

Figure 2. **Search for the word fraud in the Web of Science database Tree map. First 25 results**
(*Source:* Web of Science)

Table 1. **Search for the word fraud in the Web of Science database Tree map. First 50 results**

Field: Web of Science Categories	Record Count	% of 17,825
Law	1.915	10743,00%
Computer Science Information Systems	1.877	10530,00%
Computer Science Theory Methods	1.697	9520,00%
Engineering Electrical Electronic	1.500	8415,00%
Business Finance	1.368	7675,00%
Computer Science Artificial Intelligence	1.240	6957,00%
Food Science Technology	1.068	5992,00%
Economics	1.049	5885,00%
Business	995	5582,00%
Criminology Penology	940	5273,00%
Management	813	4561,00%
Telecommunications	731	4101,00%
Multidisciplinary Sciences	676	3792,00%
Computer Science Interdisciplinary Applications	576	3231,00%
Medicine General Internal	535	3001,00%
Political Science	513	2878,00%
Computer Science Software Engineering	450	2525,00%
Social Sciences Interdisciplinary	417	2339,00%
History	380	2132,00%
Ethics	364	2042,00%
Information Science Library Science	326	1829,00%
Computer Science Hardware Architecture	323	1812,00%
Operations Research Management Science	309	1734,00%
Chemistry Applied	291	1633,00%
Education Educational Research	281	1576,00%
Sociology	234	1313,00%
Chemistry Analytical	227	1273,00%
Chemistry Multidisciplinary	205	1150,00%
Engineering Multidisciplinary	203	1139,00%
Public Administration	195	1094,00%
Nutrition Dietetics	194	1088,00%
Humanities Multidisciplinary	183	1027,00%
Psychology Multidisciplinary	169	948,00%
History Philosophy Of Science	167	937,00%
Automation Control Systems	165	926,00%
Public Environmental Occupational Health	155	870,00%
Social Issues	153	858,00%
Health Care Sciences Services	152	853,00%
International Relations	134	752,00%
Health Policy Services	126	707,00%
Pharmacology Pharmacy	126	707,00%

Field: Web of Science Categories	Record Count	% of 17,825
Agriculture Multidisciplinary	123	690,00%
Area Studies	114	640,00%
Statistics Probability	111	623,00%
Medicine Legal	104	583,00%
Psychiatry	104	583,00%
Environmental Sciences	103	578,00%
Communication	102	572,00%
Engineering Chemical	101	567,00%
Engineering Industrial	101	567,00%
(197 Web of Science Categories value(s) outside display options) (12 records (0.067%) do not contain data in the analyzed field)		

(Source: Web of Science)

Analyzing table 1, we can see that fraud is found in many areas, in the table being presented only the first 50 areas, in the order in which the word fraud is mentioned in the articles in these areas. Again, we notice the law in the first place. However, fraud is also found in medicine, engineering, public administration, etc.

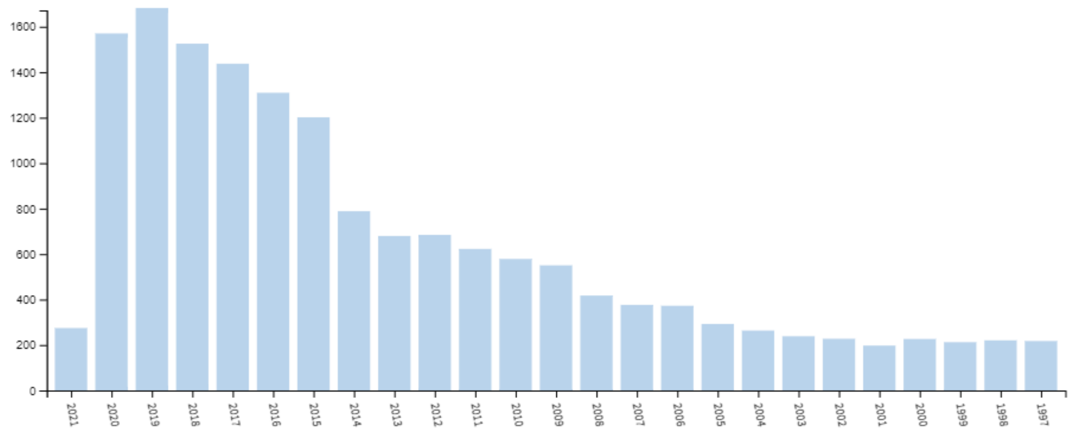

Figure 3. **Publication years. First 25 results**
(Source: Web of Science)

The papers were published between 1997-2021 but there is an increase in interest in the concept of fraud in 2014-2019.

Table 2. **Document type**

Field: Document Types	Record Count	% of 17,825
Article	10.723	60157,00%
Proceedings paper	4.178	23439,00%
Editorial material	1.007	5649,00%
Book review	635	3562,00%
Book chapter	633	3551,00%
Review	594	3332,00%

Field: Document Types	Record Count	% of 17,825
News item	428	2401,00%
Letter	377	2115,00%
Early access	202	1133,00%
Note	98	550,00%
Meeting abstract	80	449,00%
Book	48	269,00%
Correction	18	101,00%
Reprint	7	39,00%
Poetry	6	34,00%
Discussion	4	22,00%
Film review	4	22,00%
Correction addition	3	17,00%
Item about an individual	2	11,00%
Data paper	1	6,00%
Excerpt	1	6,00%
Retracted publication	1	6,00%
TV review, radio review, video	1	6,00%

(*Source:* Web of Science)

The word "fraud" is most often used in documents such as articles, followed by proceedings paper and editorial material.

Table 3. **The countries/regions that have published the most about fraud**

Field: Countries/Regions	Record Count	% of 17,825
USA	5.170	29004,00%
England	1.357	7613,00%
Peoples Republic of China	1.352	7585,00%
Germany	669	3753,00%
Australia	652	3658,00%
Spain	647	3630,00%
India	624	3501,00%
Italy	593	3327,00%
Canada	577	3237,00%
Brazil	434	2435,00%
France	385	2160,00%
Netherlands	361	2025,00%
Malaysia	294	1649,00%
Romania	234	1313,00%
Russia	226	1268,00%
Taiwan	225	1262,00%
South Korea	219	1229,00%
Switzerland	211	1184,00%
Belgium	206	1156,00%
South Africa	183	1027,00%
Indonesia	178	999,00%

Field: Countries/Regions	Record Count	% of 17,825
Iran	171	959,00%
Japan	155	870,00%
Turkey	147	825,00%
Portugal	142	797,00%
(110 Countries/Regions value(s) outside display options) (2423 records (13.593%) do not contain data in the analyzed field)		

(*Source:* Web of Science)

The biggest interest for publishing about fraud is shown by the USA, but Romania is also in the top 25 countries, ranking 14th.

4.2. Example of cases from different fields

4.2.1. Case 1. Crypto fraud

The case is U.S. v. Sharma, 18-cr-340, U.S. District Court, Southern District of New York (Manhattan). Scheme Unravels (Source Bloomberg).

Sharma and two others he recruited to Centra Tech quickly raised funds with the help of social media mentions by celebrities including Mayweather and DJ Khaled, who later settled SEC charges that they failed to disclose they had been paid to promote the company. In his pitch to investors, Sharma said Centra Tech had licenses in more than three dozen states and partnerships with large companies including credit card issuers Mastercard Inc. and Visa Inc.

Within three months, the trio had raised more than $25 million for their initial coin offering and moved to luxury offices in Miami Beach. However, by August 2017, a blogger had revealed that a photograph of the purported Centra Tech CEO on a document circulated to investors was actually that of a Canadian physiology professor. The SEC sent a subpoena in November seeking documents from Centra Tech.

Five months later, the three co-founders were arrested and charged in New York. Sharma’s two recruits pleaded guilty, too, with one sentenced to a year and the other yet to be sentenced.

4.2.2. Case 2. Education fraud

College admissions case (Varsity blues case), USA (Source Bloomberg)

The case is about the widening corruption of elite college admissions, including Yale, Stanford, UCLA and Georgetown through the steady application of wealth combined with fraud. Between approximately 2011 and 2018, parents paid CW-1 approximately $25 million to bribe coaches and university administrators to designate their children as purported recruited athletes, or as members of other favored admissions categories, thereby facilitating the children’s admission to those universities.

William Rick SINGER, 19-CR-10078- RWZ case, the head of the network has not yet been convicted, but according to information available on the U.S. Department of

Justice, Sentence Government Recommended is incarceration at the low end of the Guidelines sentencing range 3 years of supervised release, fine and forfeiture.

4.2.3. Case 3. Economic fraud

Gabbionneta *et al.* (2013, p.484) study fraud in the case of Parmalat, they analyze the accounting fraud committed by Parmalat - a large Italian multinational dairy and food corporation - which practices "one of the largest and most daring corporate financial fraud". After SEC (2003) quoted by Gabbionneta *et al.* (2013, p.484), before filing for bankruptcy at the end of 2003. Investigations showed that the company's financial situation was hidden with the help of creative accounting. Calisto Tanzi, the former chief executive of Parmalat, and Fausto Tonna, the former chief financial officer, were sentenced to 26 and 16 years in prison for manipulating stock prices. Grant Thornton's accountants were also convicted of involvement in fraud by creating mechanisms by which fraud was concealed".

Other major cases of fraud are those listed by Albrecht *et al.* (2015, p.803) in America, at companies such as Enron, WorldCom, Xerox, Quest, Tyco, HealthSou, but also in Europe, Asia and other parts of the world, such as Harris Scarfe and HIH (Australia), SK Global (Korea), YGX (China), Livedoor Co. (Japan), Royal Ahold (Netherlands), Vivendi (France), and Satyam (India).

3. Conclusions

In the opinion of the European Court of Audit, through the special report no. 1 of 2019. "Because of its hidden nature, the phenomenon of fraud cannot be estimated purely on the basis of official statistics on reported and investigated cases. Sociological research methods could provide additional useful insights into the scale and nature of the problem."

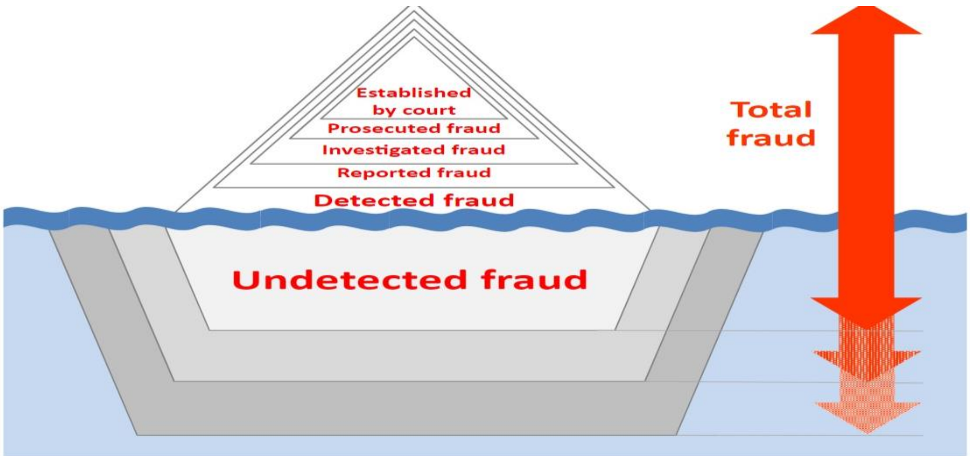

Figure 4. **Level of fraud in Europe**
(*Source:* https://op.europa.eu/webpub/eca/special-reports/fraud-1-2019/en/)

In our opinion, measuring the real level of fraud is almost impossible due to the lack of access to information for both government agencies, investigators and victims of fraud. Each of these three parts is a piece of a puzzle that no one puts together.

In conclusion, the basis of the pyramid is ethical education since childhood. To come across the word "ethics" for the first time in the years of college or admission to the profession, as it is the case in Romania, is already too late.

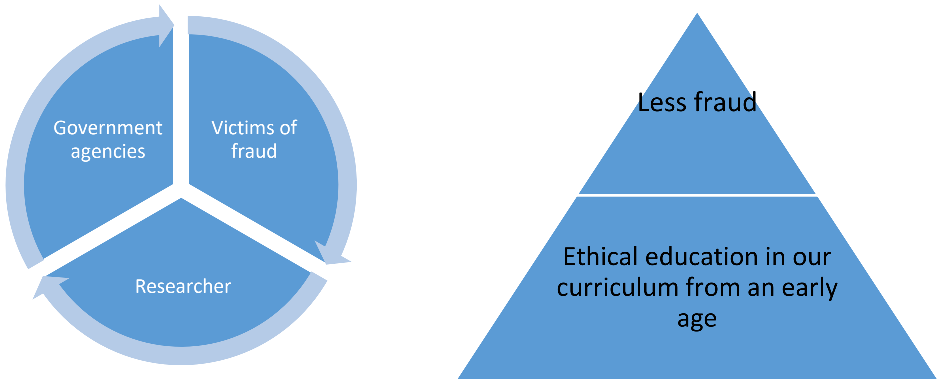

Figure 5. **Part of the puzzle fraud and pyramid**

As the analysis made on the Web of Science database shows and from the three case presented, fraud is a multidisciplinary element. Combating this phenomenon, which has become even more widespread in recent years and which is adapting to new areas such as IT, needs to be approached differently. In order to make the institutions responsible for fraud detection effective, departments with competences should be set up in certain limited areas, each, and not all areas at the same time, the amount of information needed to detect fraud is not limited to economic and legal.

Future directions of research: The research can be extended to several databases and even questionnaires and interrogation to people from different fields.

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We appreciate the helpful and constructive recommendations received on this study during the International Conference Accounting and Management Information Systems (AMIS 2021), Bucharest, Romania. Special thanks are addressed to the anonymous reviewers of this conference and to Professor, PhD Albu Cătălin Nicolae for the review given after the presentation.

We wish to record profound thanks to our research supervisor and our research committee members for advice and guidance and constant encouragement throughout the research process.

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SECTION 2

Going Concern Assumption and Negative Equity: Evidence from Companies Listed on the Bucharest Stock Exchange

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Abstract: *Companies in financial distress are a common presence in the Romanian economy. Official statistics show that more than 250,000 Romanian companies have negative equity, which significantly affects the economy as a whole. Considering in the analysis the companies listed on the regulated market (1,301 observations, for the period 2002-2019), but also on the alternative market AeRo (2010-2019) of the Bucharest Stock Exchange, I calculated that in 11%, respectively 13%, of cases, equity, after removing revaluation reserves, is negative. We could observe the importance of revaluation reserves, which, if not eliminated, would bring the percentages to 7% and 3%, respectively. Firms having long period of financial distress are difficult to recover and the figures indicate that the difficulties will be maintained and lead, in some cases, to the delisting form the financial market. Instead, companies with shorter period of financial distress have the potential to recover; this hypothesis is also found in the opinions provided by auditors in the reports accompanying the financial statements. The financial crisis of 2008 doubled the number of companies in difficulty in 2010 compared to 2009 and a tripling compared to 2008 (in the case of companies listed on the regulated market). Auditors are often less optimistic than managers of firms in financial distress and, as expected, they include in the audit reports, either to justify the modified opinion or in the emphasis of matters paragraph, observations about the going concern assumption.*

Keywords: *Financial distress, Romanian listed companies, negative equity, going concern.*

1. Introduction

Companies reporting negative equity have serious financial problems and their survival is problematic, often leading to insolvency and even bankruptcy. The official Romanian statistics on the companies finishing their lives - TEMPO Online (insse.ro) - show that, in Romania, in the period 2008-2018, on average, about 85,000 companies per year disappeared, with a maximum of 120,000 in 2013 and a minimum just over 55,000 in 2011 (fortunately, the average annual number of companies created in the same period is over 104,000). Of the companies that discontinued their activity, a significant part went through insolvency - over 20% (Guda, 2018). This last source shows that the leverage of insolvent companies has, in average, constantly increased, reaching about 104% in 2016; the indicator clearly shows us that we are in the presence of negative equity. In fact, the average life expectancy of a company in Romania is about 7 years (Neagu *et al.*, 2016), with only 7.5% of them operating over 20 years.

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In the case of bankrupt companies, I retain the simplest definition: that company cannot cope with the payment of debts at maturity (I find it in Beaver, 1966) and in many other articles, reports and regulations from various parts of the world. The same Beaver (1966) warns us that the signalling of a company's financial difficulties can be done with the help of financial indicators, but we must not limit ourselves to them. In fact, the literature that deals with signalling and identifying the difficulties that can lead to bankruptcy is very rich. In this study, I am not necessarily interested in bankrupt companies, but only those that can end up in such a situation, due to the fact that their labilities are higher than assets, i.e. they have negative equity. I also try to add to them companies whose equity is positive, but have a level below ½ of the share capital, a limit that the Romanian company law sets as a signal for shareholders to take action accordingly.

The findings of Neagu *et al*. (2016) on the evolution of the financing structure of Romanian companies, in the period 1994-2014 show us that there is an increase in the leverage of companies, a decrease in the quality of equity and a dynamics and structure of liabilities that raises questions. Thus, the share of equity decreased from 79% in 1994 to 29% in 2014 (from 82% to 45% in the case of corporations), which means that financing is mainly done by liabilities, reaching a degree of the highest leverage compared to countries in the region or in the EU. Here it is necessary to specify that the indicator can be strongly affected by reporting as liabilities of the temporary financing made available to the company by shareholders and which, especially in the case of small companies, where the administrator is also majority or sole partner, are quasi-equities. Neagu *et al*. (2016) found 191,000 companies (as of December 2014) in which the conversion into share capital of liabilities to shareholders could lead to their inclusion within the legal capital limits. Thus, this kind of conversion would allow the coverage of over 30% of the capital requirement at the level of non-financial companies with values below the regulated limit (Neagu *et al*., 2016).

The number of companies in Romania has increased significantly in the last 30 years, but Neagu *et al*. (2016) find that the number of companies per 1,000 inhabitants ranks Romania on the last position in the EU. The same authors find that Romania's economy is held by smaller and smaller companies, companies that do not increase their reported assets, sales or number of employees during operation. Firms in the SME category owned, in 2014, 58% of the assets of non-financial firms in Romania compared to 17% in 1994 (Neagu *et al*., 2014). A similar evolution is observed in the case of the average number of employees: companies of SME nature owned about 20% of the employees in 1994, so that in 2014 to reach 65%.

On the other hand, the death of some companies is a natural thing; it is estimated that easier and faster exit from the market will improve the quality of entrepreneurship (which is a necessity; for example, almost half of companies have negative equity - Neagu *et al*., 2016).

The number of companies with negative equity was 29,000 in 1994 (less than 10% of the total number of companies active in the economy), to reach 50% in 2012, the share improving later but remaining somewhere very high: 48% in 2014, i.e. approximately 285,000 companies with negative equity. The cumulative losses of companies with domestic majority capital are at almost the same level as the cumulative losses of companies with foreign capital, although the number of companies in the first category is 10 times higher than in the second category. Neagu *et al*. (2016) calculates that the cumulative losses of Romanian non-financial firms experienced a strong growth trend, with a maximum at the end of 2009, explainable by the global financial crisis; the main providers of losses are SMEs.

Considering the situation of Romanian companies in terms of capitalization, but also the signals sent by the monetary authority (BNR, 2020), the Government approved a series of fiscal facilities granted to companies that have positive equity and those that increase their net assets from year to year. These rules were introduced by the Government Emergency Ordinance no. 153/2020 and are valid for the period 2021-2025 (GEO 153/2020).

Our study is a descriptive one and aims to highlight some characteristics of companies in financial distress listed on BVB. I do not intend to show what solutions they have found to get out of the bad financial situation, nor to establish the determinants of the financial difficulties. In addition, I do not intend to contribute to the literature on predictions about the arrival of companies in difficult situations. Using as a proxy for financial difficulties, negative equity after eliminating revaluation differences, I found 11% of observations on companies listed on the regulated market (25 separate companies) in the period 2002-2019, as being in a difficult situation, compared to 13% of observations available for the AeRo alternative market (80 separate companies). Some of these companies are delisted (4 on the regulated market and 11 on the AeRo market), either through bankruptcy, or by absorption by other companies, or for other reasons. Those listed below were classified into two categories: companies that have already recovered financially (9 companies on the regulated market and 14 on AeRo) and companies that, however, were in difficulty on 31.12.2019 (6 on the regulated market and 16 on AeRo).

The financial difficulties are a reason to verify the going concern assumption, both by the management and by the financial auditor. In the case of the companies analysed by us, the managers are optimistic and, with one exception, they declare that their companies have no problems with the going concern assumption. On the contrary, financial auditors, more skeptical, also express in their reports concerns about the ability of the respective companies to continue their activity. Thus, the share of reports containing references to going concern matters, either the justifications for the modified opinion or the emphasis of matters paragraph, is 81% (for the regulated market) and 61% for the AeRo market. In the other cases, the auditors were convinced of the management's forecasts, so that they had no observations about the future of the companies. I also tried to analyse the shareholding structure of companies in difficulty, but the specificity of companies listed on both segments of BSE is that most (around 80%) have a majority shareholder who fully controls the respective businesses.

Continuing the study, I will present a literature review, I will briefly describe the system of tax facilities granted to companies with positive and growing equity, I will describe the data and methodology, the results, the conclusions and the references.

2. Literature review

The literature on companies in financial distress (especially on those materialized in insolvency/bankruptcy) is huge and refers mainly to the establishment of scores that predict the entry into such a situation, but also to the determinants of financial difficulties or restructuring measures, which could improve the situation and prevent bankruptcy. There are also studies on the economic role of companies with difficulties, on their social, fiscal and even political impact, on how they affect the banking system in the countries or regions where such companies are located, and on the evolution of these companies after they recover - if so – from of the difficult situation. The criteria by which a firm is classified as having difficulty may differ from study to study: loss during the year, recurring losses several years in a row, insufficient liquidity, high leverage, income below the sector average, negative value added or negative operating income, a low degree of interest expense coverage, declaration of insolvency, negative working capital, total negative cash flow, negative operating cash flow, equity below a certain level related to share capital, etc. In any case, the classification of firms as having financial difficulties is less precise than the legal definition of insolvent firms (Platt and Platt, 2006).

The problem of companies in financial distress is a very old one, probably as old as the existence of the companies themselves. Entering the area of financial turmoil can have many causes. These include financial or other crises that companies are forced to go through, inappropriate management decisions, such as large investments that do not materialize in the desired effects, financing in unfavorable conditions, exposure to an activity or a limited number of customers/suppliers, political or social issues, unforeseen societal and legislative developments, etc. For example, Männasoo *et al*. (2017) conclude that the intensity of investments and the large share of their debt financing increase the probability that the company will have financial problems immediately after the crisis started in 2008, in several former communist countries in Eastern Europe (including Romania). The difficult financial situation can also be influenced by components of corporate governance. Daily and Dalton (1994) find that there is a relationship between corporate governance (CEO duality, independence of board members) and insolvency, warning us that the results cannot be generalized. More recently, for a sample of Chinese firms, Wang and Deng (2006) identify factors such as the existence of a large shareholder, the presence of the state as a major shareholder or the presence of independent directors, which would limit the risk of financial difficulties. Shahwan (2015) calculates a governance index and finds no significant link between the characteristics of governance and the likelihood that a firm will run into financial distress. Tang *et al*. (2020) also identifies governance indicators associated with companies with difficulties (shareholder structure, internal control system, audit opinion), along with 47 financial indicators with specific values. Governance indicators are analyzed by Manzaneque *et al*. (2016), for a sample of Spanish companies, noting that the presence of shareholders on the board, increasing the share of independent directors and increasing the number of board members reduce the likelihood of difficult financial problems. In addition, the concertation of shareholders, the existence of large institutional or non-institutional shareholders or the duality director - chairman do not have a significant impact on the entry into financial difficulties.

In a study that analyzes all firms in a country, for which data were available (around 170,000 observations, over a 6-year period), Dyrberg (2004) regroups the variables to be considered for early identification of financial difficulties: age of the company, long-term debt to total assets, economic profitability, leverage and size of the company. To that, he adds proxy variables such as diversification of activity and concentration (for uncertainty), the existence of a majority shareholder or of a majority-owned subsidiaries (for motivation), critical comments from auditors (for ability).

Asquit *et al*. (1994) find a number of factors influencing the restructuring process of firms in financial distress: restructuring of bank loans, restructuring of debt from bonds, sale of assets, financial structure before and after entering in difficulty, financial performance, decreased investment.

Among the consequences of financial difficulties may be the divestment, i.e. the disposal of fixed assets in order to restructure the business and/or to obtain the money needed for recovery and to avoid bankruptcy. Lasfer *et al.* (1996) found, on a sample of listed British firms in financial difficulty, that the disposal of assets has positive effects on the financial health of the firms involved and the reaction of investors. Along the same lines, reduced investment can have a positive effect on the firm's ability to overcome financial problems (Kane and Richardson, 2002; Männasoo *et al*. 2017).

Companies with negative equity are considered undesirable and it is recommended that they leave the market as soon as possible (Neagu *et al*., 2016). However, the specific way of doing business in Romania does not create the conditions for the disappearance of companies with negative equity. Of course, such suggestions come from financial, tax or monetary authorities who want solid companies from which to collect taxes and from which to earn interest and commissions (in the case of banks, supported by the National Bank of Romania - NBR).

The difficulties generated in Romania by companies with negative equity are also manifested because they report 19% of employees in the companies' sector, generate 10% of turnover and have 17% of total debt and contribute significantly to public budgets (Neagu *et al*., 2016). Geageac and Dana (2020) consider that the existence of negative equity in a company drastically limits its access to external financing in the form of loans or grants in the form of European or national funds.

Shareholders matter in terms of overall profitability. Thus, Neagu *et al*. (2016) finds that companies with domestic shareholders report a higher ROE than companies with foreign shareholders.

Wang and Deng (2006) analyze firms in difficulty and find that the state ownership makes them react differently to factors that could lead to financial difficulties. Sayari and Simga Mugan (2013) analyze the component structure of cash flows from the three activities for companies in financial difficulty and find elements that allow them to appreciate that this structure is particular to the companies analyzed.

In the case of companies in financial difficulty, there is the problem of survival: Kahl (2001) estimates that a third of American companies in such a situation manage to survive as independent companies, the rest being taken over or liquidated.

Cao *et al*. (2017) examines how auditors react - in their going concern opinion - to the policies of firms in difficulty regarding dividend payments or purchase of own shares made by these firms and finds that for firms where these cash flows have increased, it is less likely to express an audit going concern opinion and also the likelihood of these companies going bankrupt is lower over a 2-3-year horizon.

The main reasons for entering a difficult financial situation, for a sample of Polish companies, are: the low degree of liquidity and profitability, to which is added the high leverage (Gruszczynski, 2004).

In the case of BSE, an analysis of the predictive power of some models based on financial indicators, in the sense of characterizing companies with difficulties, can be found in Ruxanda *et al*. (2018). Another study referring to companies listed on BVB (on the regulated market) finds that the transition to IFRS has influenced different performing companies differently, compared to those in financial difficulties (Istrate *et al*., 2015).

One of the ways in which equity can increase can be the transformation of creditors into shareholders. In Romania, this way is even more probable, as, often, the associates are creditors of the companies they own, making available to them, since the establishment with a share capital of 200 lei, important amounts in the form of loans. Other creditors could also become shareholders if they believe that the company's chances of survival are reasonably high. Kahl (2001) finds that American firms in which creditors become shareholders are more likely to survive a period of financial hardship.

Firms in financial distress - if they are listed on a financial market or if they meet other criteria - are subject to the obligation to audit their financial statements. The financial auditor's mission is also to estimate the viability of the company's activity and to determine whether, in expressing the opinion, it should refer to the going concern assumption (Cao *et al*., 2017). An opinion or an observation regarding the going concern can seriously influence the analyses that users make about the respective company. However, before expressing a going concern opinion, the auditor must analyze the company's plans regarding the recovering from the financial difficulties.

3. Content of tax facilities granted in connection with equity

The authorities consider that the existence of many firms in difficulty is a serious problem of the economy and intend to take action to support them. Such measures can be of effective financial support, but also of granting bonuses to those who change their financial profile. On this last variant, GEO 153/2020 was adopted. It states that Romanian companies, regardless of whether they pay income tax, tax on revenues or specific tax, benefit from an annual reduction of 2% of the tax payable, if the equity is positive in the year for which the tax is due and their level is at least ½ of the share capital. Taxpayers with specifically regulated financial activities are excluded from these facilities. Other facilities (cumulative with the 2% share mentioned above) are granted depending on the year-on-year increase of equity; this second set of facilities can go up to 10% of the tax due. A third series of tax reductions (by 3%) is granted to increase equity compared to 2020.

This measure was considered necessary because the number of companies with negative equity and the cumulative value of these capitals were reasons for concern about the evolution of Romanian capital. In the substantiation note of GEO 153/2020, I find a description of the current situation (table 1).

Table 1. **Romanian companies reporting negative equity**

Year	Income tax payers		Payers of tax on revenues (micro-enterprises)		Specific tax payers (HORECA)		Total	
	Number of firms	**Value of the negative equity (mil. lei)**	**Number of firms**	**Value of the negative equity (mil. lei)**	**Number of Firms**	**Value of the negative equity (mil. lei)**	**Number of firms**	**Value of the negative equity (mil. lei)**
2014	78,047	-112,161	240,549	-32,996	n.a.	n.a.	318,596	-145,157
2015	59,935	-116,138	229,991	-35,986	n.a.	n.a.	289,926	-152,124
2016	49,531	-119,061	235,869	-38,310	n.a.	n.a.	285,400	-157,371
2017	18,094	-97,709	260,561	-50,463	222	-4,736	278,655	-148,172
2018	16,988	-101,878	261,021	-57,932	193	-5,784	278,009	-159,810

(Source: Note substantiating the Government Emergency Ordinance for the establishment of fiscal measures to stimulate the maintenance/increase of equity, as well as for the completion of some normative acts, on https://sgg.gov.ro/new/wp-content /uploads/2020/09/NF-9.pdf, accessed at February 6, 2021)

In the context of GEO 153/2020, the equity that are taken into account in establishing the allowances to be received are slightly different from the accounting equity, the ordinance calling them adjusted equity. There are three major differences from the figure reported in the balance sheet of companies in the position of equity:

- Revaluation reserves are not taken into account in determining the adjusted equity, which confirms the opinion of Neagu *et al*. (2016) about this component;
- In the case of income from the past years and not yet distributed, only the positive difference between credit and debit balances is taken into account; I understand from this that, if, on the whole, the synthetic account has a debit balance, it is not taken into account when calculating the amount on which the bonus is based. However, this deferred loss enters into the determination of the amount of equity that is compared with ½ of the share capital, so it intervenes in this way in determining the bonus;
- The net income for the year is not taken into account when determining the adjusted equity.

4. Methodology and data

The financial difficulties of companies can be measured by establishing indicators or scores in many ways. The simplest way to identify these companies is to interpret the leverage: a very high leverage can be a signal that the company is having financial difficulties. Another indicator would be to cover interest expense on operating income or EBITDA. I retain, in a first phase, only the companies with negative equity; continuing the analysis, I consider the companies for which the equity becomes negative after eliminating the revaluation reserves. In addition, because the Romanian company law establishes specific obligations that can lead to dissolution, when the equity becomes less than ½ of the share capital, I also counted the companies for which this minimum of equity (from which I eliminated the reserves from revaluation) is not achieved.

Not having access to data on all Romanian companies, I limit the analysis to the companies listed on the Bucharest Stock Exchange, both on the regulated market and on the alternative market AeRo. The data I analyze refer to the persistence of negative equity over time, the auditor's report, which may contain references to this difficulties, the existence of a majority shareholder or the presence of the state among the company's shareholders.

The proportion of share capital in total gives the quality of equity (according to Neagu *et al*., 2016); it is considered that the increased share of revaluation reserves is not exactly an indicator of good quality of the equity reported.

The population analyzed is composed of non-financial companies listed on the Bucharest Stock Exchange (BSE), both on the regulated market (table 2) and on the alternative market AeRo (table 3); I took over the data collected manually from the individual financial statements of the respective companies – very few consolidate.

For the first segment (regulated market), I found data available for the period 2002-2019; I started with 2002, because it can be considered the first financial year in which large companies (including all listed companies) apply, in a reasonable way, accounting rules harmonized with European directives and even with international accounting standards. The regulation in force at the time (OMFP 94/2001) was intended to harmonize, in an original way, European directives and international standards and applied from the financial statements of the year 2000, but for a small number of companies (including those listed on the BSE), following that their number will increase, according to a calendar proposed according to the size of the companies, measured by total assets, sales and number of employees. Istrate (2006) finds that the application of these new rules has been done in an approximate manner. I eliminated the years 2000 and 2001 from the analysis because the availability of data was limited, but also because I suspect that the financial statements were prepared with difficulty, given the major innovations brought by the new regulations, compared to those applied until that time. Also for companies listed on the regulated market, it must be said that the rules applied for financial reporting in individual accounting complied with European directives (between 2006 and 2011), after which IFRSs were applied.

The companies listed on the alternative market apply exclusively the Romanian Accounting Standards – RAS – (according to the European directives) - I found relevant data for the period 2010 - 2019, much shorter than the one related to the companies listed on the regulated market.

The elimination of financial firms is justified mainly by the different nature of their regulation and supervision, but also by the fact that, throughout the period, only one bank had serious financial problems and solved them through a merger approved by the NBR.

Table 2. **Romanian companies listed on the regulated market of the BVB, in financial distress**

Year	Total observations	Observations with negative accounting equity		Observations with equity under ½ of the share capital		Observations with negative accounting equity, after eliminating revaluation reserves	
		N	*%*	*N*	*%*	*N*	*%*
2019	68	9	13.24	12	17.65	**10**	**14.71**
2018	70	10	14.29	13	18.57	**11**	**15.71**
2017	72	11	15.28	13	18.06	**12**	**16.67**

Year	Total observations	Observations with negative accounting equity		Observations with equity under ½ of the share capital		Observations with negative accounting equity, after eliminating revaluation reserves	
		N	*%*	*N*	*%*	*N*	*%*
2016	74	11	14.86	14	18.92	**12**	**16.22**
2015	73	8	10.96	14	19.18	**12**	**16.44**
2014	75	7	9.33	12	16.00	**11**	**14.67**
2013	77	9	11.69	12	15.58	**13**	**16.88**
2012	75	7	9.33	10	13.33	**11**	**14.67**
2011	78	6	7.69	7	8.97	**10**	**12.82**
2010	78	3	3.85	6	7.69	**8**	**10.26**
2009	79	1	1.27	2	2.53	**4**	**5.06**
2008	78	1	1.28	1	1.28	**3**	**3.85**
2007	79	1	1.27	1	1.27	**3**	**3.80**
2006	72	0	0.00	1	1.39	**4**	**5.56**
2005	71	0	0.00	0	0.00	**4**	**5.63**
2004	70	2	2.86	3	4.29	**6**	**8.57**
2003	61	3	4.92	4	6.56	**8**	**13.11**
2002	51	1	1.96	2	3.92	**6**	**11.76**
Total	**1,301**	**90**	**6.92**	**127**	**9.76**	**148**	**11.38**

It should be mentioned once again that, in table 2, the data for the period 2012-2019 are extracted from IFRS financial statements. The data for the period 2006-2011 are from financial statements prepared by applying Romanian rules harmonized with the European directives. For the period 2002-2005, the financial statements were based on Romanian standards harmonized with the European directives and with the international accounting standards. There may be differences justified by the financial reporting standards applied, but I start from the premise that they are not necessarily significant, based on the fact that Istrate (2015) finds that the persistence of accounting policies applied by Romanian companies that change the financial reporting framework is quite pronounced. However, I have to notice that the period of application of IFRS (2012-2019) shows weights of companies with financial difficulties much higher than the previous periods. In addition, the financial crisis started in 2008 seems to have had a significant effect on the number of companies listed on the regulated market of BVB and in difficulty: compared to the share of around 5%, in the period 2005-2009, it passes suddenly to over 10% starting with 2010, with relatively increasing shares in the following years. These results seem to confirm the assessment of Männasoo *et al.* (2017), which states that Romania, along with Bulgaria, Lithuania, Latvia and Hungary, is one of the countries hardest hit by the 2008 financial crisis.

Table 3. **Romanian companies listed on the AeRo market of the BVB, in financial distress**

Year	Total observations	Observations with negative accounting equity		Observations with equity under ½ of the share capital		Observations with negative accounting equity, after eliminating revaluation reserves	
		N	*%*	*N*	*%*	*N*	*%*
2019	267	11	4.12	22	8.24	**35**	**13.11**
2018	286	13	4.55	25	8.74	**43**	**15.03**
2017	294	12	4.08	23	7.82	**48**	**16.33**
2016	302	10	3.31	23	7.62	**46**	**15.23**
2015	304	8	2.63	21	6.91	**40**	**13.16**

Year	Total observations	Observations with negative accounting equity		Observations with equity under ½ of the share capital		Observations with negative accounting equity, after eliminating revaluation reserves	
		N	*%*	*N*	*%*	*N*	*%*
2014	312	9	2.88	20	6.41	**44**	**14.10**
2013	312	10	3.21	22	7.05	**41**	**13.14**
2012	311	8	2.57	19	6.11	**39**	**12.54**
2011	303	8	2.64	16	5.28	**31**	**10.23**
2010	296	6	2.03	13	4.39	**27**	**9.12**
Total	**2,987**	**95**	**3.18**	**204**	**6.83**	**394**	**13.19**

Although it is slightly increasing, the share of companies listed on AeRo, with financial difficulties, remains over 10%, with a maximum in 2017 and a minimum in 2010.

5. Results

5.1. On the regulated market

In table 2 above, I highlighted the companies that can be qualified as being in financial distress, through a direct consideration of the indicators on equity. It is also necessary to show whether, for some companies, the difficult financial situation is manifested over a long period or if it is only occasional. For this, in table 4, I presented the number of years in which companies have difficulties, according to the indicators retained by us regarding equity. As for the total number of observations, the situation is similar.

I notice that the revaluation reserves are important, the number of companies with positive equity only due to the revaluation being 25 - 17 = 8, i.e. 50% is added to the number of those with negative total equity.

If the analysis starts with the companies with the longest periods of financial difficulties (7 years or more with negative equity, after removing the revaluation reserves), I notice that of all the 7 companies in this situation, none managed to recover credibly by the end of 2019, even one of them was delisted due to bankruptcy. For 3 of the 7 companies, the financial problems manifested during the whole period (2002-2019), while for the others, the difficulties started in 2010 and 2011 (one case each), respectively in 2013 (two cases).

Table 4. **Years on financial distress for the companies listed on the regulated market of BVB**

Number of years of financial distress	Number of companies with accounting negative equity	Number of companies with equity below ½ of the share capital	Number of companies with negative equity after eliminating the revaluation reserve
1	1	4	**3**
2	4	1	**4**
3	2	3	**3**
4	3	2	**4**
5	1	3	**4**
6		1	
7	1	1	**2**
8	2	1	

Number of years of financial distress	Number of companies with accounting negative equity	Number of companies with equity below ½ of the share capital	Number of companies with negative equity after eliminating the revaluation reserve
9	1	2	
10		1	**1**
11		1	
12	1	1	
14	1	1	
15			**1**
17			**1**
18			**2**
Total	**17 distinct companies, 90 observations**	**22 distinct companies, 124 observations**	**25 distinct companies, 148 observations**

The resilience of these companies over time is remarkable, despite the serious problems they have encountered. In a way, we can understand the optimism of the management of these companies, when they declare, without exception, that the financial statements have been prepared in conditions of going concern assumption. This statement has sometimes been accepted even by financial auditors, who make no going concern mention in their audit reports in the early days of financial problems for three of the companies (still operating). There are, in total, 8 such reports without mentioning the difficult situation (two signed by a Big 4, the rest being issued by local auditors), even if companies report negative figures to equity, after eliminating the revaluation reserves. All three companies had, at the time of entering into financial difficulties (as at present), a majority private shareholder which, most likely, controlled those companies. In all other situations (except for three observations, for which I did not find the audit report), the auditor shows professional skepticism and issues a going concern opinion: 48 times as an explanation of the modified audit opinion and 78 or in the emphasis of matters paragraph. There are 7 situations in which the reference to the going concern is made and in the justification of the modified opinion and in the emphasis of matters paragraph.

Continuing the analysis with the companies for which the identification of financial difficulties is done for a shorter period, I identify here three categories:

a. Companies with difficulties that have delisted (probably because of those difficulties) and no longer have public financial statements:

- Four companies fall into this category, with a total of 17 observations;
- In the case of 13 of these observations, the auditor refers to the going concern risks (three times to justify the modified opinion and 12 times in the emphasis of matters - there are two situations of presence of the reference in both parts of the report); in four cases (of which three for a single firm), the auditor has no concern about the continuity of those firms that subsequently withdrew from listing, including through bankruptcy;
- With one exception (in which the majority shareholder holds just over 30%), in other cases there is a majority shareholder with (much) more than 50% of the shares;

b. Companies that have gone through financial difficulties for a shorter period of time, but which have recovered and are currently reporting financial statements with acceptable financial indicators:

- In this category I included nine companies, with a total number of 21 observations;
- The difficulties of these companies appear in the period 2002 - 2004 (in five cases), in the period of the global financial crisis started in 2008 (only one case) and in the period 2011 - 2013 (three companies);
- The managers of these companies are also optimistic, declaring that there are no going concern problems; however, the auditors put in their reports some observations on the going concern assumption; three times to justify the modified opinion (two Big 4) and 6 times (five Big 4) in the emphasis of matter paragraph; in all other reports (only one from a Big 4) no reference is made to the going concern;
- For only three of these companies, the majority shareholder has over 50%, once the state is the holder of the control package;

c. Companies that have entered financial difficulties recently, and that have not yet recovered, but are still listed:

- Six companies are included here, with a total number of 18 observations;
- In most cases, difficulties such as negative equity are accompanied by a sharp decline in sales;
- In five observations (4 different companies), the auditors (all local) do not mention in the audit report the risk of business continuity; otherwise, there are eight mentions on the going concern matters in justifying the modified opinion and another five such mentions only in the emphasis of matters paragraph;
- For these six companies, there is only one case in which the majority shareholder holds less than 40%, given that the next shareholder owns much less.

Given the fact that state-owned firms behave differently from others in the face of the factors generating difficult financial situations (Wang and Deng, 2006), I also looked at the main shareholder of firms identified as having negative or insufficient equity. I found only one company on the regulated market and one on the AeRo market, so I do not think it is significant to consider this variable.

Cao *et al.* (2017) find that the literature suggests that auditors do not always issue a going concern opinion as a warning signal to investors that the firm has a significant probability of going bankrupt. Optimistic forecasts of the management of companies in difficulty - the managers in the sample I analyzed all consider (with one exception, on AeRo) that the company operates in continuity - can influence the audit opinion, but in many situations, I find different estimates of auditors compared to those of the management. Feng and Li (2014) find that going concern opinions are negatively associated with the optimism of the management of firms in difficulty, as a result of auditors' exercise of professional skepticism.

5.2. On the alternative market AeRo

In Table 3, I found 394 observations in which equity is negative, after removing the revaluation reserves. In Table 5, which follows, I group these observations by number of years of financial difficulties and by number of companies in this situation.

Table 5. **Years on financial distress for the companies listed on the AeRo market of BVB**

Number of years of financial distress	Number of companies with accounting negative equity	Number of companies with equity below ½ of the share capital	Number of companies with negative equity after eliminating the revaluation reserve
1	5	15	16
2	6	7	7
3	2	9	8
4	6	7	10
5	3	4	9
6	1	4	4
7		2	2
8	1	2	9
9	1	4	5
10	1	1	10
Total	**27 distinct companies, 95 observations**	**55 distinct companies, 204 observations**	**80 distinct companies, 394 observations**

For companies listed on AeRo, revaluation reserves appear to be much more important than on the regulated market, in terms of the impact on equity: the elimination of this structure causes the number of observations with negative equity to increase almost fourfold, compared with 50% growth in the regulated market.

I first analyze the companies for which the financial difficulties are recorded for a period of five years or more: there are 39 such companies, with a total of 300 observations - i.e. most of the 394 observations found in Table 5, on the column of companies with negative equity, after removing the revaluation reserves. Out of the 300 observations, I found 266 audit reports (89%). Of these, I have 79 reports without references to possible going concern risks (including in the case of 3 reports from Big 4). In justifying the modified opinion, I find the auditor's concerns about continuity in 48 reports, and in 116 cases going concern is present in the emphasis of matter paragraph (17 times, going concern appears in both parts of the reports). For 33 companies (out of 39) I found information on the majority shareholder and, in 30 cases, it holds more than 40%.

For the 41 companies on AeRo (with 94 observations), whose financial difficulties are manifested in less than five years, as well as for the companies listed on the regulated market, I divided the three categories presented above (considering negative equity, after revaluation reserves):

a. Companies with difficulties that have delisted:
- 11 companies are in this situation, for a number of 27 observations; in the case of seven of these companies, the delisting is explicitly justified by bankruptcy or liquidation, for other reasons or by their absorption as a result of a merger;
- Out of the 27 observations, I found audit reports in 19 cases and in nine of them, the audit report does not contain any mention of going concern issues (a report issued by Big 4); the other reports contain assessments of the risks on going concern in the justification of the modified opinion (one case) and in the emphasis of matters paragraph (nine cases);

- In one case out of the 11 companies, the majority shareholder holds less than 40% (but without someone else owning a significant percentage); in all the others there is a shareholder who clearly controls the respective companies;

b. Companies that have gone through financial difficulties for a shorter period of time, but which have recovered and are currently reporting financial statements with acceptable financial indicators:

- 14 companies can be included here, for a number of 26 observations; recovering consists of growing sales and equity (without revaluation reserves), also positive and increasing;
- Out of the 26 observations related to these companies, 24 audit reports are available, of which 19 have no mention of going concern (including a Big 4): the optimism of the managers and their forecasts were convincing enough for the auditors and they were even confirmed, because those companies have recovered financially; in only five cases (a justification for the modified opinion and four references in the emphasis of matters paragraph), the auditor includes going concerns in the report;
- In 6 of the companies that have recovered, there are at least two important shareholders, with equal or close shares; the other 8 companies have clear majority shareholders, including the Romanian state (in two situations);

c. Companies that have financial difficulties, more or less recent, and that have not yet recovered, until the end of 2019, but are still listed:

- 16 companies fall into this category, for a total number of 41 observations (3 of the respective companies were in insolvency on 31.12.2019);
- In only 29 observations, the financial audit report was available; in 10 such reports there is no reference to going concern, in expressing the audit opinion (a report from Big 4); in the other reports, there are concerns about the continuity of the companies, either in the justification of the modified opinion (5 reports) or in the emphasis of matters paragraph (14 cases);
- In the case of four companies in this category, the majority shareholder holds less than 30% and does not control those companies alone; in other cases, there is a dominant shareholder, including central or local authorities of the Romanian state (for three companies).

6. Conclusions

The aim of the study was to highlight some characteristics of the Romanian listed companies in financial distress. The criterion I used for this classification is the negative value of equity, after eliminating the revaluation reserves - the latter being very common in the case of Romanian companies. I opted for an analysis of companies that meet this criterion because in Romania, data from the Ministry of Public Finance and the National Bank show that about a third of Romanian companies have this problem and because the authorities have decided to provide tax facilities to companies that reach positive equity and which maintain their growth trend. For a period of 18 years (2002-2019) and 1,301 observations related to the regulated segment of the financial market from BSE I found 11.38% observations (from 25 separate companies) that meet the criteria I proposed for characterizing financial difficulties. In addition, on the AeRo segment of BVB, out of 2,987 observations, related to the period 2010-2019, I counted

13.19% observations (coming from 80 distinct companies) with negative equity, after eliminating the revaluation reserves. A first finding - recurrent in the literature on Romanian companies - is that revaluation reserves have a very important role in forming the accounting equity. If we do not eliminate them, the share of observations with companies in difficulty would have been almost half for the regulated market (6.92 %) and less than a quarter (3.18%), in the case of companies on AeRo. To the fiscal arguments that explain the option of Romanian companies for revaluation (especially of buildings and land) can be added arguments of a financial nature, related to the attempt to report indicators - such as leverage - that are at acceptable levels.

Among the observations with negative equity (after removing the revaluation reserves), I identified, for each segment of the BSE, four categories:

- Companies with financial difficulties reported for more than half of the analyzed period (from 7 years to 18, for the regulated market and from 5 years to 10, for the AeRo market);
- Companies with difficulties for shorter periods and delisted;
- Companies with temporary difficulties and which have recovered financially; and, finally:
- Companies with difficulties during short periods, which at the end of 2019 did not overcome this situation.

The first category - companies with long-term difficulties - (7 companies on the regulated market, with 92 observations and 39 on AeRo, with 300 observations) seem to be condemned - none of them has recovered credibly, although the managers promise, at each financial year closure, that the going concern assumption is not threatened. It is noteworthy, however, that these companies even withstand negative capital in the long run, with the support of the majority shareholder or the support of the authorities, in some cases. However, among these companies, some have delisted, through bankruptcy or liquidations in other ways, most likely because of the difficulty of operating in these conditions. It should also be noted that, in some cases, for these companies, the auditor does not consider it necessary to express, in the audit report, going concern opinions or observations: 8 out of 92, for the regulated market and 79 out of 266, on the AeRo market.

In the case of companies with difficulties for a shorter period of time and which withdrew from listing, I found 4 cases (17 observations) on the regulated market and 11 on the AeRo market (27 observations). Even at these companies, there are several audit reports without going concern observations (only 2 on the regulated market and 9 on AeRo). Should auditors be less skeptical of smaller and less exposed companies on the AeRo than of the most visible on the regulated market?

The companies with short-term difficulties and which seem to have recovered, from a financial point of view, at the end of 2019, are in number of 9 (with 21 observations) and, respectively, 14 (with 26 observations), on the two segments of the BVB. For this category, auditors seem more convinced by the management's arguments for ensuring continuity, limiting the share of audit reports with going concern opinion or observations: 9 out of 21 in the main segment and 5 out of 24 on AeRo.

Finally, the last category - companies with financial difficulties in relatively short terms, but which did not come out of this situation - includes 6 companies (with 18 observations) on the regulated market and 16 companies (with 41 observations) on AeRo. Here, too, the auditors are mostly skeptical, i.e. the audit reports with going concern opinion or observations are the majority: 13 out of 18, on the first market segment and 19 out of 29, on the AeRo market.

The most important limitation of the study is precisely its descriptive character. The small number of companies that make up the analyzed population does not allow any generalizations in the Romanian economy. Comparison with the situation of other states in the same geographical area with Romania could bring new and interesting results.

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Financial Management of Family Firms

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Abstract:

Idea: *This paper aims to explore how family firms manage their finances. The business model of family firms usually differs from the common desire to maximize profit. In many cases, it is the family character of the firm's management that does not allow the members to solve the financial matter with adequate knowledge and attention.*

Data and Tools: *We employ the case study method analyzing typical business situations in four family firms involved in agriculture and services. More specifically, we use the semi-structured interviews with open-ended questions to prompt discussion.*

What's new? *Our findings reveal that financial matters are not the core interest of the family firms' owners. Investigated firms only pay a marginal attention to financial issues, such as budget preparation or assessment of achieved results, financial structure and other financial matters. They use their own expertise to cover the tasks of the firm.*

So what? *We have found that family firms do not perceive financial matters as anything urgent. In the Czech Republic, there is no obligation to exercise any form of systematic financial reporting for companies with lower assets and turnover lower than CZK 3 mil (EUR 115 thousand).*

Contribution: *Our research confirms that family firms tend to be conservative in developing their financial structure. The level of financial literacy depends on the education of family members and on their business expertise. Financial information is often considered an affair of an outside accountant and is frequently performed externally with the main goal to minimize their tax liability.*

Keywords: *Family firms, decision-making, risk aversion, financial literacy, business model.*

1. Introduction and motivation

Family firms as a part of small and medium enterprises constitute a large portion of each country's economy. This paper aims to explore how family firms manage their finances and what is the level of their financial literacy. The business model of family firms usually differs from the common business model aimed at maximization of business profit. Their founders-managers usually want to bring some more value to their family or local community or the environment. The nature of such business determines how family firms organize their financial matters, which in many cases is a cause of their risk and instability. In many cases, it is the family character of the firm's management that does not allow the members to solve the financial matter with adequate knowledge and attention Dyer (1988); Sonfield and Lussier (2004); Burkart, Panunzi, & Shleifer (2003).

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This topic is interesting because the management of the family firm is not necessarily qualified in the field of finance and financial literacy, and management responsible for financial matters (financial director, accountant, but also sales and marketing director) does not necessarily have any formal financial training. The reason is that family companies, as the name suggests, consist mainly of family members who often do not have to go through any admission procedure and thus the usual qualification is often not required.

This research uses a qualitative method of exploration - a questionnaire and semi-structured interviews exploring the approach financing and financial literacy of the owner and, where applicable, other members of the management team. The financial results of family firms depend on the literacy of family members and the skills of their management. The complexity of the structure depends on the size of the company.

Our case studies have disclosed that in these companies, significant majority of employees are family members, including members of the wider family circle. However, only members of the close family circle are appointed to top managerial positions. It is noteworthy that all family businesses consider the family background to be their biggest asset and focus very much on the quality of their output (family brand).

All surveyed companies were also established purely based on their equity, even in cases where a relatively large amount of capital was initially required. Subsequently, half of the companies used bank credit to finance their growth. Family businesses are also relatively successful in avoiding financial crises. Only one out of the sample of our companies was negatively affected by the financial crisis in the past.

The style of financial management is based not only on the founders' own experience, but it also corresponds to the very nature of these companies, their history, size, and the field of business or structure. Each founder thus manages finances based on his or her judgment and experience. The management style is not based on any theoretical knowledge or textbook lessons.

These findings cannot be generalized because of the limited size of our sample. Nevertheless, we believe that this work and in particular the management style of family firms can provide the basis for further exploration of this issue on a wider sample possibly in different industries.

2. Literature review

Family business is a large part of each national economy. Many firms constitute very vivid part of local economy that can nurture innovations and can help local communities, especially when the business subsequently grows to significant extent or faces special opportunities or crises.

Role of family business and importance of family business for economy was discussed by Bertrand and Schoar (2006). The authors approached the topic from general perspective both historically and furthermore from the perspective of internal organization of family businesses, interior ties, and control mechanisms, considering implications of family control for the governance, financing, and overall performance of family businesses.

Comprehensive overview of family firms' practices offers edited book by Melin *et al.* (2013) which deliver multidisciplinary overview on varied aspects of family firms. This ranges from theoretical perspectives of family business, special issues of family business studies e.g., financial performance and governance and management succession, entrepreneurial and managerial aspects of family business studies accountancy and stewardship through to the future of family business research and next generation of family business scholars.

Financial management of family firms was explored by Hiebl (2012), here he analyses special features of financial management of family firms, suggesting that they are likely to use fewer short-term-oriented financial-management practices than non-family firms. The same author (2013) explores issues of risk and risk aversion in family firms. Amit and Villalonga (2014) concentrate on accounting and financing of family firms reporting evidence suggesting unresolved issues in the accounting literature and so-far-neglected dimensions of the family business entity and financial performance of family businesses. Furthermore, Di Giuli *et al*. (2011) explore financial sophistication in small family firms. Which is defined as the use of non-basic financial products such as options, swaps, debt restructuring, and mergers and acquisitions (M&A) advisory services.

Financial performance of family firms was assessed by Miller *et al*. (2007) exploring whether family firms are superior performers. Eddleston *et al*. (2008) explored the links between used resources, strategic planning, technological opportunities and performance distinguishing between lone founder and family firms. Corporate governance and family firm performance was explored by Brenes *et al*. (2011).

Further specifics of financial management in family firms became a topic of research papers in the last three years (Omar *et al*., 2017, Bialek-Jaworska *et al*. (2019), Franjic (2019), Molina-García *et al. (*2020). Researchers are focusing on the various aspects of the application of financial knowledge in these firms: on the effect of financial background on the firms' performance, on the growth of family businesses, on the way they manage their finance and how they address the concept of sustainability (MacGregor Pelikánová *et al.*, 2021). The results highlight the importance of owners' adequate financial education as a condition for improving the firms' performance and facing the future challenges.

Notion whether family firms are better employers than traditional firms was explored by Neckebrouck *et al*. (2018) and Gottschalck *et al*. (2020), who also added perspective of non-family professional experts employed by family firms.

Behavior of family business during crises was a subject of research of Leppäaho and Ritala (2021) who claim that crisis can be an impulse for introduction of changes and innovations in rather conservative business in other times. Impact of COVID-19 was explored by Kraus *et al*. (2020), who explored how family firms in five European countries cope with the corona crisis.

3. Method and data

We employ a holistic concept trying to capture the broad context of each family firm including their history and their major business attributes as well as the way of financing the venture. More particularly, we employ the case study approach using a questionnaire targeted at the CEO and/or CFO of selected family firms. In some cases, only one person was occupying both positions. The specific feature of our research subject is a frequent blending of family and firm finance, which is sometimes difficult to disaggregate.

The study analyses typical business situations in four family firms involved in agriculture and services. We use the semi-structured interviews with open-ended questions to prompt discussion with firm owners. This approach allows us to discuss the business experience of firm members and to find how they deal with the selected financial situation in details. We concentrate on the usual common tasks of financial management, e.g., preparation of budgets, financial planning, cash flow management, and assessment of results.

As to the questionnaire: In the first part, we assess the general description of the family business. In the second part, we enquire about the financial management of the company, and finally, we ask about the level of financial literacy as the company member assesses it.

Part 1 – General characteristics - questions on the company business, its management and structure

a. Describe your position in the company.
b. How were the initial steps of your business as a startup organized and who ran the finances at the beginning?
c. Did you start the company relying solely on your own resources (e.g., from your savings) or have you employed any other source (e.g., a loan)?
d. How did the company develop over time in terms of the complex business structure?
e. How would you define the strengths and weaknesses of the company?
f. Which feature would you consider the most important attribute of your business?

Part 2 – Financial management of the company

a. What is the current capital structure of your company? (Debt-Equity mix).
b. Did your company get into any financial difficulties? How did you deal with them?
c. Do you perceive taking a bank loan a risky solution?
d. Do you set up any financial goals for your company? Do you create any budgets for the company? If so, please explain. Do you use the discounting method when deciding on future actions?
e. Have you implemented any large investment project? If so, how did you finance that project?
f. Do you intentionally create any reserves (or so-called cash cushion) for possible financial problems / negative developments of the company?

Part 3 – Financial training and experience of managers

a. What is the field of education (major) of your company founder / CFO)?

b. Have you or your company founder or CFO attended any specialized courses on company finance (i.e., workshops or seminars focused on financial management in a family business or on financial management in general)? If so, which ones?
c. If a family member took up the position of a financial manager, what was their preparation for this position (field of study, internship ...)?
d. If you as an owner have managed the company finances, at which point/time did you hire a CFO or employ another family member for this position?
e. Are you carrying out any analyses of your company's financial situation?
f. What financial indicators do you use for your financial management?
g. How do you manage the generated profit (retained profit) of the company?

Part 4 – Financial literacy of the owner or CFO and issues of personal finances

a. Could you explain the basic concepts of financial decision-making?
b. Are you generating any savings as a person? If so, do you use any services such as a savings account, building savings, etc., or do you invest your saved money in capital assets?
c. Do you have any personal financial goals? Do you create any household budgets?
d. Do you use any ready-made web-based applications to track your finances? Please, specify.

Based on our structured questions, we expect to obtain a holistic picture of the management of family companies and to obtain insight into their finances. At the same time, we ascribe to learn a bit about the specificities of family firms in today's rather hectic conditions around the coronavirus crisis.

4. Findings

For the purposes of the research, four family businesses were selected, purposefully from different fields of business, with different structures and histories, in order to obtain data on diverse conditions of family businesses.

Case study No. 1 – Firm A operating in the field of services

This company has been providing services in the field of bookkeeping since 1991. It is currently operating in the legal form of a limited liability company owned by the son of the original founder. Until then, the founder operated as a natural person and created a portfolio of customers, which he gradually passed on to his son. In 2018, the granddaughter of the founder also started working in this area, and this was the impetus for a change of the legal form, where the son and granddaughter are the current co-owners.

The education of the son is a university degree in the field of agricultural production. His daughter, the second co-owner, also graduated from university, majoring in marketing communication. However, she does not consider her education and qualifications in a certain field to be decisive:

> *"Education is, of course, important and it can make starting a business much easier. But it is not an ultimate prerequisite for running a successful venture. In this respect, practice is much more relevant. The ability to try new activities and*

the courage to take risks is critical. The help of your parents is also important." [Respondent A]

Financial management service is based on providing consultations to a permanent portfolio of customers. The management of cash flows and the monitoring of indicators mainly represent the bookkeeping and management of financial processes: ROE, liquidity, CF, EBIT. However, monitoring is not performed systematically. No financial plan or budget is created. Expenditures – both corporate and personal - are monitored simultaneously on a cash flow basis. Mobile applications are used for their control and evidence. Financial literacy in the direction of the ability to rationally regulate financial processes is the result of practice in the company. This has now been expanded by the studies of the current co-owner-daughter of the founder.

Case study No. 2 – Firm B operating in the field of food production

The second company is engaged in the production of cider drinks. The firm was founded in 2016. The founder and his wife left the city for the countryside in 2005. Previously he worked in the city as a crisis manager and his wife was active in marketing. In a new place, he wanted to test his business skills in the field of crafts (carpenter, interior designer) and his wife in the hospitality industry.

Both have a high school diploma. Husband in economics, and the wife from comprehensive school. During their operations in restaurant, they became interested in the cider drink, purchased from a local supplier. Subsequently they decided to produce it on their own. Even before founding the company, the husband studied courses on arboriculture at university.

The couple founded the company "Dad's Orchard" in 2016 after two years of trial production. The founder owns the company. His wife works as a natural person and a cooperating family member. The couple execute the whole production process. They hire external workers for seasonal jobs and their young children help. The husband manages and supervises the technological processes; the wife is in charge of the administration, business and finance. Their aim is to keep production to an extent that is sufficient for their conditions and their own strength.

Neither ambitious financial goals nor profit orientation were important for the founders: the goal when starting a business was "*not to get rich, but to return to a natural way of living"*. [Respondent B]

The company did not yet encounter any financial problems. They solved the difficult situation in the year of the pandemic by setting up and expanding internet sales. A good reputation and brand also helped - people came to shop automatically. The husband sees a serious threat only in climate change and the droughts that have plagued farmers in recent years.

The financial side of the company is taken care of by founder's wife, but they consult on important decisions together. Although they have work experience and a basic knowledge of finance, they usually make decisions based on "common sense". They founded the company and financed it mainly with their own capital, but they used a bank loan to expand their production. They do not consider taking bank credit a risky decision if there is a well-thought-out project behind it. For another project, they draw subsidies from the Rural Development Fund.

Although the company had almost no sales in 2020, the founders did not get into financial troubles, thanks to the reserve created from the profit in previous years. The founders invest all the profit in the company; they either keep it as a reserve or use it to expand production.

They try to create financial plans based on customer demand. They evaluate the company's financial situation according to turnover, profit and the number and size of customers' orders. They perform the analysis of their results continuously, not on any specific date, which gives them a constant overview. However, they do not mention the use of any specific financial indicators. They do not calculate the return on investment in more detail.

> *"The goal is to lead a normal life on the farm, and not to get rich. The goal of our family firm the investment is to get the highest possible product quality, rather than becoming a millionaire."* [Respondent B]

Both partners are able to explain the basic concepts of financial decision-making and budgeting, but they do not systematically use them in the management of the company. Corporate and family finances are not separated. Apart from the current account in the bank, they do not use any other products and make their decisions according to the balance on the account. They do not use any savings account or building savings, which represent a very low level of risk, and instead they invest in riskier but more profitable assets.

Case study No. 3 – Firm C operating in the field of services and consulting

The third company provides consulting services in the field of food safety, production quality, agriculture, and trade. The firm was founded in 1998. The founder-owner of the company is an executive of the venture. With the increasing number of orders, he gradually hired employees - non-family members. The company's history is divided in two stages: an initial period, with four employees, when he performed all administrative and managerial activities himself, and a growth period, when the increase in orders required the recruitment of employees for management and administration. Gradually, the company's activities expanded internationally, and the firm established a foreign branch and introduced an e-shop.

The owner has university education in agriculture followed with a doctoral study in this field. After graduating, he worked at the university, and concurrently, he performed as a certified auditor and accredited advisor to the Ministry of Agriculture. He is therefore more than qualified for related consulting activity, albeit not in financial management.

His son and daughter are also involved in the company's activities, as well as his son-in-law. The son now holds the position of operations director and thus prepares to take over the company. The son holds a university degree, in the field of chemical technology; he has no specialized economic education. The daughter is a consultant for non-food products in the company. The son in law is an external collaborator and takes care of promotion. In addition, the company employs more than 20 employees (the number varies according to the season).

The founder considers the natural turnover of employees to be the weak point of the company. Full training of new manager lasts more than a year and the departure of a qualified colleague means a significant burden on the company. It also results in the insufficient management of business activities. He considers the good reputation and uniqueness of the company to be their strength. Another strong point is its family character and informal relationships with employees.

The owner provided financial management, but three years ago, he handed over the responsibility to his son. Nevertheless, the founder retains financial decision-making in his hands. Although neither of them has an economic or financial education, the father draws on his experience gained during the company's existence and passes it on to his son.

The company was established solely with the owner's own resources. Due to the nature of the company's activities, no major investments were needed. The resources needed for further development of the company (increasing the number of employees) were provided from the company's activities and the owner prefers this form of funding. As he says:

> *"The company has to earn money for its own development. A bank loan is too expensive and our firm does not need it."* [Respondent C]

The company got into trouble with the growing volume of activities, when the administrative agenda expanded and the company had to hire external employees, and concurrent decline in demand for consulting services. The owner solved the situation by increasing the company's equity.

The company does not set any financial goals. It focuses primarily on the quality of services offered. The company does not prepare any fixed budgets; they are created flexibly according to current needs during the year. The company purposefully creates a reserve in the range of two-month volume of resources needed to ensure the operation of the company. The reserve is represented by the owner's personal savings, which are separate from the company finances but are available if needed. They can be considered a silent reserve.

At the end of each year, the company performs a relatively detailed financial analysis of all products, across individual customers and activities. This analysis then becomes the basis for negotiations with clients for the forthcoming year.

For their analysis, the company uses a relatively large set of indicators: the ratio of total profitability, cost-effectiveness, profitability of individual activities, gross margin of individual types of services, and share and development of cost types. These data are the basis for pricing and preparation of new contracts for next year. The founder states that in this way, he has a sufficient overview and more sophisticated evaluation methods are not necessary.

The firm accounting is kept by a separate accountant who is an employee of the company. However, the data of the financial statements are not used to assess the overall financial situation. They serve to meet the reporting and tax obligations.

Part of the profit remains in the company in the form of a reserve, and another part of the profit is paid to the owner for additional deposit. Profit shares are also paid out.

The founder is able to explain the basic concepts of financial decision-making well. The personal financial goal is primarily to provide the financial means for the family. He can evaluate investment opportunities quite competently. From this point of view, the founder considers various forms of savings to be unprofitable and therefore prefers to invest free funds primarily in real estate. He uses modern technology and internet banking to control personal and corporate accounts.

Case study No. 4 – Firm D operating in the field of construction and transportation

The fourth company operates in the field of construction. Three persons, a father and two sons founded it in 1990. The subject of activity is business and construction activities, which expanded following the change of legal form to ltd in 1994. Namely, the company works in the field of construction of turnkey houses, including project preparation and it provides services in transport and rental of construction machinery. This brought the need to expand the number of professionals outside the founding family. The company solved this need partly by outsourcing, and partly by newly hired employees.

With further development, external workers switched to internal employment, which increased the number of the company's employees and increased the complexity of the internal structure. The whole situation had to be resolved because one of the sons left the company and then the father retired.

At present, the owners of the company are the son of the original owner and now also his son (the grandson of the original owner). Both are equal owners. Each of them manages their own division (sales and construction), however, they decide on all important decisions about the company together. The company also employs the daughter of the original partner and other family members. This is the second and third generation of the company.

The education of the current owner of the company is a university degree in the field of construction. However, he purposefully acquired the necessary financial knowledge through studies and consultations.

The founder regards the family background, reliability, good name in the field, flexibility, experience, company know-how, efficient organizational structure, reliable and stable suppliers and quality and fast service to be the main strengths of the venture.

He considers their conservatism and their reluctance to engage in large contracts to be their weakness. Due to the fact, that the company is small, a large contract represents a big risk. The owner also considers the position of small business a disadvantage as it is impossible for them to obtain a larger loan. Another weak point is the branch of their operations, because it is very capital demanding. Further disadvantage is a slow capital turnover. Among the weaknesses, he also mentions insufficient marketing, especially in the online sphere.

The company also employs an accountant and an economist, but the financial decision is still solely in the hands of the founder.

Although building and transport is considered to be rather capital-intensive industry, the company was established exclusively from own equity. However, the later expansion of activities required an additional resource in the form of a bank loan.

At present, the company is financed with equity and short-term borrowings in the form of liabilities, short-term assistance, and leasing. The loan is considered risky without prior analysis of profitability and ability to repay. This indicates a certain degree of financial literacy and prudence. However, the founder states that they prefer to avoid this method of financing.

According to the founder:

> *"The financial goal is primarily to keep the company running and running it profitably. We want to take care of employees and keep up the overall good operation of the company."* [Respondent D]

At present, the company is rather stagnating in terms of turnover, which is mainly due to the field of businesss and the fact that the founder of the company does not intend to expand their operation any further.

The company creates a reserve for crisis situations. The founder also uses a special banking product: a savings account for entrepreneurs.

In the area of financial management, the company does not create any budgets, not even for individual divisions.

The founder of the company always analyses the financial results at the end of the year. He also follows the partial results every month. The intention is to have an overview of the company's liquidity and other results, using financial indicators such as profitability, productivity, inventory turnover, etc. The generated profit is left in the company, most often in the form of reserves.

The founder can explain the basic concepts of financial management and decision-making. He saves regularly, but he does not use savings accounts because of their low interest rates. He does not invest in shares, for example, but invests money mainly in business, real estate and land. He prefers to invest a part of his income into insurance rather than put it on a savings account. He uses three insurances accounts: two life insurances and one pension insurance.

Nowadays, his only financial goal is to secure himself for retirement. In the household, the founder does not make any budgets. He monitors income and expenses mainly via the mobile banking application.

Table 1 summarizes specific features of companies in our sample.

To briefly summarize the opinion of managers of four family firms on financial literacy and experience gained in the business, it appears that financial management of companies, practical experience and personal practice, and learning from the environment in which an individual grows is, as a general principle, more influential for them than their own financial literacy or any formal economic education.

Furthermore, as we have also confirmed in the interviews that the goals of family firms are not usually to maximize the financial profit, but to strive for long-term sustainability and co-operation with their clients and suppliers. Moreover, the business founders of family firms would also like to hand over the business to the next generation in good order. However, as we have seen it the prior literature, the business rarely stays in hands of one family for more than three generations (Isaac, 2020). This dynamic after multiple generations is illustrated on firm D; nevertheless, we hesitate to claim that this would be a universal rule.

Table 1. **Key characteristics of family firms**

	Firm A	**Firm B**	**Firm C**	**Firm D**
Part 1			***General characteristics***	
Field of education of the owner (s)	a) Agriculture b) Marketing communication	a) Economic hi-school + specialty entrepreneurship b) Comprehensive education	a) Agricultural b) Chemical (son)	a) University degree in construction + further education
Division and performance of managerial functions	By agreement, as needed.	By agreement and specialty	Owner - top management + Hired workers for specific areas	Two divisions headed by the two founders - father and son
Source of capital endowment at the inception	Own capital exclusively	Own capital exclusively	Own capital exclusively	Own capital exclusively
Additional sources of capital	Own capital	Own capital, bank loan, subsidies	Own capital	Own capital, bank loan
Company structure	None: two cooperating owners	None: two cooperating owners	Owner and his son as successor and managers responsible for specific product-areas	Two divisions headed by the two owners of the firm
Main strengths vs main weakness	Loyal customer portfolio / plain financial management	Exceptional product, good background, and cooperation within the company / narrow market orientation (Hospitality gastronomy market)	Quality of offered services/ dependence on qualified workers	Family background, reliability and good name, flexibility, experience, corporate know-how/ small firm, insufficient marketing online, capital intensity
Most important feature	Customers, personal contacts,	Well-build brand	Quality of offered services	Tradition and family legacy

	Firm A	Firm B	Firm C	Firm D
Part 2			***Financial management***	
Current capital structure	Only equity	Equity, loans	Only equity	Equity and short-term liabilities, leasing, occasional short-term loans
Risk of bank loan	Do not perceive any risk, but it depends on the amount	Do not perceive any risk	Too expensive resources	Too expensive resources + Difficult to obtain
Financial goals and discounting	No specific goals are set up, but the company should be passed to the next generation in good order	No specific goals are set up, the goals are set up outside the financial goals	No specific goals are set up. Goal is high quality of provided services	No specific goals determined. The only goal is to keep the business running profitably
CFO – hire or family member	Family member	Family member	Family member	Family member
Use of time/ discounting method in decision making	No	No	No	No
Possible investment project and its financing	Do not consider any major investments. In such case they would rely in own resources	Invest own capital plus they do not hesitate to use a bank loan	Expansion financed from the internal sources. Bank loan considered too expensive	Expansion financed from a bank loan
Creation of financial reserves	Yes	Yes	Yes	Yes
Courses of financial management, financial education	Family experiences	Previous business experience	Business experience	Experience in business
Position of CFO	Owner	Owner and wife	Owner	Owners
Use of profit	Creation of reserves, but not investment	Creation of reserves, for investments and further development	Creation of reserves, for investment, to repay the owner's extraordinary deposit, shares of profit	Creation of reserves
Part 3			***Financial training and experience***	
Education of CFO	Agricultural/Marketing	High school comprehensive + Experience with previous business activity	University degree in agriculture/ Chemical engineering	University degree in construction
Financial distress	Not experienced	Not, even in the Covid year (reserves)	Yes, during the expansion of the company	No

	Firm A	Firm B	Firm C	Firm D
Usage of financial indicators	Yes: ROE, ROI, liquidity (P&L), EBIT	No systematic use. Focus on revenues, earnings, volume and frequency of customer orders	Yes, quite a deep analysis of individual products and their profitability	Yes, yearly financial analysis of results. Monthly analysis of invoices and payments, inventories turnover, etc.
Financial information and financial direction	Records of income and expenses, surplus to savings	Only cash flow, financial statements and tax returns prepared by external providers	Relatively large evidence and analysis of individual products - to determine the future product prices	Attention paid for receivables, payables and inventories
Comparison of results with the other occasion	No	No	No	No
Web-based application	Yes	No	Yes	Yes
Credit card/bank account	Apple-pay, Wallet	Bank account, internet-banking	Bank accounts, internet-banking	Bank accounts, internet banking
Part 4			***Financial literacy***	
Ability to explain basic concepts of financial decision	Ability to explain it, but not used in practice	Ability to explain the concepts, but not used in practice	Ability to explain the concepts and method it, but not used	Ability to explain the concepts, but not used
Personal savings	Yes, after payment of all liabilities	No	Yes, for personal investments	Yes, regularly, in real estate and insurance, but not on bank accounts
Personal financial goals	No	No	Yes, to financially secure the family	To secure himself for retirement

5. Conclusions and implications

In this research, we have explored a sample of family firms to establish the link between the goals of family businesses, their business results, and the link to financial literacy of involved family members.

The main goal of the paper is to find out whether the owner and the key employees in financial positions of family companies (accountant, financial director) have any education in economics or finance as a basis for the necessary financial literacy to perform their roles. Gottardo and Moisello (2014).

We want to establish whether economic education affects the financial literacy of either the owner or employees of the company. We also wanted to disclose how financial management is organized in family businesses Huang *et al*. (2015), Wagner *et al.* (2015).

Our findings reveal the financial matters are not the core of the interest of the family firms' owners. Investigated firms pay only a little attention to financial issues, such as budget preparation and assessment of achieved results, financial structure and other areas of financial management (i.e., cash flow, turnover of inventories and liabilities, etc.). They use their own expertise to cover the tasks of the firm. They also assume that financial reporting is an affair of an outside accountant and it is usually performed by the external accounting firm and is with close attention to limiting tax liability.

As we specified before the goals of family firms are not usually to maximize the financial profit, but to strive for long-term sustainability. The *business founders would also like to hand over the business to the next generation in good order. However, the business rarely stays in hands of one family for more than three generations (Isaac, 2020).*

We have found that family firms do not perceive financial matters as anything imminent. In the Czech Republic, there is no obligation to exercise any form of systematic financial reporting for corporations with low turnover (and or total assets). Here the limit is less than 3 000 000 CZK (EUR 115 thousand), and most family firms fall within this low bracket. The importance of financial information is understood as more critical only in exceptional circumstances situations like the current COVID-19 pandemic. In such cases, systematic reporting and preparation of financial statements would allow small family companies to apply for governmental support.

Another issue worth further investigation would be why small family firms do not consider financial matters as very important and why do they frequently delegate all accounting and finance to external experts.

The financial literacy of a company depends on the financial literacy of its management, but there is no direct link between financial literacy and company success. The ability to make rational financial decisions was also tested during the recent economic crisis in 2006 - 2008. Here, only one company out of our limited sample perceived some financial pressure. Therefore, it seems that due to their conservatism the family firms were able to avoid severe consequences of financial crises. These conclusions were also proposed by (Leppäaho and Ritala, 2021; Kraus *et al*., 2020). Similar findings were confirmed by prior research using quantitative methodology, e.g., Zhou (2012).

Our empirical research has confirmed that family firms tend to be rather conservative in their financial management and in developing their financial structure (they tend to use predominantly their own finances). The level of financial expertise depends on the education of family members in charge and on their business experience. For financing, family firms usually use their own sources and they tend to reinvest all generated profit back in the business. These companies also rarely use bank credit but they sometimes use specific financial subsidies or programs (typically in agriculture or regional development). The financial matters and profit generation are not the core of the interest of the owners. Financial information is considered an affair of an accountant that is usually performed by an external accounting firm and it is in close relation to the tax liability.

Although we cannot generalize our findings, because of the small number of companies explored, our study can provide some interesting directions for future research in this business segment.

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Determinants of IFRS 16 "Leases" Disclosures by Banks: Central and Eastern Europe Evidence

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Abstract:

Research question: *What are the factors influencing the disclosure practices on lease accounting of banks operating in the CEE region?*
Motivation: *Few studies have investigated the level of IFRS disclosures in the banking system. The option for CEE region is that, with the transition to market economies, CEE has become one of the most open, in turn stimulating international business research to look at the interaction of radical societal change, business development and foreign direct investment.*
Idea: *The objective of this paper is to analyze how several variables influence leasing disclosure practices of banks.*
Data: *The sample includes 43 banks, for which we reviewed the 2019 audited IFRS financial statements.*
Tools: *First, a content analysis of the IFRS financial statements was carried out. To do so, a disclosure checklist was created and applied. Then, an empirical model was estimated by applying a simple linear regression.*
Findings: *The application of the simple linear regression suggest that four of the five hypotheses tested are valid. The size of the bank classified upon the value of its total assets, the audit firm and the listed status of the bank show positive effects on the IFRS 16 disclosure level, while the country variable has a negative effect.*
Contribution: *First, we contribute to the literature by employing a content analysis and developing an IFRS 16 disclosure checklist. Second, we extend the IFRS literature on the most recently issued standards by IASB. Third, there is a shortage of studies investigating the level of IFRS disclosures by banks. Usually, banks are excluded from samples due to the specifics of the industry, fact reflected also in studies dealing with IFRS application.*

Keywords: *Banks, CEE, disclosures, disclosure checklist, IFRS 16.*

1. Introduction

Leasing is an important financial solution used by many organizations. It enables companies to use property, plant, and equipment without needing to incur large initial cash outflows. It also provides flexibility and enables lessees to address the issue of obsolescence and residual value risk. This financing instrument is commonly used in the banking industry. To carry out their daily operations, banks enter into lease agreements, mostly for their office spaces (headquarters and branches), vehicles, ATM locations and IT equipment.

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The standard dealing with lease accounting, IFRS 16 "Leases" (IFRS 16) was issued in January 2016, due to the severe criticism received by the former standard lease standard, IAS 17 "Leases" (IAS 17), in meeting the needs of the financial statements' users. Academics (Reither, 1998; Duke *et al*., 2009), practitioners (AICPA, 1994) and financial statements' users (Beattie *et al*., 2006; Berry and Robertson, 2006; Barth and Shipper, 2008), all argued that lessees were not recognizing all lease obligations and assets derived in their balance sheets, which lead to a lack of comparability between financial statements.

IFRS 16 is effective for annual reporting periods beginning on or after 1 January 2019, with early application permitted. Under the new model, the distinction between operating and finance leases is eliminated for lessees, and a new lease asset (representing the right to use the leased item for the lease term) and lease liability (representing the obligation to pay rentals) are recognized for all leases. Several studies analyzed the effect that operating leases capitalization would have on the financial statements and financial ratios of entities operating in multiple industries. Most of them were carried out before the date IFRS 16 initial application date. These studies focused on estimating the effects for listed entities from different jurisdiction in the European Union, operating in a wide range of industries. In the majority of cases, credit institutions were excluded from the sample, as a common practice in the accounting literature given the different interpretation of financial ratios across industries. The ex-ante studies which analyzed the banking industry case revealed that the effect of IFRS 16 adoption on the financial statements as a whole and key financial ratio would not be significant (PwC, 2016; EY, 2018; Zamora-Ramirez and Moralez-Diaz, 2018; Magli *et al*., 2018).

However, disclosure of leasing activities and related accounting policies by banks has not yet been researched. In this work, we focus on the information provided by banks in their annual IFRS financial statements. We seek to examine which factors influence the level of lease disclosure in the financial statements of banks across countries from Central and Eastern Europe ("CEE"). The analysis presented in this article covers the following 10 CEE countries: Romania, Poland, the Czech Republic, Bulgaria, Hungary, Estonia, Latvia, Lithuania, Slovakia, and Slovenia. The option for this region of Europe is that with the transition to market economies, CEE has become one of the most open, in turn stimulating international business research to look at the interaction of radical societal change, business development and foreign direct investment (Jaklič, 2020). All ten states are members of the European Union. Therefore, all the banks operating in their banking sectors prepare the annual financial statements according to IFRS.

We conducted a content analysis of the financial statements and developed a disclosure checklist. Further, we tested a dependence model in which the disclosure index obtained is regressed on several variables, such as the size of the bank, the audit firm, the listed status, country and the subsidiary bank status in an international banking group.

This paper is structured as follows. The next section reviews related literature and develops the hypotheses. The research design is described in the third section, while empirical findings are discussed in the fourth section. Finally, we present the paper summary and conclusions.

2. Literature review and hypotheses development

The existing literature on corporate disclosure is constantly growing. However, the studies approaching the financial services sector and their related accounting framework are limited. Previous literature on disclosures by banks has focused on examining risk disclosures and performance, value and stock prices, leaving the accounting disclosure segment little explored. Most of them employed similar methodologies, by conducting content analyses based on disclosure indices and analyzing the influence of several factors on the level of particular disclosures.

Kahl and Belkaoui (1981) investigated the overall extent of disclosures by commercial banks located in 18 countries. Disclosure adequacy was measured by the extent to which 30 selected information items, which formed the disclosure index, are presented in the annual report. The degree of association between the extent of disclosure and asset size was measured by calculating the Spearman's rank correlation coefficient between the relative score and the asset size rankings of each bank. The findings suggest that there is a relationship between size and adequacy of disclosure which is just barely significant at the 5% level but highly significant at the 10% level. Furthermore, the results indicate that the extent of disclosure is relatively different among the countries examined, with the US banks leading the list. Hamid (2004) studied the corporate social disclosures practiced by 66 banks and finance companies in Malaysia. The authors analyzed the social disclosures included in the annual reports by employing a content analysis and developing a disclosure checklist. The OLS regression was used to assess the effect of each independent variable on the corporate social disclosures. The results indicate that the size of a bank given by its total assets, the listing status and the age of business appear to significantly influence the disclosure practice, while the profitability variable show insignificant relationship.

Baumann and Nier (2004) examined the influence of the stock's volatility on disclosures of banks. The authors made use of a set of data on about 600 banks across 31 countries over the period 1993 – 2000. The data set contains detailed information about the items that banks disclose in their annual accounts. The methodology employed includes the development of a composite disclosure index and the application of a linear regression. Controlling for a number of other factors, such as the size and risk of the bank, the results indicate that banks that disclose more information on key items of disclosure show lower measures of stock volatility than do banks that disclose less information.

Linsley *et al*. (2006) examined risk disclosure practices within annual reports of 9 Canadian and UK banks. To analyze and classify the risk disclosures within the annual reports content analysis was performed. The authors chose to measure the volume of disclosure of risk information by counting risk and risk management sentences rather than words or pages as this is deemed more reliable as a coding method. Five hypotheses have been developed and tested, two of which were rejected. The two rejected hypotheses suggest that there does not appear to be an association between levels of risk disclosure and either bank profitability or the level of risk within the bank. However, in the case of the other three hypotheses there does appear to be a positive association between levels of risk disclosure and both bank size and the number of risk definitions, and there appears to be no statistically significant difference in the risk disclosure levels of the Canadian banks when compared to the UK banks.

Helbok and Wagner (2006) investigated the operational risk disclosure practices by 142 financial institutions in the 1998 – 2001 period. The analysis is performed on the banks' annual report of the survey period by counting the number of times a specific topic is mentioned. Further, reporting on operational risk is investigated using a disclosure index. Empirical evidence indicates that financial institutions with a lower equity/total assets ratio and/or profitability ratio gave greater importance to disclosing their assessment and management of operational risks whereas those with higher ratios chose a lower disclosure stance.

El-Bannany (2007) studied the determinants of social disclosure level in the UK banks. The results indicated that the coefficients for bank size, return on equity, investment in information technology, market structure and risk are highly significant. The sign on all variables but return on equity are in line with the hypothesized direction. On the contrary, the coefficients representing the age of the bank and listing status are not significant and even the sign of both variables do not comply with the expected direction.

Hossain (2008) conducted an empirical investigation of the extent of both mandatory and voluntary disclosure by listed banks in India (sample of 38 banks). The authors developed an unweighted disclosure index and carried out a content analysis on the disclosures from the annual reports for 2002 and 2003. The findings indicate that size, profitability, board composition, and market discipline variables are significant, and other variables such as age, complexity of business and asset-in-place are insignificant in explaining the level of disclosure.

Bischof (2009) analyzed the effect of IFRS 7 "Financial instruments – disclosures" first-time adoption on disclosure quality of 171 banks from 28 European countries. It was identified that disclosure quality has generally increased both in financial statements and in risk reports but that the focus of disclosures has shifted from market risk exposures to credit risk exposures. The effect of the first-time adoption strongly varied across countries. These variations could be explained by differences in the enforcement and interpretation of IFRS 7 by national banking supervision. The findings suggest that it is not only the content of IFRS 7 but also the enforcement of the standard that accounts for the increase in disclosure quality.

Elbannan and Elbannan (2014) examined whether bank risk disclosures are associated with operating performance and market valuation. The authors measured bank operating performance using a balanced scorecard approach and found that higher risk disclosure is associated with higher operating performance and market valuation for a sample of 29 Egyptian banks.

Nahar et al. (2016) analyzed the determinants of risk disclosure by listed banks in Bangladesh. The research relied on a theoretical framework based on agency theory and the creation of a risk disclosure index based on IFRS 7 and Basel II provisions. The data was hand-collected from the annual reports of the 30 banks traded on the Dhaka Stock Exchange over 2007-2012, creating 180 bank-year observations. The study suggested that implementation of IFRS 7 and Basel II provisions raised the extent of risk disclosure in every category of financial institution risk (market, credit, liquidity, operational and equities). Specifically, whilst the determinants of disclosure vary across types of risk, the number of risk committees, leverage, company size, the existence of a risk management unit, board size and a Big4 affiliate auditor are significant determinants of at least one category of risk disclosure.

Therefore, taking into account the different positions and results of previous studies, the following hypotheses have been established:

Hypothesis 1: There is a positive association between the size of a bank and the level of IFRS 16 disclosures.

> *Hypothesis 1.1:* There is a positive association between the size of a bank expressed as the value of total assets and the level of IFRS 16 disclosures.
> *Hypothesis 1.2:* There is a positive association between the size of a bank expressed as the number of branches and the level of IFRS 16 disclosures.
> *Hypothesis 1.3*: There is a positive association between the size of a bank expressed as the number of employees and the level of IFRS 16 disclosures.

Hypothesis 2: There is a positive association between membership of a bank in an international banking group and the level of IFRS 16 disclosures.

Hypothesis 3: There is a positive association between the auditor of a bank (Big 4 vs. non-Big4) and the level of IFRS 16 disclosures.

Hypothesis 4: There is a positive association between the listing status of a bank and the level of IFRS 16 disclosures.

Hypothesis 5: There is an association between the country where a bank operates and the level of IFRS 16 disclosures.

3. Research methodology

Population

In order to achieve the objectives established for this study, 43 banks were selected as our target population. The sample was designed to include all the banks operating in the Romanian banking system and all the banks listed on the primary markets of the stock exchanges from other nine countries located in the CEE region. The latter were identified following our research on the official websites of the stock exchanges from each CEE country.

The sample was defined as follows:

- 23 banks operating in the Romanian banking system. According to the annual report of the National Bank of Romania, as at 31 December 2019, in the Romanian banking market operated 34 banks, out of which seven are branches of foreign banking groups, whose IFRS financial statements are prepared by the parent bank. For other four banks, the IFRS financial statements are not publicly available.
- Nine banks listed on the primary market of the Polish Stock Exchange – Warsaw;
- Three banks listed on the primary market of the Czech Stock Exchange – Prague;
- Three banks listed on the primary market of the NASDAQ Baltics;
- Two banks listed on the primary market of the Hungarian Stock Exchange – Budapest;

- Two banks listed on the primary market of the Bulgarian Stock Exchange – Sofia;
- One bank listed on the primary market of the Slovenian Stock Exchange – Ljubljana.

There are no banks listed on the primary market of the Slovakian Stock Exchange – Bratislava. In addition, there are no Latvian banks listed on the primary market of the Baltics stock exchange.

Content analysis: creating a disclosure checklist

To study IFRS 16 disclosures, we used the content analysis, one of the most widely used techniques in analyzing the information provided by companies and institutions. Krippendrof (1980) defined content analysis as a research technique for making a valid inference from the data according to their content, while Waber (1988) defined it as a method of codifying text (or content) of a piece of writing into various groups (or categories) depending on selection criteria. Krippedrof (1980) and Neuendrof (2002) have recommended three essential processes as guidance in conducting any content analysis study. The first process is deciding which document to analyze. This research has used the audited IFRS financial statements for the financial year ending 31 December 2019 as the document to analyze. This is the most recent date for which banks have issued IFRS financial statements at the time of our analysis. The IFRS financial statements for the financial year ending 31 December 2020 are not yet published. We selected the information published in the audited financial statements, as this is the main tool of corporate communication for companies (Branco and Rodrigues, 2006).

The second process in the content analysis is to determine the measurement unit for disclosures. Existing literature indicates that there are three different methods of measurement, namely: words (Zegal and Ahmed, 1990; Deegan and Gordon, 1996; Abraham and Cox, 2007), sentences (Hackston and Milne, 1996; Milne and Adler, 1999; Tsang, 1998; Beretta and Bozzolan 2004; Amran *et al*., 2009; Oliveira *et al*., 2011) and pages (Patten, 1992; Gray *et al*. 1995; Hackston and Milne, 1996; Newson and Deegan, 2002; Hamid, 2004). However, some authors developed their own measurement units and related checklists (Deumes and Knechel, 2008; Hassan, 2009).

The third and final process in content analysis is the development of the checklist. This process involves the selection of categories or dimensions in disclosure theme. For this study, we chose to develop our own checklist. The checklist instrument was created based on the study of the relevant literature, extensive knowledge of IFRS 16 requirements of the authors and based on the illustrative IFRS financial statements prepared by Big4 auditors, publicly available on the audit firms' official websites. The checklist includes 39 items, grouped into eight categories, as follows:

- Disclosures related to items of Statement of Profit or Loss and Other Comprehensive income;
- Disclosures related to items of Statement of Financial Position;
- Disclosures related to items of Statement of Changes in Equity;
- Disclosures related to items of Statement of Cashflow;
- Disclosures related to initial application;
- Accounting policies;
- Critical accounting estimates and judgments, and

- Risk management.

The checklist created has the following characteristics:

a. **Dichotomous**: A score of 1 is assigned to an item if it is disclosed in the IFRS financial statements, even if it is included in another category than the one in the checklist. Otherwise, a score of 0 is assigned. The total score (TS) for a bank is calculated as follows:

$$\mathrm{TS} = \sum_{i=1}^{m} e_i$$

where:

- item e_i is 1, if the item is disclosed, 0 otherwise; and
- m is the maximum number of items (m = 39).

Alternatively, one can attempt to estimate a score ranging from 1 to 0. Although this solution may be considered conceptually superior, it can lead to a completely subjective evaluation (Giner, 1995).

b. **Unweighted**: The total score is calculated as the total and unweighted sum of the scores of each item. This approach assumes that each item is equally important for the users of financial statements and has been widely used by researchers (Cooke, 1989; Cooke, 1993; Raffournier, 1995; Chalmers and Godfrey, 2004; Lopes and Rodrigues, 2007). The reasons behind choosing this method are further presented. First, unlike the weighted scoring scheme, the unweighted scoring scheme helps in enhancing the reliability and objectivity of the index, because it does not require making judgements in relation to the specific weight that needs to be given to different leases disclosure provisions. Giner (1997) articulated the idea that there is some arbitrariness inherent to the use of any weighted index. Second, there is no agreed theoretical framework to accurately assign weights to different corporate disclosures, in this case lease activities, and thus our decision to use an unweighted scoring scheme may limit the possibility that our index is biased towards any single or specific disclosure. Third, similar conclusions were drawn in the studies that used both weighted and unweighted indices (Choi, 1973; Firth, 1980; Chow and Wong-Boren, 1987; Adhikari and Tondkar, 1992).

The content analysis for this study was performed by a single coder. However, in order to ensure reliability, validity and consistency of the coding framework, an initial sample of five sets of financial statements were coded by two experienced coders. Any mistakes or inconsistencies identified independently by the two coders were discussed and corrected. A further five sets of financial statements were coded but the two coders did not identify any further mistakes or inconsistencies with the coding procedure.

Analysis of factors: variables and model

Following the development of the disclosure checklist, we analyzed the factors which may have an impact on a greater amount of disclosure by banks.

Dependent variable: we tested a dependence model in which the dependent variable refers to a disclosure index created by the authors, based on the IFRS 16 information disclosed by banks in their annual IFRS financial statements.

Independent and control variables: the variables proposed to test the research hypotheses are presented in Table 1.

Table 1. **Independent and control variables used to test the research hypotheses**

Hypothesis	**Definition**	**Variable type (independent/control)**
H1 – Size of the bank	Size of the bank, tested through the following variables: - Total_assets_eur: volume of total assets disclosed in the statement of financial position as at 31 December 2019 in thousands of EUR (integer number); - No_branches: number of branches and administrative units of the bank (integer number); - No_employees: number of employees of the bank (integer number).	Independent
H2 - Group status	International_banking_group = 1 or 0 where 1 – yes, bank is part of an international banking group and 0 – no, it is a local bank or owned by a non-banking group.	Independent
H3 - Financial auditor	auditor_big4 = 1 or 0, where 1 – yes, auditor is a Big4 company (KPMG, EY, Deloitte, PwC) and 0 – no, auditor is a non-Big4 company (Baker Tilly, Mazars, BDO).	Independent
H4 - Listed status	listed = 1 or 0, where 1 = bank is listed on a stock exchange and 0 – bank is not listed.	Independent
H5 - Country	country_other = 1 or 0, where 1 = country is Romania, 0 = country other than Romania.	Independent
Profitability	Net profit / total assets	Control
Capital ratio	Capital ratio determined according to EU Regulation no. 575/2013 on prudential requirements for credit institutions	Control
Depositors' confidence	depositors_confidence = Deposits from customers / total assets	Control
Indebtedness	Indebtedness = Due to banks / total assets	Control

The data on the independent and control variables was manually collected from the annual IFRS financial statements and annual reports of the banks, available online on their official websites. All data in local currency was translated in euro, using the local currency/euro exchange rate as at 31 December 2019.

Empirical model

The hypotheses were checked empirically through simple linear regression, developed in Python programming language. In order to check the existence of univariate relationships between the variables included in the model, we defined simple linear regressions between the dependent variable, namely the total score indicating the amount of IFRS 16 disclosures, and each of the independent and control variables considered. We set the critical threshold representing the level of statistical significance at 10%. Where the results were below 10%, we reported them by reference to the lowest level (1% or 5%).

4. Results and discussions

Descriptive statistics

The descriptive statistics and correlations amongst the variables studied are reflected in Table 2. On average, the banks included in the sample have a total disclosure score of 25.5 (out of maximum possible score of 39), ranging between 8 and 34. We observe pronounced inequalities in the values of the independent variables used to define the size of the bank, as follows: value of total assets ranging from EUR 9.3 million to EUR 54.8 million, number of employees ranging from 14 to 15,678 and number of branches ranging between 1 to 1,022 (the latter depends on the sales business model employed by each bank). 60% of the banks are part of an international banking group and 90% of them are audited by a Big4 audit firm (PwC, Deloitte, EY and KPMG).

Also, we observed that the independent variables selected for size used to test H1 (namely total assets, number of employees and number of branches), are right skewed. Thus, in order to obtain a more normalized distribution, we applied the natural logarithm formula for these variables, as it has been previously applied in other research studies (Ali et. Al, 2004; Haniffa and Cooke, 2002; Lopes and Rodrigues, 2007).

The boxplot by country, depicted in Figure 1, indicates that banks from the Czech Republic presented, on average, the most information on IFRS 16 policies, with a total score ranging between 30 and 35. These institutions are followed by the banks operating in the Baltics countries, Hungary and Slovenia (total score ranging between 25 and 30). The lowest score is encountered in case of the Romanian banks, with most of the banks having a total score between 20 and 25. Also, the lowest total score, namely 8 points, was observed at one of the 23 Romanian banks included in the sample.

Table 2. **Descriptive statistics**

	Count	Mean	Std	Min	25%	50%	75%	Max
Country _other	43	0.5	0.5	-	-	1	1	1
Listed	43	0.5	0.5	-	-	1	1	1
Auditor (big4/ Others)	43	0.9	0.3	-	1	1	1	1
International_ _banking_Group	43	0.6	0.5	-	-	1	1	1
No_branches	43	220.6	260.5	1	32	95	367.5	1,022.0
No_employees	43	3,431.1	3,817.2	14	525.5	1,909	5,709	15,678
Total_assets_eur (mil.)	43	10.235	13.978	9.321	1.189	3.728	12.306	54.852
Capital_Ratio	43	0.2	0.1	0	0.2	0.2	0.2	0.4
Profitability	43	0	0.2	-0.3	-	0	0	1

	Count	Mean	Std	Min	25%	50%	75%	Max
Depositors' Confidence	43	0.9	1	-	0.7	0.8	0.8	7.3
Indebtedness	43	0.1	0.1	-	0	0	0.1	0.6
Final_score	43	25.5	5.1	8	23	26	29	34

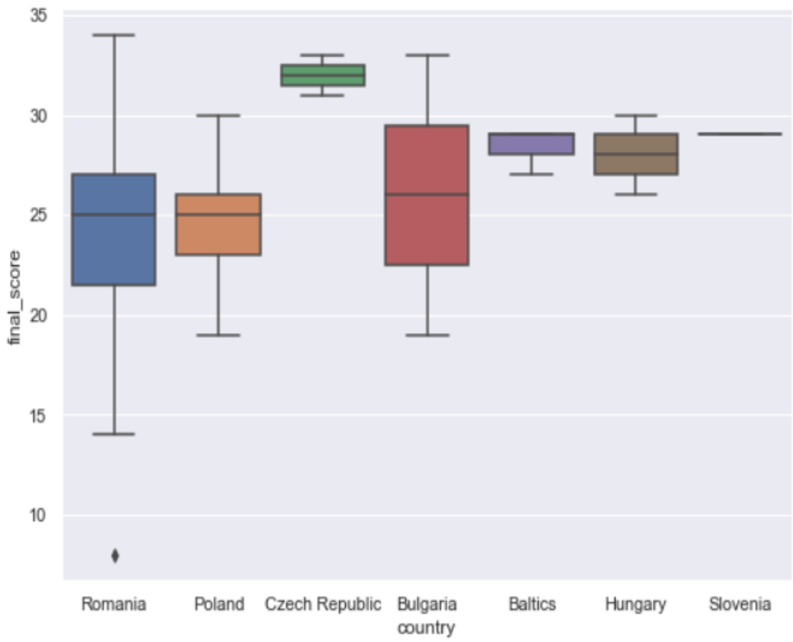

Figure 1. **Final score distribution across countries**

Simple linear regression
Results obtained following the application of the simple linear regression are reflected in Table 3. From the independent variables proposed to test the hypotheses, two of them are statistically significant for a confidence level of 95% (the size of the bank upon the value of total assets and the audit firm Big4 or non-Big4) and other two for a confidence level of 90% (the listed status and the country where they operate). The size of the bank, the audit firm and the listed status show positive effects while the country has a negative effect on the dependent variable.

Thus, four of the five defined hypotheses are validated, as follows:
- *H1*: There is a positive association between the size of a bank given by the value of its total assets and their IFRS 16 disclosure level. The higher value of total assets, the higher level of IFRS 16 disclosures. The idea that the size of a bank influences that disclosure level is supported by previous banking literature (Kahl and Belkaoui, 1981; Linsley et al., 2006; El-Bannany, 2007; Hossain, 2008; Nahar et al., 2016).
- *H3*: There is a positive association between the external audit firm and the level of IFRS 16 disclosure This indicates that banks audited by Big4 audit firms presented more disclosures on IFRS 16 policies than the banks audited by second-tier audit firms. The result is in line with conclusions drawn by Nahar et al., 2016.
- *H4*: Banks whose shares are listed on stock exchanges presented, on average, more IFRS 16 disclosures than the other banks. Our conclusion is consistent with that of Kahl and Belkaoui, 1981; Elbannan and Elbannan, 2014; Baumann and

Nier, 2004; however, other studies displayed opposite results (El-Bannany, 2007).

- *H5*: There is a negative association between the country in which the banks operate and the level of IFRS 16 disclosures This indicates that banks operating outside Romania presented, on average, more disclosures than the Romanian banks.

The simple linear regression based on the independent variable used to test H2, namely the subsidiary bank status in an international banking group, did not generate statistically relevant results. Furthermore, in terms of control variables, we identified that there is a negative association between the indebtedness degree of the banks and their IFRS 16 disclosure level. Thus, the higher level of indebtedness, the lower level of IFRS 16 disclosures.

Table 3. **Simple linear regression results**

Simple linear regression results *(Dependent variable = final_score)*				
Hypothesis	Variable	Coeficient	P-value	R^2
H1	ln_total_assets_eur	0.6702	0.028**	0.113
	ln_no_branches	0.4100	0.127	0.056
	ln_no_employees	0.5369	0.101	0.064
H2	international_banking_group	-2.2670	0.158	0.048
H3	auditor_big4	6.0769	0.022**	0.122
H4	Listed	2.9196	0.061*	0.083
H5	country_other	-2.8761	0.065*	0.080
Control variables	Profitability	-6.7625	0.177	0.044
	capital_ratio	2.3160	0.881	0.001
	depositors_confidence	-0.9901	0.210	0.038
	Indebtedness	-19.7104	0.009***	0.154

****, **, * indicates an assumed risk of 1%, 5% and respectively 10%*

5. Conclusions

The banking system plays an important role in the modern economic world. These institutions support the creation of new capital in a country and thus help the growth process. Disclosure of meaningful and accurate information provides an important foundation for the decisions of financial statements users. Well-informed investors, depositors, creditors and counterparties are expecting strong discipline from a bank in managing its activities in a manner that is both prudent and consistent with its stated objectives.

This paper examines the factors that influence the level of IFRS 16 disclosures in the financial statements of banks operating in the CEE region. Specifically, we investigated the relationship between the size of the bank, the membership in an international banking group, the audit firm, the listing status of a bank and the country in which a bank operates and the IFRS 16 disclosure level.

The study was conducted in two stages. First, we conducted a content analysis of the IFRS financial statements prepared by a sample of banks and developed and applied a disclosure checklist. The sample includes 43 banks operating in countries from the CEE region. The checklist which includes 39 items was defined by the authors based on the study of the relevant literature, their extensive IFRS experience and illustrative IFRS financial statements published by Big4 audit firms. Second, we analyzed certain factors that may influence the disclosure of information on leasing activities of CEE banks. The research hypotheses were tested through simple linear regression. Our findings from the application of the simple linear regression suggest that four of the five tested hypotheses are valid. The size of the bank classified upon the value of its total assets, the audit firm and the listed status of the bank show positive effects on the IFRS 16 disclosure level, while the country variable has a negative effect. The simple linear regression based on the subsidiary bank status in an international banking group did not generate statistically relevant results.

Our research makes a number of contributions to the growing body of literature on corporate disclosure. First, we contribute to the literature by employing a content analysis and developing an IFRS 16 disclosure checklist containing both mandatory and voluntary disclosure (based on best practice). Second, we extend and contribute to the IFRS literature on the most recently issued standards by the International Accounting Standards Board (i.e. IFRS 9 “Financial instruments”, IFRS 16 and IFRS 15 “Revenue from contracts with customers”). Third, there is a shortage of studies investigating the level of IFRS disclosures by banks. Usually, banks and other financial institutions are excluded from samples due to the specifics of the industry, which is also the case of the studies dealing with IFRS application.

Nevertheless, in line with many of the studies using the disclosure index methodology, our paper has some limitations. First, the use of an unweighted index may be regarded as a simplification, although this type of index has been widely used by researchers (Cooke, 1989; Cooke, 1993; Raffournier, 1995; Chalmers and Godfrey, 2004; Lopes and Rodrigues, 2007). Second, the content analysis was carried out by a single coder. Although, we put in place safeguards to ensure the reliability and consistency of the coding framework, the coder’s personal interpretation of the information disclosed is unavoidable. Third, due to the labor-intensive nature of manual data collection, we limited our sample to a relatively smaller size and therefore, could arguably influence the generalization of our findings. In the same time, the sample size is relevant in the context of quantitative analyses, because a small sample can lead to inconclusive results for many regressions. Therefore, future research may improve upon the current study by employing a much larger sample size. Similarly, our analysis is limited to disclosures included in the 2019 financial statements. Future studies may improve this analysis by investigating the leases disclosures in the years following the transition period.

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Value Relevance of Comprehensive Income and Other Comprehensive Income during Pandemic Outbreak COVID-19: Empirical Evidence from Frankfurt Stock Exchange

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Abstract: *In this uncertainty economic period generated by pandemic outbreak Covid19, the disclosures and level of detail related to comprehensive income should add value to investors' decision-making. Therefore, as a major objective of this paper, is to analyses the influence over share price of the value relevance provided by the comprehensive income and other comprehensive income in measuring the performance of companies together with the influence that COVID19 had on industries. Accounting can create value for investors and the links between market values and the accounting book values, as it is essential for identifying accounting information that reflects the economic value of the company. Thus, the share price could be influence by a different perception of the other comprehensive income that could be analyzed in an aggregate way or in an individually way.*

Keywords: *Comprehensive income, other comprehensive income, value relevance, share price, Covid19***.**

1. Introduction

In the context of globalized and continuous changing capital markets, the presentation of comparable financial information, based on quality standards and applied globally, such as International Financial Reporting Standards (IFRS), is an important matter for capital providers (investors, banks and other creditors) in making investment decisions and for risk management. The current approach to determining the financial performance of companies that apply IFRS means that some elements of the nature of income and expenses - such as some gains and losses, are not recognized in profit or loss for the period, but are charged to equity (IASB, 2019). Therefore, the assessment of the performance of companies based on the IFRS framework operates with the concept of comprehensive income which involves the inclusion of all elements of income and expenses, including those recognized in equity and generically called other comprehensive income (IASB, 2018: Conceptual Framework, par. 7.15).

Within the information available for the decision to invest in the capital markets, the comprehensive income must be disclosed in such a way that it can be understood and compared by users, so that they can create projections on the future cash flows they will obtain. Bartov *et al.* (2005) in an empirical study talk about financial reporting frameworks and their impact on the value relevance of financial information, so the

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results obtained according to IFRS are much more relevant for users than those obtained according to local standards.

International Financial Reporting Standards offer two possibilities for presenting the overall result: i) profit or loss for the period together with other comprehensive income or ii) in two separate disclosures: profit or loss for the period and other comprehensive income (IFRS, 2019: IAS 1, para. 81).

Other comprehensive income includes those items that should be reclassified to profit or loss for the period and those items that would never be reclassified to profit or loss for the period such as changes in revaluation surplus (IAS 16, IAS 38), actuarial gains and losses on defined benefit plans recognized in accordance with IAS 19; gains and losses arising from the translation of the financial statements of a foreign operation (IAS 21); gains and losses on the revaluation of available-for-sale financial assets (in accordance with IFRS 9); the portion of gains or losses on hedging instruments (IFRS 9).

Some authors (Amiram, 2012) have shown that asymmetries in financial information generate behavioral biases caused by unknown variables among foreign and local investors, so that investors are limited to trading shares only in their local markets.

However, financial information published in accordance with IFRS increases market liquidity and reduces information asymmetry, but the cost-benefit ratio of adopting IFRS is not uniform for all countries that adopt IFRS (Li *et al.*, 2019).

The accounting literature speaks of the relevance of financial information as one of the fundamental qualitative characteristics of financial information (IASB, 2018: Conceptual Framework, par. 2.6) and the value relevance of the financial information, which explains how accounting information manages to influence the share price and the economic value of the entity (Barth *et al.*, 2018). Some authors (Biesland, 2009) have concluded that accounting information can be considered relevant if there is a statistical association between accounting information and the market value of companies.

It is important to present information on the impact of COVID-19, especially in an economic environment with high uncertainty (Deloitte, 2020). It is important that financial reporting include information with an adequate level of transparency and entity-specific issues regarding the inherent uncertainties regarding the professional judgment used and the estimation. The financial reporting presentations should explain the impact on certain assets, liabilities, liquidity, solvency and relevant business continuity issues and any other significant uncertainties, assumptions, financial performance determinants, strategies, risks and future prospects. In the light of COVID-19, the assumptions used for computing the fair value could be affected, thus this will lead to the relevance of other comprehensive income (Iasplus, 2020).

2. Literature review

In the context of globalized and constantly changing capital markets, the presentation of comparable financial information, based on quality standards and applied globally, such as International Financial Reporting Standards (IFRS) is an important issue for capital providers (investors, banks and other creditors) in making investment decisions and for risk management. Within the information available for the decision to invest in the capital markets, the overall result must be presented in such a way that it can be understood and compared by users so that they can create projections on future cash flows they will obtain (Suprayogi and Barokah, 2019). Chambers (1994) considers that the evaluation of the company's performance can be done with the help of the comprehensive income. In his opinion, the acquired assets contribute to the company's performance not only with sales margins, but also with the expected price changes. Chambers supports the valuation of assets at net realizable value.

Firescu (2015) mentions that the relevance of global outcome information differs from one category of financial information users to another, and thus managers are interested in comprehensive income, while investors are interested in return on investment and creditors will analyze the company's performance from a solvency perspective.

In their paper, Felthman and Ohlson (1995) mentioned how accounting can create value for investors and the links between market values and book values. Accounting research returns cyclically to what is essential for identifying accounting information that reflects the value of the company.

Ohlson (1999) developed and analyzed a model of the company's market value on present and future earnings, book values and dividends. Two elements underlie the model: "the clean surplus" (the method of net surplus accounting that provides elements of a forecast model that determines the price based on earnings, expected returns and change in book value, the main theory is the estimation the value of a company's shares instead of approaches with discounted dividends/cash flows) and dividends (which diminish the present carrying amount but do not affect current earnings). The model provides a useful benchmark for the company's market value, referring to accounting data and other information. Using the statistical pricing model developed by Ohlson, the results of the study suggest that both net income and other comprehensive income have relevant value, especially other comprehensive income (e.g. gains and losses on revaluation of financial assets available for sale, the gain or loss portion of hedging instruments).

Marchini and D'Esteb (2015) in their study conducted in Italy examined the impact of the effect of reporting unrealized gains and losses on the performance of entities and therefore on the decision-making process of investors. The result of the study shows that the overall result significantly affects the performance of the listed entities in Italy, despite the appearance of the lack of link between the net result and other comprehensive income elements.

Bartov *et al.* (2005) in an empirical study talk about financial reporting frameworks and their impact on the value relevance of financial information, so the results obtained according to IFRS are much more relevant for users than those obtained according to local standards, in the case of the study financial reporting applicable in Germany. Basu (1997) created a model that predicts the correlation between profits returns and the accounting result when future economic performance may deteriorate or appreciate based on information received in the form of "good news" or "bad news". Thus, Basu manages to defuse the tension between the two known economic categories in relation to the profit that results in increasing information efficiency.

The present need of existing investors in a company, but also of potential ones, is to have information about the inherent risk and return on their investments so that they can evaluate and forecast the future performance of the company. Thus, the overall result, taking into account changes in the fair value of assets and liabilities in the reporting period, better measures the value creation process and allows predicting the company's ability to generate future cash flows (Van and Whittington, 2006). According to De Beelde and Van Cawenberge (2008), the profit/result is determined by comparing the carrying amount of equity at the end of the financial period with the same amount recorded at the beginning of the period, without the operations performed by shareholders. This theory is found as named clean surplus accounting theory.

International Financial Reporting Standards offer two possibilities for presenting the overall result: i) profit or loss for the period together with other comprehensive income or ii) in two separate disclosures: profit or loss for the period and other comprehensive income (IFRS, 2019, IAS 1, para. 81).

Other comprehensive income includes those items that should be reclassified to profit or loss for the period and those items that would never be reclassified to profit or loss for the period.

The literature also highlights the debates between the concept of comprehensive income and the concept of current performance or net result. It is necessary to analyze all sources that create value so that users of financial information can analyze and compare the information provided by the financial statements, in particular those referring to changes in capital, future cash flows and relevant information in quantifying the real value of the company. Empirical studies have provided conclusions regarding the value relevance of the financial information to investors. Thus, Ferraro and Veltri (2012) and Jahmani *et. al* (2017), analyzed whether other comprehensive income elements provide investors with added value in terms of information content and their relevance.

Gains and losses reported as other comprehensive income are often seen as having a similar nature, being transitory items with little ability to predict future cash flows and minimal implications for the value of the company. The study by Jones and Smith (2011) compares gains and losses using a model that estimates the value relevance of information and its predictive value. The results show that both gains and losses recorded as other comprehensive income are information with value relevant but have a poor predictive value. Similarly, the study by Devalle and Magarini (2012) analyzes the relevant value and importance in decision making in the capital markets of the elements of the comprehensive income and focuses on other elements of the comprehensive income, concluding by applying the regression model that the relevance of these elements depends on the country.

In his paper, Veltri and Ferraro (2018) analyzed the incremental importance of the values of other comprehensive income elements in the Italian environment after the application of IAS1, using a regression model that takes into account the results of previous research. Thus, it finds that other elements of the comprehensive income are not incrementally relevant; moreover, it concludes that dividends are relevant in this context. Kvaal and Nobes (2010) note that despite the adoption of a common set of accounting standards for listed companies, there are still many differences that could lead to different accounting practices and therefore to different perceptions of the value relevance of the of accounting information. Revenues and expenses recognized in other comprehensive income could differ significantly from country to country.

The primary factors of the various accounting options identified by Mechelli and Cimini (2014) are the source of funding and the legal system. Thus, the incremental of the value relevance of other comprehensive income elements in European countries is determined by these factors, but also by the level of market development, the credit-oriented financial system and a legal framework for financial reporting.

The comprehensive income is becoming more and more important as an indicator of companies' performance (Gazzolaa and Ameliob, 2014) (Frendzel and Szychta, 2013) and is much closer to the reality of the market than the net result. For this reason, investors, in the valuation of investments, should use the ROE (return on equity) indicator corresponding to the comprehensive income instead of the simple ROE indicator; considering that the comprehensive income has a higher informational potential than that of the traditional net result. An evaluation of stock performance, such as ROE related to the comprehensive income, presents the impact on the market much more clearly and provides relevant information for users and especially for investors.
Because other comprehensive income usually includes several types of "mark-to-market" adjustments, their financial reporting may be influenced by the professional judgment of the company's management (Lee and Myung, 2013). Thus, company managers can influence other comprehensive income in terms of classification, the choice of valuation methods, including key assumptions, when determining their fair value. According to this guidance, when there is no active market for a security, the use of management estimates is acceptable. The use of professional judgment in making estimates of fair value can significantly affect the quality of financial information, which is subject to an inherent degree of uncertainty and therefore the actual / concrete results could differ materially from the estimates. Dhaliwal *et al*. (1999) mention that some components of other comprehensive income may be based on subjective estimates; therefore they can generate interpretations in financial reporting. Fair value measurement is identified as one of the most significant risk areas (PCAOB, 2011). The primary shortcomings identified by the PCAOB regarding fair value measurement include (1) whether fair value measurements are determined using appropriate measurement methods; and (2) the reasonableness of significant assumptions used by management to measure fair value, such as discount rates and lending cost expectations.

Some components that are part of other comprehensive income, such as foreign exchange gains and losses and actuarial gains and losses related to benefit plans, may involve estimates with a higher degree of subjectivity than marketable-securities adjustments (Dhaliwal *et al.*, 1999) and changes in the revaluation surplus. When there is an active market, market prices are most relevant in determining fair value and should be used as a basis for measurement, thus generating relevant value for investors and creditors who regularly base these prices on decisions. The level of subjectivity of the professional judgment of a company's management required to establish fair value might be diminished when the valued asset is listed on an active market.

All this shows that it is necessary to be aware of the importance of measuring the financial performance of companies by not only profit or loss for the period but also by using information from other comprehensive income.

3. Research methodology

The sample consists of companies listed on the Frankfurt Stock Exchange subject to DAX, period 2019 and 2020. The DAX (Deutscher Aktienindex (German stock index)) is a blue-chip stock market index consisting of the 30 largest German companies trading in terms of order book volume and market capitalization.

To be included in the sample, a company must be non-financial service company and must have the annual report available on their website. The collected data related the price per share was performed from Frankfurt Stock Exchange website and all other accounting data from the companies' IFRS consolidate annual reports 2019 and 2020.

The sample consists of 50 company-year observations from 26 non-financial service companies referring to 2019 and 24 non-financial service companies referring to 2020 (with available annual report on their website).

The current research hypotheses of the study are whether the comprehensive income, other comprehensive income, and the components of comprehensive income have value relevance.

Ohlson (1995) developed a pricing model used to analyze the changes in the value relevance of earnings, book value, and the components of other comprehensive income.

By using a linear regression disclosing the relationship between the independent variables and the dependent variables (book value and earnings).

For the current study, the model was customized and the following was tested:

$$P_{it} = \alpha_1 + \alpha_2 Comtotalit_{it} + \varepsilon_{it} \quad (1)$$

Where:
P_{it} = share price of company i 30 days after the annual financial statements of the year t were available to stakeholders.
$Comtotal_{it}$ = total comprehensive income of company i at the end of financial year t.
ε_{it} = other value relevant information of company i at the end of financial year t.

Since the earning per share is relevant information for investors, was included earnings per share:

$$P_{it} = \alpha_1 + \alpha_2\ EPS_{it} + \alpha_3\ Other\ commit + \varepsilon it \quad (2)$$

Where:
EPS_{it} = company i earning per share at the end of financial year t.

Since the Covid-19 affected different industries significant during the release of the annual financial statements, was included the variable Cov19 as follows:

$$P_{it} = \alpha_1 + \alpha_2\ EPS_{it} + \alpha_3\ Other\ commit + \alpha_4 Cov19_{it} + \varepsilon it \quad (3)$$

Where:
$Cov19_{it}$ = disclosing if the industry of the company i was affected significant or not after the release of financial statement of year t, decrease more then 30% of turnover compared with prior period.

The information related to components of the comprehensive income is required for a better understanding of the company's activities and future cash flows:

$$P_{it} = \alpha_1 + \alpha_2 EPS_{it} + \alpha_3 Derivatives_{it} + \alpha_4 Cov19_{it} + \varepsilon it \quad (4)$$
$$P_{it} = \alpha_1 + \alpha_2 EPS_{it} + \alpha_3 Exchangediff_{it} + \alpha_4 Cov19_{it} + \varepsilon it \quad (5)$$
$$P_{it} = \alpha_1 + \alpha_2 EPS_{it} + \alpha_3 ActuarialGain/Loss_{it} + \alpha_4 Cov19_{it} + \varepsilon it \quad (6)$$

$$P_{it} = \alpha_1 + \alpha_2 EPSit + \alpha_3 Derivatives_{it} + \alpha_4 Exchangediff_{it} + \alpha_5 ActuarialGain/Loss_{it} + \alpha_6 Cov19_{it} + \varepsilon it \quad (7)$$

Where:
$Derivatives_{it}$: Derivatives variable of the company i at the end of financial year t.
$Exchangediff_{it}$: Exchange differences on translating foreign operations variable of the company i at the end of financial year t.
$ActuarialGain/Loss_{it}$: Actuarial gains/losses from pensions and similar obligations variable of the company i at the end of financial year t.

4. Empirical study on comprehensive income and other comprehensive income

The purpose of this study is to analyze the value relevance of comprehensive income and other comprehensive income during pandemic outbreak COVID-19 based on evidence from Frankfurt Stock Exchange for the companies' financial performance during 2019 and 2020 and the impact in price per share.

Table 1 provides descriptive statistics for each variable included in the study, the maximum, the minimum, the mean, and the standard deviation of each variable.

Table 1. **Descriptive statistics for variables used in the analysis**

Variable |	Obs	Mean	Std. Dev.	Min	Max
Year	49	2019.49	0.5050763	2019	2020
COV19	49	0.3061224	0.4656573	0	1
Shareperpr~r	49	73.37551	57.67894	9.99	270.5
Earningper~e	49	9.037755	24.45717	-10.78	156
Othercompr~e	49	-1083.669	1868.671	-8481	1340
Comprehens~e	49	1245.109	3659.137	-14010	10496
Currencytr~s	47	-542.7669	1492.377	-6578	1841
Derivative~s	48	-27.78521	443.7172	-2043	1461
Actuarialg~s	49	-522.968	919.1132	-5582	203

Table 2 shows the model summary in equation (1) using linear regression.

The coefficient of comprehensive income is insignificant, suggesting that disclosure of comprehensive income will not significantly influence the investors' decision, thus the share price. In addition, the R2 value is insignificant, and is not sustaining that the value relevance of the comprehensive income.

Table 2. **Value relevance of total comprehensive income**

. regress Shareperpriceatthedateofr Comprehensivincome

Source	SS	df	MS			
				Number of obs	=	49
				F(1, 47)	=	0.04
Model	137.246394	1	137.246394	Prob > F	=	0.8415
Residual	159552.059	47	3394.72466	R-squared	=	0.0009
				Adj R-squared	=	-0.0204
Total	159689.306	48	3326.86053	Root MSE	=	58.264

Shareperpriceatt~r	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
Comprehensivincome	.0004621	.0022983	0.20	0.842	-.0041614	.0050857
_cons	72.80013	8.801642	8.27	0.000	55.09351	90.50675

Table 3 shows the model summary in equation (2) using linear regression.

The coefficient of other comprehensive income is insignificant suggesting that disclosure of other comprehensive income will not significantly influence the investors' decision, thus the share price.

In addition, the R2 value is insignificant, and is not sustaining that the value relevance of the comprehensive income.

Table 3. **Value relevance of earnings per share and other comprehensive income**

. regress Shareperpriceatthedateofr Earningpershare Othercomprehensiveincome

Source	SS	df	MS			
				Number of obs	=	49
				F(2, 46)	=	0.05
Model	367.920601	2	183.960301	Prob > F	=	0.9483
Residual	159321.385	46	3463.50837	R-squared	=	0.0023
				Adj R-squared	=	-0.0411
Total	159689.306	48	3326.86053	Root MSE	=	58.852

Shareperpriceatthedate~r	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
Earningpershare	-.1095127	.3486682	-0.31	0.755	-.8113454	.5923201
Othercomprehensiveincome	-.0002698	.0045634	-0.06	0.953	-.0094554	.0089158
_cons	74.07289	10.38294	7.13	0.000	53.17311	94.97266

Table 4 shows the model summary in equation (3) using linear regression.

The coefficient of other comprehensive income is insignificant suggesting that disclosure of other comprehensive income will not significantly influence the investors' decision, thus the share price. However, the coefficient of Covid19 is influencing by 42.47, thus with a significant impact in share price.

R2 value of 11,88% is sustaining that the value relevance of the Covid 19 together with other comprehensive income and earnings per share influence by 11.88% the share price, thus there are other elements there are not analyzed and influenced the share price.

Table 4. **Value relevance of earnings per share, other comprehensive income and Covid 19**

```
. regress Shareperpriceatthedateofr COV19  Earningpershare Othercomprehensiveincome
```

Source	SS	df	MS			
Model	18971.162	3	6323.72068	Number of obs	=	49
Residual	140718.144	45	3127.06986	F(3, 45)	=	2.02
				Prob > F	=	0.1243
Total	159689.306	48	3326.86053	R-squared	=	0.1188
				Adj R-squared	=	0.0601
				Root MSE	=	55.92

Shareperpriceatthedate~r	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
COV19	42.47777	17.41551	2.44	0.019	7.401132	77.5544
Earningpershare	-.0318489	.3328279	-0.10	0.924	-.7021986	.6385008
Othercomprehensiveincome	-.0005317	.0043374	-0.12	0.903	-.0092677	.0082043
_cons	60.08376	11.41177	5.27	0.000	37.09928	83.06825

Table 5 shows the model summary in equation (4) using linear regression.

The coefficient of other comprehensive income – derivatives is 0.031 suggesting that disclosure of other comprehensive income - derivatives will not significantly influence the investors' decision, thus the share price. However, the coefficient of Covid19 is influencing by 42, thus with a significant impact in share price.

R2 value of 17,11% is sustaining that the value relevance of the Covid 19 together with other comprehensive income - derivatives and earnings per share influence by 17,11% the share price, thus there are other elements there are not analyzed and influenced the share price.

Table 5. **Value relevance of earnings per share, other comprehensive income – derivatives and Covid 19**

```
. regress Shareperpriceatthedateofr COV19  Earningpershare Derivativefinancialinstruments
```

Source	SS	df	MS			
Model	27092.1521	3	9030.71735	Number of obs	=	48
Residual	131223.289	44	2982.34747	F(3, 44)	=	3.03
				Prob > F	=	0.0393
Total	158315.441	47	3368.41364	R-squared	=	0.1711
				Adj R-squared	=	0.1146
				Root MSE	=	54.611

Shareperpriceatthedateofr	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
COV19	42.00847	17.08851	2.46	0.018	7.568845	76.4481
Earningpershare	-.0309376	.3240852	-0.10	0.924	-.6840883	.6222132
Derivativefinancialinstruments	.0311108	.0179566	1.73	0.090	-.0050784	.0673
_cons	62.15982	10.13333	6.13	0.000	41.73744	82.58221

Table 6 shows the model summary in equation (5) using linear regression.

The coefficient of other comprehensive income – currency translation is 0.036 suggesting that disclosure of other comprehensive income - derivatives will not significantly influence the investors' decision, thus the share price. However, the coefficient of Covid19 is influencing by 43.17, thus with a significant impact in share price.

R2 value of 12,10% is sustaining that the value relevance of the Covid 19 together with other comprehensive income - currency translation and earnings per share influence by 12,10% the share price, thus there are other elements there are not analyzed and influenced the share price.

Table 6. **Value relevance of earnings per share, other comprehensive income – currency translation and Covid 19**

```
. regress Shareperpriceatthedateofr COV19  Earningpershare  Currencytranslationadjustments
```

Source	SS	df	MS			
				Number of obs	=	47
				F(3, 43)	=	1.97
Model	19015.1497	3	6338.38325	Prob > F	=	0.1322
Residual	138120.325	43	3212.10057	R-squared	=	0.1210
				Adj R-squared	=	0.0597
Total	157135.474	46	3415.98857	Root MSE	=	56.675

Shareperpriceatthedateofr	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
COV19	43.17277	17.9636	2.40	0.021	6.945716	79.39982
Earningpershare	.2991435	.7024584	0.43	0.672	-1.117499	1.715786
Currencytranslationadjustments	-.0036006	.0057213	-0.63	0.532	-.0151386	.0079374
_cons	57.30805	11.85939	4.83	0.000	33.39131	81.22479

Table 7 shows the model summary in equation (6) using linear regression.

Table 7. **Value relevance of earnings per share, other comprehensive income – actuarial gains/losses pensions and similar obligations and Covid 19**

```
. regress Shareperpriceatthedateofr COV19  Earningpershare  Actuarialgainslossesfrompens
```

Source	SS	df	MS			
				Number of obs	=	49
				F(3, 45)	=	2.02
Model	18973.7803	3	6324.59344	Prob > F	=	0.1242
Residual	140715.525	45	3127.01167	R-squared	=	0.1188
				Adj R-squared	=	0.0601
Total	159689.306	48	3326.86053	Root MSE	=	55.92

Shareperpriceatthedateofr	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
COV19	42.14227	17.55403	2.40	0.021	6.786635	77.4979
Earningpershare	-.0361787	.3315238	-0.11	0.914	-.703902	.6315446
Actuarialgainslossesfrompens	-.0011153	.0088543	-0.13	0.900	-.0189488	.0167183
_cons	60.21855	10.92564	5.51	0.000	38.21317	82.22392

The coefficient of other comprehensive income – actuarial gains/losses pensions and similar obligations is 0.001 suggesting that disclosure of other comprehensive income - actuarial gains/losses pensions and similar obligations will not significantly influence the investors' decision, thus the share price. However, the coefficient of Covid19 is influencing by 42.14, thus with a significant impact in share price.

R2 value of 11,88% is sustaining that the value relevance of the Covid 19 together with other comprehensive income - actuarial gains/losses pensions and similar obligations and earnings per share influence by 11,88% the share price, thus there are other elements there are not analyzed and influenced the share price.

Table 8 shows the model summary in equation (7) using linear regression.

Table 8. **Value relevance of earnings per share, other comprehensive income – actuarial gains/losses pensions and similar obligations, currency translation, derivatives and Covid 19**

```
. regress Shareperpriceatthedateofr COV19  Earningpershare    Derivativefinancialinstruments Curre
> algainslossesfrompens
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Source	SS	df	MS			
				Number of obs	=	46
				F(5, 40)	=	1.81
Model	28712.7799	5	5742.55599	Prob > F	=	0.1330
Residual	126934.322	40	3173.35804	R-squared	=	0.1845
				Adj R-squared	=	0.0825
Total	155647.102	45	3458.82448	Root MSE	=	56.333

Shareperpriceatthedateofr	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
COV19	39.64042	18.1742	2.18	0.035	2.908983	76.37186
Earningpershare	.2166122	.7095033	0.31	0.762	-1.217348	1.650572
Derivativefinancialinstruments	.0393539	.0213758	1.84	0.073	-.0038482	.082556
Currencytranslationadjustments	-.0011744	.0058518	-0.20	0.842	-.0130015	.0106526
Actuarialgainslossesfrompens	-.0088096	.0103441	-0.85	0.399	-.0297157	.0120966
_cons	57.02757	12.57277	4.54	0.000	31.61706	82.43809

The coefficient of actuarial gains/losses pensions and similar obligations is -0.008, the coefficient of derivatives is 0.03 and the coefficient of currency translation is of =-0.001 suggesting that disclosure of other comprehensive income will not significantly influence the investors' decision, thus the share price. However, the coefficient of Covid19 is influencing by 39.64 and the share per price by 0.21, thus with a significant impact in share price.

R2 value of 18,45% is sustaining that the value relevance of the Covid 19 together with other comprehensive income elements and earnings per share influence by 18,45% the share price, thus there are other elements there are not analyzed and influenced the share price.

5. Conclusions

Based on Ohlson model (1995), seven functions were derived for testing the hypotheses. The results suggest the other comprehensive income and its components have value relevance for investors and the influence of Covid19, but comprehensive income has no value relevance.

The limitation of this research is that it focused on 50 company-years only and therefore, results may not apply to other companies, and the companies subject to research are non-financial services companies.

6. Future research directions

Future research may investigate the value relevance of period 2017 -2019 and extended to other companies listed on this stock exchange thus not only DAX30. In order to conclude whether the comprehensive income and other comprehensive income are important and represents a significant information for investors on the Romanian capital market and in other European capital markets, a quantitative research should be performed based on value relevance of this information. In the scope of research, different econometric models that have tested the relevance of the comprehensive income and other comprehensive income will be analyzed and, on this basis, a model will be built in order to be tested in this research.

The researched population will be represented by the companies that apply IFRS on the capital market in Romania and in other European countries. The chosen interval will refer to the period after 2007 for two reasons: Since that year, Romania applies IFRS according to the requirements of European regulations and since 2007 IAS 1 "Presentation of Financial Statements" has been modified, which introduced the reporting of comprehensive income and other comprehensive income. The data to be processed will be obtained from databases (e.g. Thomson Reuters Eikon, Orbis, etc.) or will be collected manually from the financial reports of listed companies, as appropriate.

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Section 3

The EU Member States' SAIs. A Multidimensional Analysis

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Abstract: *The supreme audit institutions (SAIs) are essential democratic pillars, ensuring a climate of accountability and transparency by scrutinizing the stewardship of public resources. The European Union (EU) Member States' SAIs operate in an increasingly borderless environment, where citizens expect service excellence and quality, along with a standardized approach to societal challenges. While the international collaborative frameworks address the homogeneity of auditing standards across SAIs, the specifics of each SAI arising from diverse historical, constitutional and legal contexts are not currently under consideration and are generally regarded as a predetermined. Since EU Member States' SAIs stem from different models, analyzing their similarities and disparities, in relation to each state's particularities are instrumental in shaping stakeholder's expectances and determining future strategic directions for the development of EU's public external audit institutions. The paper presents a multidimensional comparative analysis of the EU Member States' SAIs, carried out by reviewing the SAIs' publications portfolios and the two latest European Court of Auditors reports on public audit in the EU. Also, data sets regarding the EU Member States were collected using Eurostat's statistical instruments. The research enables the professional environment and the socio-economic environment concerned with the external audit activity in the public sector (stakeholders, decision makers, legislators) to gain a common perspective on the EU Member States' SAIs, correlatively with their national characteristics, offering insights for deepening their institutional symmetry.*

Keywords: *External audit, public sector, SAI, European Union, Member States.*

1. Introduction

Since the 27 EU Member States have implemented institutional mechanisms to ensure the accountability for the management of public expenses and to guarantee its transparency and adequate oversight, the research premise consists of the importance of the external public audit conducted by the supreme audit institutions (abbreviated SAIs), as essential pillars of the democratic systems. The EU Member States' SAIs vary significantly when considering their home countries' context diversity and their institutional characteristics, the organizational and resource-related particularities (financial and human) and, therefore, they can be comparatively analysed from a multidimensional perspective.

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The objective of this paper is to carry out a multidimensional comparative study of the European Union Member States' SAIs, with the aim of highlighting the similarities and the differences between them, in order to shape stakeholders' expectances and decision-maker's vision for the future strategic development directions of EU's public external audit institutions.

The research is conducted on the 27 EU Member States' SAIs, after the UK's withdrawal in 2020. The research brings into the spotlight topical issues concerning the EU Member States' SAIs, reflecting the most recent trends and evolutions of the research domain.

The research adds value to the theoretical, conceptual and pragmatic aspects existing in the specialized literature, the external public audit being a rather limited topic from the research point of view. The research results are interesting not only for the professional environment, but also for the socio-economic environment concerned with the external audit activity in the public sector (stakeholders, decision makers, legislators).

The paper is structured in the following sections: the first section presents the specialized literature review; the second is dedicated to a multidimensional analysis of the EU Member States' SAIs and includes the research methodology description and the research results. The last section is dedicated to the research conclusions, limits and future research directions.

2. The specialized literature review

Generally, the supreme audit institutions are governmental entities empowered with the public sector's external audit function, which is typically established through the Constitution or by the supreme legislative body.

INTOSAI envisages the supreme audit institution as a public body of a state or of a supranational organization which, however designated, constituted or organized, exercises, by virtue of the regulatory framework, the highest public audit function of that state or supranational organization, in an independent manner, with or without jurisdictional competence.

OECD states that SAIs are traditionally known for the public expenditures' oversight, as a core part of their external audit portfolio. They undertake financial audits in order to assess the reliability and accuracy of the public entities' financial reporting and compliance audits in order to assess the public entities' compliance with their governing authorities. But the role of SAIs is constantly evolving, as they are increasingly taking a broader, more comprehensive view on reliability, effectiveness, efficiency and economy of policies and programmes. Nevertheless, OECD considers that SAIs have untapped potential to go beyond their traditional oversight role and contribute evidence for more informed policy-making.

Cordery and Hay (2019) highlight that SAIs hold an important role in ensuring public sector's accountability, their main activities consisting in the periodic audit of public entities' financial statements, assessing conformity, providing insight to parliamentary committees and also conducting performance audits.

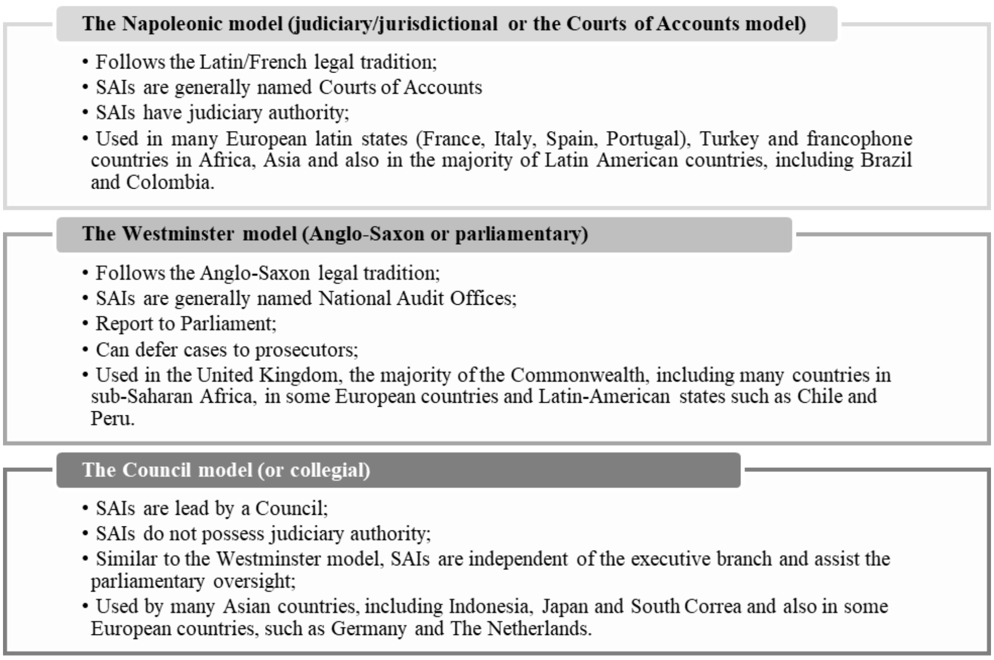
Kontogeorga (2019) states that SAIs decisively contribute to the quality and efficiency of the financial management in each country. Bonollo (2019) highlights SAIs' importance to public sector reform through their specific public resources oversight activities and by ensuring accountability.

SAIs independently examine the economic, efficient and effective use of public resources and the compliance of public expenses and revenue collection with the applicable norms. Their audit reports fundamentally contribute to improving public programs, policies and the public administration's financial management, assisting the parliamentary oversight of governments and improving public trust in the society's checks and balances system, shoring up the democratic system (European Court of Auditors, 2019). Similarly, Jansons and Rivza (2017) consider that SAIs provide the legislative and executive branches with an independent assessment on public financial management and the implementation of public policies by the administration, thus contributing to enhancing their development and performance.

In Svärdsten's (2019) view, SAIs have the authority to determine whether central administration entities function adequately and are frequently regarded as essential guardians of transparency and public sector performance.

SAIs are national agencies with the paramount role of overseeing public funds' management and government-issued financial data's quality and credibility. Their legal mandate, reporting relationships and effectiveness vary under different governance systems and governmental policies (Stapenhurst and Titsworth, 2001). The same authors highlight the three main SAI models, namely: The Napoleonic model (the judiciary/jurisdictional or the Courts of Accounts' model), the Westminster model (Anglo-Saxon or parliamentary) and the Board model (or Collegial) (Figure 1).

Figure 1. **The main SAIs' models**



(*Source*: Projection based on Stapenhurst and Titsworth (2001))

Each of these models entails stronger SAI connections with different institutions: in the case of the Napoleonic model with the judiciary system, in the case of the Westminster model with the executive and in the case of the Board model with the parliament (Jansons and Rivza, 2017).

Similarly, Johnsen (2019) emphasizes the significant variations regarding the organization of SAIs, their results, the relation with the stakeholders and their impact on auditees and society as a whole. His research results highlight that the Napoleonic model for SAIs' organization seems less efficient. SAIs pertaining to the Anglo-Saxon and Nordic models seem relatively efficient, but recent research indicates that auditors' independence and relevance remain persistent and challenging issues concerning the external public audit.

An independent SAI is an essential prerequisite for the accession of any state to the European Union.

The EU admission constituted a starting point for each Member State for its external public audit and financial control institutions' reform process. As a result, the EU Member States' SAIs benefit from the European vector in their development processes (Pintea and Achim, 2009).

Regarding the public control, as an essential pillar of the democratic systems, each EU Member State has established suitable mechanisms through its SAI for ensuring the transparency of public expenses' management. As a result, the supreme audit institution enjoys a redoubtable position within each country's responsibility chain. Such an approach was also supported by Oțetea *et al.* (2015), which stated that SAIs are a key part of the democratic nations' institutional framework.

Matiș *et al.* (2014) emphasize the diversity and the differences in SAIs activities in the context in which the countries have joined the EU in different stages. The diversity of EU SAIs' activities is also highlighted by Simon *et al.* (2018) by reference to the heterogeneous public finance systems and, implicitly, depending on the variability of public accounting development characteristics from each country.

Pintea and Achim (2009) have conducted a comparative analysis on Central and Eastern European SAIs (Romania, Bulgaria, Poland, Czech Republic, Slovenia, Slovakia and Hungary), emphasizing differences in their evolution since set up, in their organization and functioning. Furthermore, their research showed that, although differently worded, the SAIs' mission is essentially similar, respectively, to offer the stakeholders viable and competent information regarding public resources and public assets management.

Analyzing the external public audit typology in the EU Member States, the results of the research conducted by Trincu-Drăgușin and Ștefănescu (2020) show that the states that acceded EU in 2004, 2007, 2013 borrowed from the experience of the senior Member States, being oriented towards the standard typology (financial audits, performance audits and compliance audits) or to a wider range of missions.

Analyzing the dissemination degree of performance audit-specific information by the Romanian Court of Accounts compared to the other SAIs of the EU Member States, through the official websites examination, highlighted heterogeneous practices concerning the performance audit-specific information's disclosure between SAIs belonging to EU27 (Drăgușin (Trincu-Drăgușin) *et al.* (2021)). They emphasize that *„this heterogeneity is stemming from a diversity of constitutional and legal mandates, the presence or absence of a jurisdictional function, their collegial or monocratic leadership and each country's administrative heritage relative to public sector accountability, performance and transparency"*.

These approaches converge on the importance and the role of SAIs as fundamental pillars in the institutional framework of the EU Member States that monitor and enhance the public financial management's quality in each country, through their specific external public audit undertakings, promoting the public sector accountability and transparency in a good governance climate.

The results of the research conducted in this paper will contribute to supplementing the specialized literature dedicated to SAIs and to the external audit in the public sector, in general, as well as to the opening of innovative research directions for the Romanian literature in particular.

3. The EU Member States' SAIs. A multidimensional analysis

3.1. The research methodology

The paper considers the analysis of the main approaches in the specialized literature. The references envisaged for conducting the research include books, papers published in prestigious journals, reports issued by the competent authorities, as well as specialized websites consulted for strengthening the investigative approach.

In order to research how SAIs contribute to the EU Member States' democracies, we conducted a comparative study, aiming to obtain an answer the following research question: *What are the congruities and divergences between the EU Member States' SAIs?*

The research was carried out at the end of 2020 and the beginning of 2021 and it brings to attention the most topical aspects concerning the EU Member States' SAIs.

The information regarding SAIs' activity was collected by reviewing the publications portfolios available on their official websites and concurrently the two latest European Court of Auditors reports on public audit in the European Union (the 2019 and 2020 editions). Also, data sets regarding the EU Member States were collected using Eurostat's statistical instruments.

The research employed 17 comparison criteria, out of which 3 are specific to the EU Member States (EU membership year, government expenses and parliamentary oversight structures) and 14 are specific to SAIs. The latter encompass six analysis dimensions:

- Historical - SAI founding year and the age of current organizational form;
- Organizational - SAI institutional denomination and the existence of a jurisdictional function;
- Governance - SAI governance model, mandate type and duration;
- Audit - types of audit conducted and the audit competence levels;

- Financial - SAI budget share in total governmental expenses;
- Human resources - SAI total staff, percentage of audit-specific staff, gender balance and staff age.

In order to carry out the research, we used specific tools such as data and information collection and processing, analysis, synthesis, deductive reasoning, comparison, exemplification and mapping.

The research findings were interpreted correlative with the specialized literature in order to strengthen their validity.

3.2. The research results

The EU Member States' SAIs can be analyzed by correlating variables such as their founding year, the year of their current form of organization, the countries' EU membership year and their age (in the actual form of organization) (Table 1). The results indicate that while some SAIs boast a rich history (some dating back centuries), others have only recently been organized in their current form. The SAIs with the longest seniority (France, The Netherlands, Finland, Belgium, Greece, Portugal) as well as those with the lowest seniority (Sweden and Luxembourg) belong to the EU founding countries (1993) and to the first enlargement wave (1995).

Table 1. **EU Member States' SAI's founding year, current form of organization year, EU membership year and SAI's age**

No.	EU Member States	SAI's founding year	Year of the current form of organization	EU membership year	SAI's age
1	Austria	1761	1948	1995	73
2	Belgium	1831	1831	1993	190
3	Bulgaria	1880	1995	2007	26
4	Cyprus	1879	1960	2004	61
5	Croatia	1993	1993	2013	28
6	Denmark	1976	1976	1993	45
7	Estonia	1918	1990	2004	31
8	Finland	1825	1825	1995	196
9	France	1319	1807	1993	214
10	Germany	1714	1950	1993	71
11	Greece	1833	1833	1993	188
12	Ireland	1866	1923	1993	98
13	Italy	1862	1948	1993	73
14	Latvia	1923	1991	2004	30
15	Lithuania	1919	1990	2004	31
16	Luxembourg	1840	2000	1993	21
17	Malta	1814	1997	2004	24
18	Poland	1809	1919	2004	102
19	Portugal	1389	1849	1993	172
20	Czech Republic	1919	1993	2004	28
21	Romania	1864	1992	2007	29
22	Slovakia	1919	1993	2004	28

No.	EU Member States	SAI's founding year	Year of the current form of organization	EU membership year	SAI's age
23	Slovenia	1994	1994	2004	27
24	Spain	1851	1978	1993	43
25	Sweden	1921	2003	1995	18
26	The Netherlands	1447	1814	1993	207
27	Hungary	1870	1989	2004	32

(*Source*: Own processing based on information from SAIs' official websites)

By recourse to the revision of the official websites of the 27 EU Member States' SAIs, the research results highlight, from an institutional denomination standpoint, two main categories of SAIs, namely Courts of Accounts and Audit Offices (National Audit Offices, Supreme Audit Offices, Office of the Comptroller/Auditor General).

The geographical distribution of EU Member States SAIs along these lines is presented in Figure 2.

From this perspective, the research results indicate that northern EU states' SAIs are generally titled Audit Offices, while, in contrast, those belonging to the southern part of the EU are named Courts of Accounts, their distribution between the two categories being on quasi-parity (56% Audit Offices and 44% Courts of Accounts).

Figure 2. **EU Member States' SAIs according to their denomination**

From a governance standpoint, the results highlight that EU Member States' SAIs can have monocratic governance (being led by a single person - President, Auditor General or Comptroller/Auditor General) or collective governance (being led by a collegial body - council, college, senate or plenum). The geographical distribution of EU Member States SAIs on these two categories is presented in Figure 3.

Figure 3. **EU Member States' SAIs classification according to their governance style**

(*Source*: Own projection based on European Court of Auditors (2020))

Among the monocratic SAIs, 64% are led by an Auditor General (Bulgaria, Croatia, Cyprus, Denmark, Estonia, Finland, Lithuania, Malta, Sweden), 29% are led by a President (Austria, Hungary, Italy and Slovakia) and only 7% are led by a Comptroller/Auditor General (Ireland).

While SAIs with monocratic governance are characterized by centralized decision-making process, those who employ a collegial type of governance can be further nuanced on the size of their collegial body (Table 2).

Table 2. **Collegially - governed SAIs classified by the size of their Board**

No.	EU Member States	SAI governing body	Collegial Body members
1	Greece	Plenum	42
2	Portugal	President and Plenum	19
3	Romania	Plenum	18
4	Poland	President and (in some cases) Collegial body	18
5	Czech Republic	Board	17
6	Germany	President, Senate (Board)	16
7	Spain	Plenum	13
8	Belgium	General Assembly	12
9	Latvia	Council, Auditor General	7
10	France	First President and 6 Presidents of chambers	7
11	The Netherlands	Board	5
12	Luxembourg	President, Vice-President and three counsellors	5
13	Slovenia	Senate	3

(*Source*: Own processing based on European Court of Auditors (2020))

Such analysis highlights that the most decentralized decision-making process belongs to the Greek SAI, which sets itself apart, boasting a collegial body with 42 members. The Romanian SAI ranks third among the collegial-body SAIs, with its Plenum composed of 18 members, titled accounts councilors. Conversely, we can remark that the Slovenian SAI, although collegially governed, has the most concentrated decision-making process, with only 3 Senate members. Regarding the leadership style, the research conducted by Matiș *et al.* (2014) has revealed that among EU supreme audit institutions, SAIs that are monocratically led tend to publish more English language information on their official websites, compared to SAIs with collegial leadership style.

A further distinction can be achieved with regard to the governing members' mandate duration and renewability, thus identifying SAIs governed on a limited mandate (renewable or non-renewable) and SAIs governed on an unlimited mandate. From this perspective, the analysis of the data and information disseminated by the European Court of Auditors (2020) indicate that, in the EU, the mandate duration of leaders or collegial body members of SAIs governed on a limited mandate basis (renewable or non-renewable) varies between 3 and 12 years. SAIs with the longest leadership mandate hail from Central Europe (12 years – Hungary, Austria, Germany). Alongside them, Romania is one of the EU Member States with the most prolonged SAI leadership mandate duration, with its Plenum members exerting a nine-year non-renewable mandate. With regard to the renewable character of SAIs' leadership mandate, research results emphasize that EU Member States' SAIs are generally governed based on a renewable mandate (Spain, Poland, Latvia, Estonia, Lithuania, Malta, Belgium, Finland, Luxembourg, Denmark, Croatia, Slovakia, Slovenia, Hungary) rather than on a non-renewable mandate (Romania, Sweden, Austria). From a diametrically opposite perspective, in five EU countries, the SAIs governance is based on an unlimited mandate until the retirement age is reached (Cyprus, Ireland, The Netherlands, Italy and France).

Furthermore, the research results denote that we can distinguish EU Member States' SAIs with or without jurisdictional function. SAIs with jurisdictional function can conduct judicial proceedings and sanction public servants involved in the mismanagement of public funds or assets. The geographical distribution of EU Member States' SAIs along this line is presented in Figure 4.

The research results highlight that only six South-Western EU Member States' SAIs possess a jurisdictional function. From this perspective, the results are converging with Jansons and Rivza's (2017) approach, which emphasize that the judicial (Napoleonian) model is more widespread in this part of Europe. In correlation with the year of each country's EU membership, SAIs with jurisdictional function hail from longstanding EU Member States (Portugal, Spain, France, Italy, Greece and Belgium).

By adapting the EUROSAI's (2021) vision and by recourse to the revision of the detailed membership information, available on its official website, we differentiated the EU Member States' SAIs based on five functioning models (jurisdictional, single head, single head – Westminster, Westminster and collegiate models) (Figure 5).

SAIs categorized as pertaining to the jurisdictional functioning model (Belgium, France, Greece, Italy, Portugal and Spain) are all bearing the Court of Accounts appellative and exert the jurisdictional function.

Figure 4. **EU Member States' SAIs classification according to the existence of the jurisdictional function**

(*Source*: Own projection based on European Court of Auditors (2020))

Although, according to the authors Jansons and Rivza (2017), the Westminster model is also known as the Audit Offices or the single head model, we note that EUROSAI offers a slightly differentiated classification.

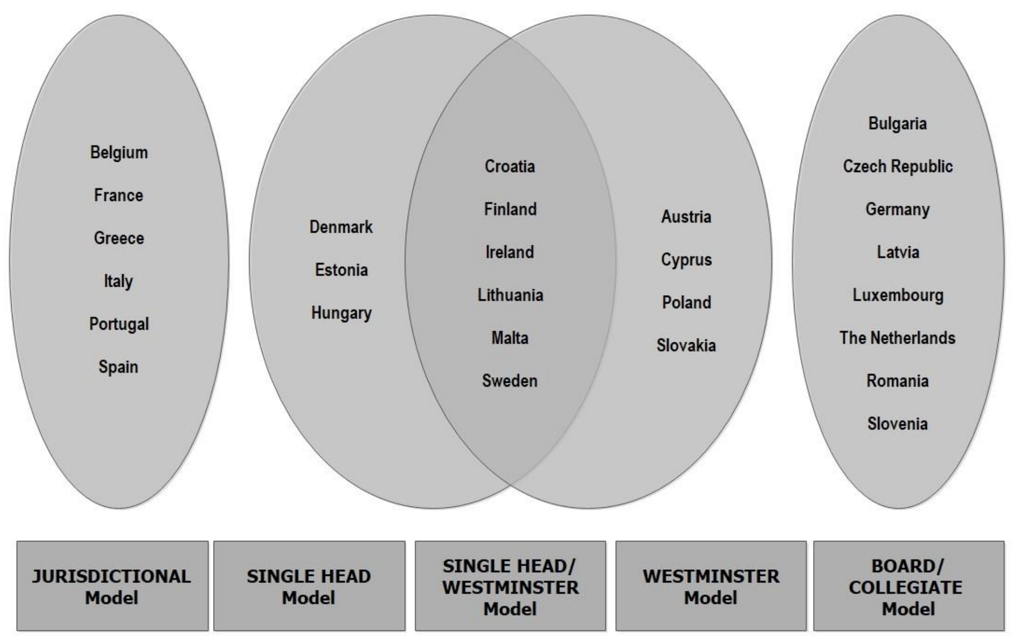
SAIs categorized as belonging to the single head model (Denmark, Estonia and Hungary) are indeed monocratically led and bear the National Audit Office name. The Hungarian SAI is led by a president, while a general auditor leads the Denmark and Estonia SAIs, all enjoying a renewable mandate.

SAIs categorized as single head – Westminster (Croatia, Finland, Ireland, Lithuania, Malta and Sweden) are all monocratic, titled as Audit Offices and are led by a general auditor. Concurrently, the leader's mandate is renewable (as is the case with Croatia and Finland), one-time renewable (Lithuania and Malta), non-renewable (Sweden) or unlimited to the legal retirement age (Ireland).

SAIs belonging to the Westminster model (Austria, Cyprus, Poland and Slovakia) are monocratic, except for SAI Poland, which is led by a collegial body. The Austrian and Slovak SAIs are led by a president, while Cyprus's SAI by an auditor general. Their governing mandate is renewable (as is the case with Poland), one-time renewable (Slovakia), non-renewable (Austria) or unlimited to the legal retirement age (Cyprus).

SAIs pertaining to the collegiate model of functioning (Bulgaria, Czech Republic, Germany, Latvia, Luxembourg, The Netherlands, Romania, Slovenia) are governed by a collegial body, except for the Bulgarian SAI which is monocratically led. Among these, the majority are titled as Courts of Accounts (Germany, Luxembourg, The Netherlands, Romania, Slovenia), while the others are named Audit Offices.

Figure 5. **EU Member States' SAIs classification based on functioning models**



(*Source*: Own projection based on https://www.eurosai.org/en/about-us/members/ accessed on 8 January 2021)

EU Member States' SAIs are independent public organisms, with one of their essential characteristics being their independence from the legislative, executive and judicial branches of government, as constitutionally stated. However, it is worth mentioning that some SAIs are part of the parliamentary oversight structure, as presented in Figure 6.

SAIs operate under heterogenous mandates and organizational models. Such an approach was endorsed by Matiș *et al.* (2014). However, as Ispir (2008) underlined, a ubiquitous mandate characteristic for all EU Member States' SAIs refers to reporting on public funds management. Each state's Constitution expressly provides this attribute and, although the legal text varies, the essence is similar. This stems from the budgetary accountability cycle that debuts with the approval of the budget by the Parliament, ensues with the budget execution by the governmental bodies and is finalized with the Parliament approving the budgetary execution, subsequent to the SAI's examination of resource management and its report to the legislative.

According to the European Court of Auditors (2019), despite their diversity, EU Member States' SAIs are generally congruent with maintaining close relationships with their respective parliaments. These relations are founded preponderantly on the SAIs' reporting on their specific activities, which generates debates in special committees (and in some cases in committees that deal with specific subjects). SAIs' representatives may attend the parliamentary debates and, in some member states, the SAI head can be heard on specific SAI matters. Likewise, often parliaments retain a significant role in nominating or appointing SAI's governance. Furthermore, in some instances, the Parliament approves the SAI's budget or appoints an external auditor for its financial statements. Conversely, some SAIs have the authority to audit the Parliament's administrative expenses.

Figure 6. **EU Member States' SAIs classification according to their role in parliamentary oversight**
(*Source*: Own projection based on European Court of Auditors (2020))

From this standpoint, when examining the external audit practices of Baltic countries, by recourse to the analysis of SAIs' regulatory framework, Jansons and Rivza (2017) showed that, generally, SAIs hailing from this region have strong cooperation with their parliaments in the reporting phase of their activity. Similarly, most of these SAIs are firmly integrated with the legislative branch when appointing the SAI's leadership and approving its budget. Likewise, when analyzing the Spanish Court of Accounts as a guarantor of the social state, the democratic state and the rule of law, Campos (2019) advocates for a more direct SAI contact with the citizens and a more fluid relationship with the Parliament.

In Romania's case, Oțetea *et al.* (2015) showed that the Parliament does not have a specialized committee to manage the Court of Accounts' reports, as is the case with most EU member states, and underlined the fact that such a specialized committee would contribute to enhancing the Parliament's attention to the Court's activity and thus becoming an essential ally in consolidating the Court's authority.

When assessing the conformity and regularity of public expenses and revenues, and also the efficiency, efficacy and economic nature of policies, programs and decisions, EU SAIs can conduct ex-ante or ex-post engagements, according to their mandate. Furthermore, some SAIs assess the impact of public policies and programs. EU SAIs' classification on the type of audits conducted is mapped in Figure 7.

Figure 7. **EU Member States' SAIs classification according to the audit types conducted**

(*Source*: Own projection based on European Court of Auditors (2020))

As Voiculescu (2009) showed, ex-ante audit (pre-audit or "a priori" audit) implies examining transactional correctness before their finalization, in some cases even starting with their initial engagement. Otherwise, transactions cannot be assumed without pre-audit, or payment can be authorized only after an auditor examines the supporting documents and confirmation is obtained on goods delivered, work conducted, or services rendered. In contrast to the countries that employ centralized ex-ante audits conducted by the SAI, other countries view it as an administrative responsibility. Conversely, ex-post audit (post-audit, subsequent audit or "a posteriori" audit) implies examining transactions or events consequent to their achievement. Notably, there is a change of focus in some EU countries in the last years, from ex-ante audit to ex-post audit. Our research highlights that presently, only four EU Member States' SAIs conduct ex-ante audits (Greece, Italy, Portugal and Slovenia).

Regarding SAI competence levels, Jansons and Rivza (2017) highlighted that SAIs generally audit central government–related structures and, in some cases, they can conduct audits on the local public administration. EU SAIs audit revenues and expenses on the central or federal level and, in some cases, they can audit regional, local or municipal public administrations. Most SAIs are also mandated to audit revenues and expenses of public enterprises or individual beneficiaries (European Court of Auditors, 2020). EU SAIs' classification according to their competence levels is mapped in Figure 8.

Figure 8. **EU Member States' SAIs classification according to their audit competence levels**
(*Source*: Own projection based on European Court of Auditors (2020))

The research results indicate that over half of EU SAIs audit all public administration levels, while the Bulgarian SAI only audits the central government and municipalities.

From an opposite perspective, SAIs belonging to Czech Republic, France, Germany, Ireland, Luxembourg, The Netherlands and Sweden only audit the central government. Belgium, Finland, Denmark and Malta audit the central and regional/local governments, aspect that we consider needs imperatively to be addressed in correlation with the importance of municipality audits, as specific approaches with a significant impact on regional development. These results converge with those obtained by Jansons and Rivza (2017) on Baltic region SAIs, showing that the Scandinavian SAIs (Denmark, Sweden and Finland) are not mandated to audit municipalities, this task belonging to local municipality auditors (Sweden and Finland) or private audit entities (in Denmark).

Kontogeorga (2019) emphasizes that, although SAIs have adopted new approaches to government audit, which led to a significant revamping of the public finance control paradigm, the Greek SAI is still in a transitional period and employs a traditional audit approach to the majority of public transactions, without conducting parallel performance audits. Her research results converge on the idea that the current audit model must be overhauled, despite the hindrances that delay progress. Earlier, Kontogeorga (2017) has conducted an empirical research based on questionnaires distributed to Greece's Court of Accounts auditors, aiming to analyze how the national regulatory framework contributes to ensuring that public entities conform to laws and budgetary regulations. Her results indicate that most respondents considered the public finances management regulatory framework as unclear and, as such, discouraged compliance. Likewise, the research demonstrated that non-compliance with regulations was mainly caused by their ambiguity and complexity rather than deliberate intent. Such aspects should be addressed preponderantly by simplifying the regulations and improving the legislation quality rather than coercive measures.

From the financial resources' perspective, Sacer *et al.* (2011) emphasize that most EU SAIs enjoy financial independence, prepare their own annual budget, although generally, the parliament approves the SAI's budget as part of the national budget. Furthermore, SAIs can independently execute their expenditure budgets. Regarding the human resources, their research indicates that SAIs enjoy functional independence on personnel recruitment, as well as their planned activities.

To further elaborate on the comparative analysis, Table 3 presents several datasets descripting EU Member States and their respective SAIs. Starting with the centralized data, we determined a series of indicators, namely SAI's budget share in the governmental expenses, SAI budget per staff and SAI personnel/1,000 inhabitants.

When analyzing the SAI budget relative to their staff, the results indicate that the most significant allotments per SAI employee come from the more developed EU countries (Italy, Luxembourg, Germany, Austria, The Netherlands, Sweden, France, Finland and Belgium – over 0.1 mil. euro/SAI staff). Simultaneously, the lowest values were identified in the case of Bulgaria, Croatia, Lithuania, Poland, Slovakia, Greece, Latvia and Romania (under 0.05 mil. euro/SAI staff).

This perspective must be correlated with the results obtained for SAI personnel/1,000 inhabitants. From this standpoint, the best representativeness for the external public audit function is insured by Cyprus, Malta, Lithuania and Romania (with indicator values exceeding 0.1), while the most negligible presence is in the Netherlands, Germany, Spain and Finland. Notably, the best representation for the public external audit function is achieved by the Central and Eastern Europe ex-communist countries, compared to their western EU neighbors.

These results are convergent with the third indicator analyzed - SAI's budget share in the governmental expenses, where SAIs with higher personnel representation in the general population and often with lower budget allotment per staff hold the top positions, as is the case with the Romanian SAI (0.0988%), followed by Cyprus, Malta and Latvia.

Comparatively, the Lithuanian, Estonian and Hungarian SAIs' indicator nears 0.05%, while The Netherlands, Germany, Spain and Finland SAIs have the smallest percentages of expenses compared to the governmental expenses (approximatively 0.01%).

Table 3. **EU Member States and SAIs' factsheet**

EU Member States	**Pop.**	**Gov. expenses**	**SAI budget**	**% of national budget**	**SAI staff**	**Audit staff**	**M**	**F**	**Mean age**
	(mil.)	**(mil. eur)**				**(%)**			
Austria	8.9	192,488	34.9	0.04%	276	75%	51%	49%	49
Belgium	11.5	247,877	51.3	< 0.01%	448	69%	59%	41%	49
Bulgaria	7	22,216	9.4	0.138%	411	75%	26%	74%	46

EU Member States	Pop.	Gov. expenses	SAI budget	% of national budget	SAI staff	Audit staff	M	F	Mean age
	(mil.)	(mil. eur)				(%)			
Cyprus	0.8	8,929	7.4	0.08%	139	83%	35%	65%	44
Croatia	4	25,469	8.4	0.046%	290	83%	18%	82%	47
Denmark	5.8	154,012	30	< 0.01%	287	*	47%	53%	*
Estonia	1.3	10,945	5.4	0.05%	82	76%	35%	65%	41
Finland	5.5	128,232	16.2	0.03%	140	77%	45%	55%	47
France	67	1,347,948	220.7	< 0.022%	1,798	73%	49%	51%	50
Germany	83	1,558,090	162	0.045%	1,153	82%	58%	42%	51
Greece	10.7	87,030	34.3	< 0.01%	780	65%	35%	65%	50
Ireland	4.9	87,285	14.6	< 0.022%	185	*	50%	50%	42
Italy	60.3	870,580	363.7	< 0.01%	2,423	*	43%	57%	55
Latvia	1,9	11,697	6.7	0.068%	171	75%	22%	78%	41
Lithuania	2.7	16,899	9.2	< 0.08%	293	82%	21%	79%	42
Luxembourg	0.6	26,811	5	*	36	*	64%	36%	*
Malta	0.5	4,985	3.5	0.07%	57	84%	40%	60%	42
Poland	37.9	222,663	66	0.07%	1,602	71%	54%	46%	41
Portugal	10.2	90,984	28.6	0.014%	553	*	33%	67%	52
Czech Republic	10.6	92,505	35.7	0.06%	465	69%	38%	62%	47
Romania	19.3	80,708	79.7	0.20%	1,966	82%	39%	61%	48
Slovakia	5.4	40,121	12.8	0.07%	300	77%	39%	61%	49
Slovenia	2	20,953	6.9	0.051%	133	67%	29%	71%	48
Spain	47	523,441	63	0.01%	740	45%	39%	61%	53
Sweden	10.2	234,173	38	< 0.15%	316	81%	41%	59%	45
The Netherlands	17.3	340,424	32.1	0.01%	245	*	52%	48%	47
Hungary	9.7	66,596	32.1	< 0.05%	506	82%	36%	64%	46

(*Source*: Eurostat and European Court of Auditors (2020))

Also, the research results reveal that SAIs hailing from Central and Eastern Europe ex-communist countries (Romania, Latvia, Lithuania, Estonia, Hungary, Bulgaria, Czech Republic, Croatia, Slovenia, Slovakia and Poland) enjoy considerably higher allocations than more developed EU countries when compared to the total governmental expenses.

When analyzing the audit-specific staff compared to the entire SAI staff, the results show higher proportions in Malta, Cyprus, Croatia, Germany, Lithuania, Romania, Hungary and Sweden (over 80% of total SAI staff), while Belgium, Czech Republic, Slovenia, Greece and Spain have lower proportions (under 70% of total SAI staff).

This perspective must be adequately correlated with the existence of the jurisdictional function, where the audit-specific personnel naturally tends to form a lesser proportion of the entire SAI staff (Belgium, France, Greece, Italy, Portugal and Spain).

The average SAI staff age analysis emphasizes a general variation between 41 and 55 years among all EU Member States' SAIs, with Poland, Latvia, Estonia, Malta, Lithuania, Ireland and Cyprus enjoying the youngest staff (a mean staff age under 45 years), while the most senior staff is found in Italy, Spain, Portugal, Germany, France and Greece (over 49 years). Correlative with the EU membership year, we can observe that SAIs with significantly older staff belong to earlier EU members, while SAIs employing younger staff belong to countries that joined the EU later, generally in the 2004 expansion (except for Ireland).

From the SAI gender balance perspective (Figure 9 and Table 4), the research results highlight that 74% of EU Member States' SAIs employ preponderantly female staff. Ireland's SAI is the only one to achieve gender equilibrium.

Figure 9. **EU Member States' SAIs gender balance**
(*Source*: Own projection based on European Court of Auditors (2020))

As noticeable from the mapping, male-predominant SAIs are concentrated in the EU's center (Luxembourg, Belgium, Germany, Poland, The Netherlands, and Austria).
The most significant gender unbalances favoring women were recorded in Croatia, Lithuania, Latvia, Bulgaria and Slovenia (with over 40% gender bias).

Table 4. **EU Member States' SAIs gender balance**

EU Member States	**SAI staff**		**Gender bias**
	Male	**Female**	**F-B**
Austria	51%	49%	-2%
Belgium	59%	41%	-18%
Bulgaria	26%	74%	48%
Cyprus	35%	65%	30%
Croatia	18%	82%	64%
Denmark	47%	53%	6%
Estonia	35%	65%	30%
Finland	45%	55%	10%
France	49%	51%	2%
Germany	58%	42%	-16%
Greece	35%	65%	30%
Ireland	50%	50%	0%
Italy	43%	57%	14%

EU Member States	SAI staff		Gender bias
	Male	Female	F-B
Latvia	22%	78%	56%
Lithuania	21%	79%	58%
Luxembourg	64%	36%	-28%
Malta	40%	60%	20%
Poland	54%	46%	-8%
Portugal	33%	67%	34%
Czech Republic	38%	62%	24%
Romania	39%	61%	22%
Slovakia	39%	61%	22%
Slovenia	29%	71%	42%
Spain	39%	61%	22%
Sweden	41%	59%	18%
The Netherlands	52%	48%	-4%
Hungary	36%	64%	28%

(*Source*: Own processing based on European Court of Auditors (2020))

With regard to SAIs' human resources, Pleșa (2017) aimed to obtain the profile for the young public external auditor by highlighting the main traits of youngsters under 35 years old that opt for a career in supreme audit institutions. His research results indicate professional development as the essential factor determining the young auditors to remain within the SAIs. Furthermore, the research results pointed to the need for SAIs to consider the Y generation's characteristics in order to recruit and retain young auditors for whom the carrier, professional development and control over their activity prevail over monetary aspects.

4. Conclusions

Our investigative approach on the EU Member States' SAIs added nuances that are not found in the previous research papers regarding the external audit in the public sector. The paper underscores the role and importance of SAIs, as key pillars of the EU Member States' institutional framework, charged with monitoring and enhancing the quality of each country's public financial management through their specific external public audit undertakings, promoting the public sector accountability and transparency in a climate of good governance.

By recourse to several comparison criteria, we differentiated the EU Member States' supreme audit institutions into 5 institutional models (jurisdictional, single head, single head – Westminster, Westminster and collegiate models).

However, the envisaged SAI functioning models are generic and serve an indicative purpose, while SAIs are categorized within the models based on the similarity of specific characteristics with other SAIs. In practice, both the historical context of SAIs' genesis and the statal, constitutional and legislative transformations that took place during their existence have affected their present characteristics and particularities, thus determining a significant heterogeneity of specific institutional attributes even within the same functioning model.

In essence, there is no comprehensive pattern that perfectly describes several SAIs, both from the standpoint of specific institutional particularities and traits, and the national context in which the SAI operates.

Our research entailed a multidimensional comparative analysis of the 27 EU Member States' SAIs, based on 17 comparison criteria. The research results underscore a series of similarities, congruences or convergences between SAIs by reference to the comparison and classification criteria pursued. However, the general conclusion of the research converges on the diversity of the EU Member States' SAIs, since they manifest a series of specific characteristics, stemming from the particularities in their normative framework, the socio-economic context and the political and administrative system of each country.

EU's core values rest upon the rule of law, at both the national and the European echelon. Thus, it is paramount to ensure the existence of independent and professional public audit institutions that assess the economy, effectiveness, efficiency, legality and regularity of the national actions, aiming to improve the accountability, transparency and financial management, thereby enhance citizens' trust and respond effectively to the current and future challenges.

In the light of the recent epidemiologic developments that commanded synchronized actions on various levels such as research, healthcare, welfare, fiscal and financial, banking, transportation, IT&C, state aid, public communication, public procurements, the need for a standardized approach to public audit, its setup and competence, becomes even more apparent.

The main research limitations refer to certain barriers regarding the approach of the external public audit and the EU Member States' SAIs in the specialized literature, the heterogeneity of the analyzed official websites and the manual data collection and processing, but the latter risk is inherent to this type of research.

The research of the EU Member States' SAIs is ample and thus the future investigative dimensions envisage extending the multidimensional analysis using clustering, facilitating in-depth classification studies among SAIs.

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Relevance of the Value of Accounting Information - Analysis in the Specialty Literature

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Abstract: *The usefulness of accounting information is given by its relevance. Relevant information is a factor influencing economic decisions made at the level of companies, with a strong impact on the economy and the public interest, which makes relevant financial-accounting information a pillar of the economic system. At the same time, other qualitative characteristics such as comparability, opportunity, verifiability and intelligibility are attributed to relevant accounting information, which amplifies its usefulness. The area of interest of this article is the relevance of the value of accounting information, considered an essential attribute of it quality. The main objective is to determine how the relevant accounting information is seen in the specialty literature. Thus, through a deductive approach, the analysis focuses on two perspectives: the perspective of Conceptual Accounting Frameworks and the perspective of users of accounting information, starting from the studies found in the specialty literature.*

Keywords: *Accounting information, quality, qualitative characteristics, relevance of accounting information, users' perception of accounting information.*

1. Introduction

The accounting information aims to ensure the creation of the necessary premises in the sustainable development of an entity, but also to contribute to the improvement of the decision-making system in order to carry out the activities in optimal conditions. However, the more complex it is, the more directly it helps to achieve the set objectives, ensuring control and the achievement of the main objectives. A common language in the business sector, accounting information must constantly adapt to changes affecting the business environment because of technical and scientific progress and, in addition, must ensure a realistic and transparent knowledge of economic entities. At company level, information comes in various forms and is used for planning, control and decision-making. Regardless of the purpose for which they are requested, the information must be of good quality. For information to be of good quality, it must meet certain attributes: the cost-benefit ratio must be positive, the information must be complete, beneficiary-oriented and easy to use, free from errors, relevant, timely and to come from a reliable source (Morariu and Gîrbină, 2013). At the same time, according to the Conceptual Accounting Framework developed by IASB and FASB, one of the quality criteria associated with financial-accounting information is represented by its qualitative characteristics.

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This article aims to develop the concept of relevance of accounting information in the multitude of its qualitative characteristics, because relevant information is an influencing factor on economic decisions made at company level, with a strong impact on the economy and public interest, which makes relevant accounting information a pillar of the economic system. Therefore, the relevance of the value of accounting information is analyzed from two perspectives: the perspective of Conceptual Accounting Frameworks (IASB and FASB) and the perspective of users of accounting information based on studies in the literature.

2. Research methodology

The research methodology includes as a research method the descriptive analysis, reason for which the research perspective is a theoretical one. The descriptive analysis has a deductive character, its basis being represented by the main results and scientific contributions encountered in the literature, regarding the concept of relevance of the value of accounting information. The notion is analyzed both in the vision of the two international regulators, IASB and FASB, and in the perspective of users of accounting information based on studies found in the literature. The research methodology has a transversal and longitudinal character. The cross-sectional character results from the comparative analysis performed between the different scientific articles considered relevant for research, while the longitudinality results from the descriptive analysis on the literature. Specialized articles found in various international databases (Science Direct, PROQUEST Central, JSTOR Business Collections I, II, III and IV) were accessed, as well as the regulations provided by the Conceptual Accounting Frameworks - IASB and FASB and the national norms represented by the O.M.F.P. 1802/2014. The key structures in search of the most useful articles and studies were the relevance of value, the relevance of the value of accounting information, users' perception of the relevance of value.

3. Literature review

At the level of an economic society, decisions have a key role to play in ensuring the stability and evolution of business. Thus, it is the moment when the accounting information intervenes because, through it, data and economic-financial indicators are obtained that help the management to establish short, medium or long-term action strategies or to adopt measures through which to consolidate its position in the environment in which it operates. In the decision-making system, accounting information has a priority role offered by a wide range of characteristics (Horomnea, 2012), among them the following: it has a high degree of relevance and certainty, allows through specific procedures a global knowledge, but also analytical perimeters analyzed, offers the possibility to perform comparative analyzes in time and space.

If we refer to financial-accounting information, it is of great interest to many stakeholders. Therefore, it must be of quality, a concept for which, in the literature, there is no single definition, but there is a wide range of meanings, depending on the purpose for which the accounting information is to be used. Thus, the quality of financial information takes into account the extent to which the reports of economic companies reflect the basic economic situation as well as the performance recorded during the measurement interval (Elbannan, 2011). Also, the concept of quality can be defined as a precision with which financial reporting provides capital investors with information on expected cash flows. (Biddle *et al.*, 2009) The quality of accounting information can be assessed based on quality criteria. These criteria are presented in both Conceptual Accounting Frameworks, prepared by the IASB and the FASB. The most important quality criteria of the financial-accounting information, designated by the professional bodies mentioned above, which ensure a high level of quality consist in the objective and the qualitative characteristics of the accounting information.

This article aims to focus on the notion of relevance of accounting information, a concept treated intensely in the literature. The relevance of value refers to the ability of accounting information to provide the information needed to determine a company's value (Francis and Schipper, 1999). We find a similar definition at the authors Leif Atle Beisland and Mattias Hamberg (2013), according to which the relevance of value is the ability of information contained in financial statements to explain the share price in a sample of companies. For other authors, the concept of value relevance is seen as an informative statement of financial statements (Lam *et al.*, 2013). In this article, the authors study the changes that occur in the level of relevance of the value of accounting information in the last 20 years among Chinese companies, as well as the factors that lead to a differentiation of companies with a significant improvement in relevance value compared to those with little improvement. The results of their research showed that stronger value relevance is found in smaller companies with a higher tangibility of assets.

Another study targeting the Chinese stock market (Sami and Zhou, 2004) analyzes the difference between the relevance of the value of accounting information prepared and audited according to Chinese GAAP for A-share investors and that of accounting information prepared in accordance with International Accounting Standards for Stock Investors. B. The results of the research showed that, in both cases, the accounting information has a strong impact in the process of determining the share price. Another finding of the study is that the accounting information on the B stock market is much more relevant in terms of value compared to the A market. A similar research result was obtained in 2007 by the authors Liu and Liu. The study analyzes listed companies in Shanghai, Shenzhen and Hong Kong between 1999 and 2003, and the relevance of the value is demonstrated based on the modified Ohlson Model. This time, three markets were analyzed (A, B and H) each with a different relevance to the value of the accounting information. However, following analyzes, they found that the accounting information on Markets B and H is much more relevant than that on Market A. Therefore, the accounting information prepared in accordance with IAS / H.K. GAAP (Markets B and H) are much more relevant than those on Market A, developed on the basis of Chinese GAAP (Liu and Liu, 2007).

Another perspective on the concept of value relevance concerns how the reporting location may influence the relevance of other global income (OCI), with the change in accounting standards that require companies to declare OCI in a statement performance (Schaberl and Victoravich, 2015). The research results of the two authors showed that this change imposed by accounting standards has led to a decrease in the relevance of value to other global revenues.

In Romania, Andrei Filip and Bernard Raffournier studied the concept of value relevance, among others. They investigated the association between stock market prices and earnings reported by companies listed on the Bucharest Stock Exchange and found a limited degree of relevance of value. Mironiuc *et al*. (2015) investigate the relevance of the value of global income in relation to net income, following the application of IFRS in Romania in 2012. For this study, 65 companies listed on the Bucharest Stock Exchange were selected. The paper also aims to influence the four Big Four in the direction of increasing the relevance of value on the financial market, given that the audit process is a means to illustrate the true and fair image of companies.

4. The concept of relevance of accounting information in the multitude of qualitative characteristics

4.1. Qualitative characteristics of financial-accounting information

The IASB and FASB Conceptual Accounting Framework, as well as the national norms represented by OMFP 1802/2014 present the same qualitative characteristics of accounting information, grouped into two broad categories: fundamental qualitative characteristics (relevance and accurate representation) and complementary qualitative characteristics (comparability, verifiability, opportunity and intelligibility).

The fundamental qualitative characteristics of accounting information are relevance and accurate representation. Information is relevant if it has the ability to influence the final decisions of users. To be relevant, the information must have predictive value, confirmatory value, or both. (OMFP 1802/2014, 2014) The faithful representation assumes that the information provided is complete, neutral and error-free; the accounting information exactly reflects the reality of economic events and operations.

Qualitative amplifying features increase the usefulness of accounting information. Comparability allows the identification of similarities and differences between elements. This can be done in time and space, so it is important to apply the same methods of valuing and presenting the elements in the financial statements. Verifiability refers to the fact that the users of accounting information represent exactly the economic events and phenomena. The opportunity involves ensuring that users have timely access to accounting information so that they can make the right decisions. Intelligibility means that accounting information must be easy to understand for all categories of users.

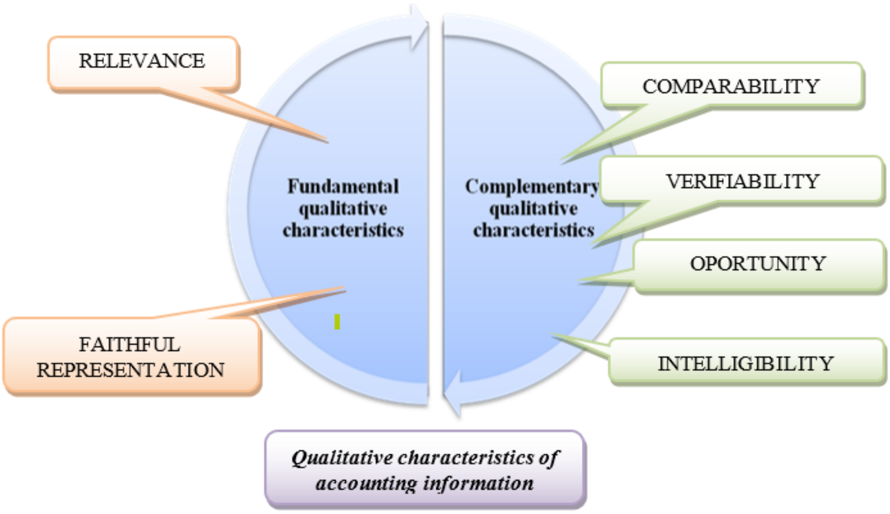

Figure 1. **Qualitative characteristics of accounting information** (OMFP 1802/2014)

4.2. Relevance of accounting information - the perspective of Conceptual Accounting Frameworks

As the topic of this topic refers to the relevance of value, the area of interest consists in the development of one of the most important qualitative characteristics of accounting information, namely relevance. This statement is also specified by the "Exposure Draft Conceptual Framework for Financial Reporting", a document published by the IASB in May 2015 in which the relevance of value is considered an essential attribute of the quality of accounting information.

According to the two regulators, the IASB and the FASB, the relevance of accounting information refers to its ability to influence users' final decisions. The condition for accounting information to be relevant is that it has a predictive value, a confirmatory value or both. Predictability is that financial information can be used to make forecasts on behalf of the coming years (FASB, 2006; IASB, 2015). The confirmation value appears when the financial-accounting information can be used as feedback for the evaluations performed in the previous years, confirming or modifying these evaluations (FASB, 2006; IASB, 2015).

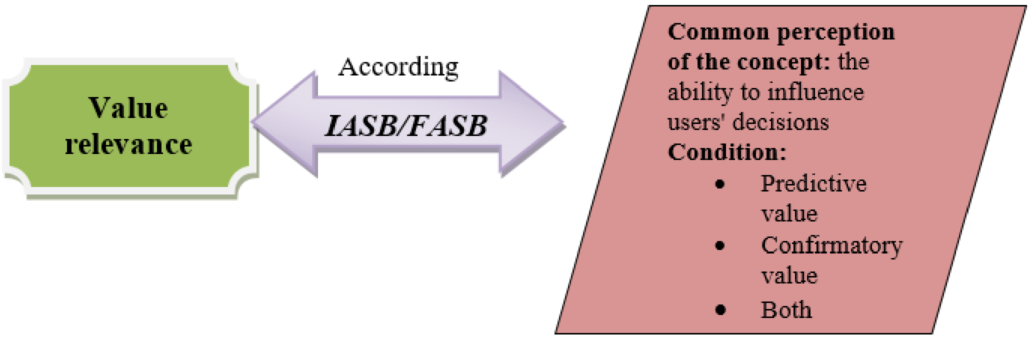

Figure 2. **The vision of IASB & FASB on the concept of relevance of accounting information**

Source: Own processing according to IASB & FASB regulations

4.3. Relevance of accounting information - the perspective of users of accounting information

In addition to the perception of professional accounting regulators on this qualitative attribute of accounting information, the concept of value relevance can be approached from the perspective of users of information embedded in the financial statements. The IASB Conceptual Framework states that the purpose of financial reporting is to provide information about the entity to current and potential investors, financial creditors and other categories of creditors, necessary for decisions related to the provision of resources to the entity. Therefore, although all users need relevant information, special importance is given to the group of investors. They are interested in the economic and financial situation of the companies, as their decisions are based on the information included in the financial statements prepared by the companies. In the case of investors, there are some experimental studies on the relevance of accounting information from a perceptual point of view. One of these studies is Kadous, Koonce and Thayer (2012), which addresses the issues of relevance and reliability in the context of measuring the fair value of an asset. In addition to investors and other users of annual accounts, the study is also important for those who develop standards or for business management.

Another study found in the literature that focuses mainly on investor perception (Huian, 2015) brings to the fore two important hypotheses to test: whether the accounting information on financial instruments provided by the individual and consolidated financial statements is relevant to investors in the case of non-financial companies and which of the two sets of financial statements has a greater value for investors (on information on financial instruments). To conduct this research, non-financial groups were selected, listed on the Bucharest Stock Exchange in 2012, and data from the individual and consolidated financial statements were collected for the period 2011-2013. These were tested using the Ohlson model, and the results show that at the level of the parent company, investor interest is higher for financial assets relative to financial liabilities and thus, information related to financial assets is much more relevant than that associated with financial liabilities. At the same time, in terms of the relevance of information on financial instruments, the results indicate that the individual financial statements are superior to the consolidated ones.

In the literature, to identify users' perceptions of the relevance of accounting information, there are numerous survey studies (opinion polls). One such study is Mirshekary and Saudagaran (2005) which presents the results obtained (users' perceptions of financial reporting in a developing country: Iran) following the application of a multiple categories of respondents: 55 bank loan officers, 35 academics, 40 brokers, 40 bank investment officers, 55 institutional representatives of investors, 95 auditors and 180 tax officers. The results highlighted the frequency of use of financial reporting, which are the most important sections of the annual reports for user groups (profit and loss account, auditors' report and balance sheet), but also what problems may arise in using annual reports (delay or lack of information appropriate, among others).

The usefulness of the various information contained in the annual reports were studied on different user groups in Kuwait: individual investors, institutional investors, bank loan officers, government officials, financial and university analysts, auditors and stockbrokers. (Naser *et al.*, 2003) The results of the survey-based research indicated that participants use information provided directly by companies and do not consult various sources of information for decision-making. At the same time, the most important characteristics of corporate information are credibility and timeliness, two characteristics that strengthen the relevance of accounting information. The study also showed that financial statements are the most important part of the annual report used by various Kuwaiti user groups.

The relevance of the information included in the annual reports also emerges from research conducted on a sample of five groups of accounting information users in Saudi Arabia: individual investors, institutional investors, creditors, government officials and financial analysts (Al-Razeen and Karbhari, 2004). According to the authors, in Saudi Arabia, there are eight different sources of corporate information: annual reports, interim reports, expert advice, advice from friends, newspapers and magazines, specialized publications, direct information from companies and market rumors. Following the study, it was concluded that the annual report is the main source of information for all categories of users, which again shows the relevance of accounting information for decision-making. At the same time, the interim reports proved to be more significant for individual and institutional investors than for creditors and government officials.

The opinion polls were also conducted for risk analysts in credit institutions (Lopez Hernandez, 2004) to determine what are the most relevant Spanish local public financial information for credit institutions in decision-making. To achieve this goal, a questionnaire was designed for risk analysts in credit institutions. The answers provided by the study participants showed, among other things, that: the financial performance statement and the balance sheet are the least relevant in the debt decisions of credit institutions, in the case of this operation, the most relevant being the budget settlement, followed by cash surplus statement and debt statement.

The importance and necessity of accounting information, their qualitative characteristics and the way in which, in Romania, the national legislation integrated the application of IFRS is the subject of a questionnaire-based research conducted between April and May 2019 on a sample of 60 economists: accounting experts, evaluating experts, staff from the economic-financial department, persons who have solid accounting knowledge and who can formulate a relevant and useful opinion for the study (Vultur and Mateș, 2019). The research results highlight the fact that professional accountants consider relevance, intelligibility and accurate representation as essential characteristics of financial-accounting information. The calculation of financial position, performance and risk contributes to establishing the ability of an economic company to generate profit, to pay its debts in the short or long term or to determine the risk of bankruptcy.

Carrying out a comparative analysis of the studies mentioned in this subchapter, it is found that relevance is an important feature of accounting information, according to which decisions are made by all categories of users. The most common user groups in the above research are investors and financial analysts. It is also noted that, although the objectives of the research are worded differently, they focus mainly on the importance of accounting information and its fundamental characteristics. Table 1 contains a summary of the articles collected from the literature, which highlight the objectives pursued by the authors of these studies and research results.

5. Conclusions

Accounting information plays a key role in the decision-making process. Thus, it is necessary that the accounting information guarantees a realistic and at the same time transparent knowledge of the economic companies, so that the end users opt for the best decisions. Given the major role of accounting information in decision-making, it is necessary for it to meet certain quality assurance characteristics. Both the national regulations represented by the O.M.F.P. 1802/2014, as well as the international bodies IASB and FASB present the same qualitative characteristics of the financial-accounting information, divided into two major groups: fundamental and complementary (Figure 1). Of all the qualitative characteristics attributed to accounting information, a special place is occupied by its relevance, a concept intensely addressed in the literature. Many authors, both Romanian and foreign, have researched how accounting information, more precisely, its relevance, is perceived by different categories of users. The analysis is performed either at a general level or for a specific country (Saudi Arabia, China, Kuwait, Romania). Although different samples of participants were selected, all studies demonstrated that relevance is an essential feature that contributes to the composition and rationale of final decisions (Table 1).

This article consists of a review of the literature to capture the concept of relevance of accounting information, from a dual perspective: both the two international regulators - IASB and FASB (Figure 2), and the various beneficiaries of information accountant. The literature includes numerous analyzes and research, of which, starting from a series of keywords, we selected a small part of the wide range of studies found in various international databases, which we considered relevant for the purpose of this article.

Our research in this direction will continue, as we intend to develop this topic. A first step would be to conduct a research aimed at professionals in the field in Romania, based either on a questionnaire or with the help of structured interviews. Another perspective of future research is to develop the number of studies analyzed to strengthen the statement that relevance is a pillar of the decision-making process.

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Table 1. **Relevance of value in the perception of users of accounting information in the literature**

Research authors	**Study**	**Research objectives**	**Research results**
Kathryn Kadous Lisa Koonce Jane M. Thayer	*Do Users of Financial Statements Judge Relevance Based on Properties of Reliability? (2012)*	Relevance and reliability in measuring the fair value of an asset	In addition to investors and other users of annual accounts, the study is also important for those who develop standards or for business management.
Maria Carmen Huian	*The usefulness of accounting information on financial instruments to investors assessing non-financial*	Is the accounting information relevant to investors in the case of non-financial corporations? Which of the two	Investor interest is higher for financial assets in relation to financial liabilities and thus, information related to financial assets is much more relevant than that associated with financial liabilities. The individual financial statements

Research authors	Study	Research objectives	Research results
	companies. An empirical analysis on the Bucharest Stock Exchange (2015)	sets of financial statements has more value for investors?	are higher than the consolidated ones.
Soheila Mirshekary Shahrokh M. Saudagaran	*Perceptions and characteristics of financial statement users in developing countries: Evidence from Iran (2005)*	Users' perception of the relevance of accounting information	Frequency of use of financial reports, which are the most important sections of the annual reports for user groups (profit and loss account, auditors' report and balance sheet), but also what problems may arise in the use of annual reports.
Kamal Naser Rana Nuseibeh Ahmad Al-Hussaini	*User's perception of various aspects of Kuwaiti corporate reporting (2003)*	The usefulness of the various information contained in the annual report	Information provided directly by companies is used and not various sources of information for decision-making. The most important characteristics of corporate information are credibility and timeliness. The financial statements are the most important parts of the annual report for users.
Al-Razeen Abdulrahman Karbhari Yusuf	*Users' perceptions of corporate information in Saudi Arabia: An empirical analysis (2004)*	Relevance of information included in annual reports	The annual report is the main source of information for all categories of users => the relevance of accounting information for decision making
Antonio M. Lopez Hernandez	*The relevance of Spanish local financial reporting to credit institution decisions (2004)*	What is the most relevant Spanish local public financial information for credit institutions in making decisions?	In lending decisions of credit institutions, the most relevant are the budget settlement, followed by cash surplus statement and debt statement.
Petronela Vultur Dorel Mateș	*Relevance of accounting information in the basis of user decisions - socio-empirical research (2019)*	The importance of accounting information, its qualitative characteristics	Relevance, intelligibility and accurate representation => essential characteristics of financial-accounting information

(*Source:* Own processing according to the information taken from the specialty literature)

SECTION 4

Investigating the Effect of Reported Greenhouse Gas Emissions on Corporate Financial Performance in Central-Eastern European Countries

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Elena Nechita
Elena-Mirela Nichita
Alina Mihaela Irimescu
Diana Manea

Investigating the Effect of Reported Greenhouse Gas Emissions on Corporate Financial Performance in Central-Eastern European Countries

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Abstract:

Research Question: *This paper aims to assess the impact of reported greenhouse gas emissions on corporate financial performance of companies operating in the chemical industry from Central-Eastern Europe.*
Motivation: *In recent years, climate change and global warming have become highly topical due to their increasingly visible destructive effects worldwide on the environment, society, and economic activity.*
Idea: *Developed on assumptions advanced by Bebbington and Tan (1997) and Broadstock* et al. *(2018), our research investigates the effect of reported greenhouse gas on return on sales, as a measure of business performance.*
Data: *The paper is based on panel data extracted from non-financial and/or annual reports for the top 10 largest companies from the chemical industry operating in 5 Central-Eastern European countries covering the time frame 2015-2019. The final sample consists of 34 firms and 134 firm-year observations.*
Tools: *A multiple linear regression model was designed and applied, having return on sales as the dependent variable and GHG emissions as the independent variable.*
Findings: *The findings of our study confirm that a lower level of GHG emissions will generate an increase in return on sales; consequently, the environmental performance reported in terms of controlling for GHG emissions enhances the financial performance measured as return on sales ratio.*
Contribution: *The paper contributes to the literature on climate change, revealing a negative, but significant effect of GHG emissions on financial performance and endorsing that companies, which today pay less attention to this global concern, tomorrow will face difficulties in terms of sales.*

Keywords: *GHG emissions, return on sales, climate change, environmental performance, financial performance.*

1. Introduction

As sustainability is a concern of the global marketplace, questions emerge about how environmental and social sustainability might amend the role of reporting, both from financial and non-financial perspectives.

Climate change disclosure represents part of the infrastructure for providing decision-makers with information that will enable them to integrate climate considerations into

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their analysis to help better align business practices with climate change mitigation, resilience plans and sustainable development goals (SDGs). Thus, corporations find themselves under growing pressure from multiple stakeholders to increase the quality, quantity, and availability of climate change related information (OECD, 2015).

In recent years, climate change and global warming have become highly topical due to their increasingly visible destructive effects worldwide on the environment, society, and economic activity. Global warming is believed to be caused largely by an intensification over time in emissions into the atmosphere (*carbon, sulphur, greenhouse gas, etc.*) arising from the use of fossil fuels (coal, oil, natural gas). Correspondingly, climate change encompasses the move to conserve natural resources by making a more efficient use of water and~~,~~ by reducing deforestation as well as reducing the emissions of gases.

The collaboration between the Partnership for Market Readiness (PMR) and the World Resources Institute (WRI) led to developing the Guide for Designing Mandatory Greenhouse Gas Reporting Programs, which offers directions for policymakers and practitioners in constructing mandatory GHG reporting programs, and currently, at least 40 countries and several sub-national regions have implemented greenhouse gas reporting programs (WRI, 2015), as shown in *Figure 1*.

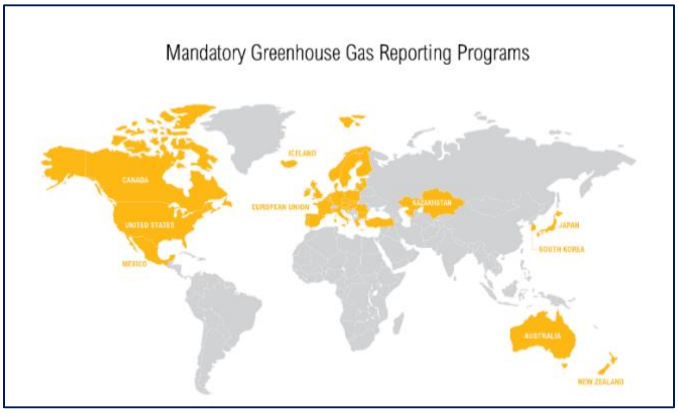

Figure 1. **Countries implementing greenhouse gas reporting programs**
(*Source*: World Resource Institute, https://www.wri.org/blog/2015/05/global-look-mandatory-greenhouse-gas-reporting-programs)

All sectors of the economy face major disruptions from climate transition and climate impacts, yet the majority of companies in key industries are still not engaging significantly in dealing with these risks or positioning themselves to take advantage of potential opportunities, as assessing climate-related risks and opportunities can be complex and may require detailed analysis (EY, 2019).

At the international level, United Nations issued 17 Sustainable Development Goals (SDG) addressing worldwide essential concerns clustered into three categories: social, environmental, and economic. Climate change, as an environment-related aspect, is “a change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is, in addition to the natural climate variability, observed over comparable time periods” (UN, 1992). Furthermore, in SDG 13 *Climate action*, UN articulates that climate change affects globally the natural and human systems through the increase of average surface temperature, extreme weather events, changing precipitation patterns, rising sea levels and ocean acidification (SDG 13). These risks will ultimately distress people's livelihoods, particularly marginalized groups such as women, children, and the elderly, as resources, food, and water become scarcer.

The researchers' interest in climate change was manifested by studying urban climate governance (Heijden, 2019), identifying new and more effective solutions to climate challenges (Trutnevyte *et al*., 2019), analysing interactions between SDGs and showing that Integrated Assessment Models cover the SDGs related to climate due to their design (Soest *et al*., 2019) or examining the effects of environmental performance on financial performance (Dowell *et al*., 2000; Fujii *et al.,* 2013; Wang *et al*., 2015).

This study focuses on one particular element of corporate social responsibility (CSR) which is becoming increasingly important - climate change - and contributes to the literature on this issue by investigating the effects of reported GHG emissions on corporate financial performance (CFP) of companies operating in the chemical industry in Central and Eastern European (CEE) countries. The main conclusion of our study is that the reported GHG emissions have a negative influence on financial performance.

To accomplish our objective, the paper is organised as follows. The literature review section underlines the relationship between SDG 13 *Climate action* reporting and financial performance under voluntary and mandatory disclosure policies, and the way in which accounting can contribute to improve these disclosures. The methodology details the approaches and procedures used in selecting the data. The results and discussion section provides our insights in respect to SDG 13 disclosures and performance measured as return on sales (ROS). The paper ends with a discussion section, conclusions, and future research agenda on the subject.

2. Literature review

Starting with Carson's writing (1962), a transformation in the relationship between humans and the natural world encouraged an awakening of the public regarding environmental consciousness. Since then, scholars acknowledged three periods of dramatic changes in the salience and values related to corporate environmental practice, described as "waves" of environmental management (Elkington 2005; Hoffman 2001; Hoffman and Bansal, 2011), namely (i) the late 1960s and early 1970s: corporate environmentalism with the recognition that corporate environmental issues were a problem necessitating regulatory controls; (ii) the late 1980s and early 1990s: environmental practices as strategic objective; (iii) the latter part of the first decade of the twenty-first century: merger of environmental and social issues with the global economy. This shift is driven by a series of events and issues that have forced an expansion of the scope of corporate environmentalism to include considerations for a restructuring of global economies.

Along with information technology, economic competitiveness, resource and pollution prices, climate change, primarily through releases of greenhouse gas, dominates the environmental issue (Hoffman and Bansal, 2011).

Businesses in all sectors and of every size face essential questions about adapting to climate change and its associated risks and regulations. The embrace of efforts for mitigating climate change as a strategic imperative will become critical to their overall long-term sustainability (CIMA, 2010). There is growing recognition among corporates that climate change may cause a substantial transformation of businesses as well as bringing new opportunities. Nevertheless, an extensive knowledge gap exists in terms of the requirements to create a net zero-carbon business (KPMG, 2015).

A set of useful recommendations on financial transparency related to climate risks and opportunities was published in July 2017 by the Task Force on Climate-related Financial Disclosures (TCFD) working group, including analysts, account preparers, and international experts from different sectors. These recommendations specify the elements of environmental reporting expected in the annual reports of all types of companies regarding governance, strategy, risk management, and environmental metrics. The TCFD grid seems to have become a global reference for financial transparency related to climate risk (TCFD, 2017).

Academic literature highlights two types of empirical works on environmental disclosure: i) studies which examine the disclosure of information practices using descriptive statistics based on content analysis of annual / sustainable development reports (Baier *et al*., 2020; Nechita *et al*., 2020a; Nichita *et al*., 2020; Subramaniam *et al.*, 2019). The analysis may include the quantity of disclosed information (presence of indicators) and/or the quality regarding the information's relevance (detailed and/or quantitative); ii) studies which scrutinize the determinants of environmental disclosure based on econometric models aiming to explain performance proxies according to the company's characteristics (sector, size, debt, media pressure, reputation etc.) (Cho *et al.*, 2013; Hart and Ahuja, 1996; Mahoney *et al*., 2008; Manki *et al*., 2009; Nechita *et al*. 2020b; Weber, 2017).

A systematic examination on how climate change reporting impacts the financial performance of corporations leads to inconsistent results: positive (value creation), negative (value destruction), and inconclusive. This was expected since more than 100 studies that have empirically examined the more general relationship between corporate social responsibility and corporate financial reporting have resulted in inconsistent findings for this linkage (Wang *et al*., 2015). The value creation approach regards environmental efforts as a way to increase competitive advantage and improve financial returns to investors. The relationship between environmental performance, including climate change reporting, and market value (Tobin's q) or return on assets ratio (ROA) or return on sales (ROS) is expected to be positive according to this view (Albertini, 2013; Dowell *et al*., 2000; Clarkson *et al*., 2011; Cotter and Najah, 2011; Iwata and Okada, 2011; Fujii *et al*., 2013; Gnanaweera and Kunori, 2016; Konar and Cohen 2000; Lopez-Gamero *et al*., 2009; Manrique and Marti-Ballester, 2017). The value destruction view argues that environmental investments and high environmental performance represent only increased costs, triggering decreased earnings and lower market values. Consequently, the relationship between environmental performance and financial indicators, expressed as ROA or market value is confirmed to be negative in several studies (Garcia-Sanchez and Prado-Lorenzo, 2012; Sarkis and Cordeiro, 2001; Trumpp and Guenther, 2017; Walley and Whitehead, 1994; Wang *et al*., 2014). Furthermore, Delmas *et al*. (2015) investigated the effect of greenhouse gas emissions on short and long-term measures of financial performance, finding that improving corporate environmental performance causes a decline in the indicator of short-term financial performance during the analysed period, return on assets, but investors see the potential long-term value of improved environmental performance, manifested by an increase in Tobin's q. Research papers published by McWilliams and Siegel (2000), Moore (2001), and Budiharjo (2019) did not endorse neither a positive nor a negative relationship between environmental reporting and financial performance.

Bebbington (1999) has underlined the difficulty of connecting environmental reporting to financial outcomes and rethinking the role of accounting profession in a sustainable setting is investigated by Bebbington and Tan (1997), as well as by Ngwakwe (2012) and Van (2012). There is still great reticence among investors with respect to behaviours that attend to the natural environment, but also acknowledged growing interest. Investors are looking both for corporations to report their environmental impacts and for new instruments, such as weather derivatives to hedge their risk or provisions (Hoffman and Bansal, 2011). The "intradynamic and interdynamic processes" of organizational learning, that incorporate an awareness of how various groups both inside and outside the firm conjointly shape its behaviour and strategy (Fischer and Schott, 1993), create difficulties in integrating environmental thinking in operating activities and long-term strategies.

Although it is difficult to estimate how much companies *should* be disclosing, it is clear that many companies are failing to make public climate change risks; Doran and Quinn's (2009) paper concluded that in 2013 more than 40% of S&P 500 member companies failed to make any mention of climate change in their annual reports. On the other hand, some researchers acknowledged that large firms disclose the most environmental information (Albertini, 2014; Chauvey *et al*., 2015), presumably due to greater visibility, greater social and political pressures, and may use these disclosures as a tool to reduce those exposures (Patten, 2002).

Gamble *et al*. (1995), Gray *et al*. (2001) and Shih *et al.* (2006) pointed out that sectors with long-term cumulative pollution problems, including high-pollution sectors such as the oil sector, chemical sector, and steel sector, are more likely to take the initiative to disclose environmental information.

Hypothesis development

Scholars have empirically investigated the relationship between environmental and financial performance for several decades with varying results from positive to negative, from significant to insignificant, or even inconclusive. They all tried to find explanations to argue for their results referring to the horizon of time the financial performance was measured for (short-term or long-term performance) or bringing into discussion the economies from which the companies were selected (advanced or developing economies), but also the industry type (clean or dirty industries). Enrolling in the CSR-CFP relationship research, our study analyses the impact of climate change on the financial performance of companies. For assessing the impact on climate, the greenhouse gases data was collected and analysed, as the GHGs from human activities are the most significant driver of observed climate change since the mid-20th century (IPCC, 2013). As measures of financial performance, the above academic literature indicates return rates such as return on assets (ROA), return on sales (ROS), and return on equity (ROE) as indicators of short-term financial performance and Tobin's q as an indicator of the potential long-term value of the performance. For the research hypothesis, we used the return on sales (ROS) as a measure of financial performance to examine the relationship between GHG emissions and financial performance, as argued in the dependent variable section.

H: *A lower level of GHG emissions will generate an increase in return on sales.*

To test this hypothesis, a methodology based on multiple linear regression model is applied and disclosed in the further section.

3. Research methodology

Emissions of several important greenhouse gases that result from human activity have increased substantially since large-scale industrialization began, and the industry remains one of the main contributors to air pollution. Over time, climate change becomes perhaps the most serious of environmental concerns (Pinkse and Kolk, 2009), dealing with the release of pollutants in the air. Although all organizations in the global economy are contributing to the negative effects on climate, there are industries that are more polluting than others. According to the European Environment Agency (EEA, 2021), the chemical industry is one of the top 10 main polluting industries, in terms of air and water pollution, as well as waste generation.

Considering this significant impact on climate change, our analysis is focused on the chemical sector companies, thus removing the disadvantage of measuring the environmental performance based on pollution emissions of firms in relatively low polluting industries, as argued by Stanwick and Stanwick (1998). The criterion used for selecting the first five Central and Eastern European (CEE) countries included in the analysis was based on the gross value added (GVA), resulting in the selection of the following countries: Poland (PL), Czech Republic (CZ), Romania (RO), Hungary (HU) and Slovakia (SK).

3.1. Sample description

The sample of companies used in our research study was drawn from the ISI Emerging Markets Group's EMIS platform database (ISI, 2020), based on firms' operating revenue. The first 20 chemical companies were selected for each of the 5 CEE countries included in the analysis for the period 2015-2019. This time frame is appropriate for our analysis because it tracks the efforts the companies have made immediately after the introduction of the 17 UN Sustainable Development Goals. The initial sample included 100 companies and it was refined based on the availability of individual or group companies' reports in English on their websites (considering all types of reports, from sustainability and CSR reports to annual financial reports), in order to avoid any biases associated with translation and to collect all necessary financial information for the multiple linear regression analysis.

Thus, the sample was reduced to 38 companies with 161 firm-year observations. Furthermore, due to the lack of information regarding the GHG emissions measurements, the sample was once again diminished to 34 companies, corresponding to 135 firm-year observations. As part of the regression analysis, one outlier that resulted has been truncated, leading to a final sample that consists of 34 companies with a number of 134 firm-year observations.

3.2. Research design

Dependent variable

According to previous studies (De Burgos-Jiménez *et al.*, 2013; Earnhart and Lizal, 2007; Elsayed and Paton, 2004), the dependent variable used is return on sales (ROS), a short-term measure of financial performance. Return on sales is computed by dividing the net income to the value of sales (Elsayed and Paton, 2004), representing a good measure of financial performance since it indicates how effectively companies are able to convert sales into profits (Rassier, 2005). Additionally, using this ratio, we mitigate any concern over the measurement of inflation (Earnhart and Lizal, 2007).

Independent variable

The independent variable is represented by *GHG emissions*, as a measure of climate change similar to prior studies (Earnhart and Lizal, 2007; Elsayed and Paton, 2004; Fujii *et al*., 2013; García-Sánchez and Prado-Lorenzo 2012; Wang *et al*., 2014). These emissions consist of seven gases with a direct effect on climate change. Among these various greenhouse gases produced by human activities, CO_2 is the largest contributor to climate change.

The values for *GHG emissions* reported by companies are gathered and converted into 1,000 t CO_2 equivalent (CO_2e), which is a metric measure that is used to compare emissions from various greenhouse gases on the basis of their global warming potential (GWP). The greenhouse gas emissions measured for Scope 1 – Direct emissions generated within own facilities, Scope 2 – Indirect emissions from purchased energy, and Scope 3 – Indirect emissions in the value chain were considered in the analysis. Consistent with Delmas *et al*. 2015, natural log conversions are applied to adjust for the skewed distribution of *GHG emissions*.

Control variables

To enhance the internal validity of the model, control variables that may influence firms' financial performance are used, such as firm's size, growth, change in liabilities, and cash flows. All these variables are detailed in Table 1.

Table 1. **Control variables definition and measurement**

Variable	Measurement and relevant studies
SIZE	Natural logarithm of total assets (Goll and Rasheed, 2004; Grimaldi *et al.*, 2020; Hussain *et al.*, 2018; Kuzey and Uyar, 2017; Mishra and Suar, 2010; Webe, 2017)
GROWTH	Annual change in sales divided by total sales (King and Lenox, 2002)
DISSUE	Annual change in total liabilities (Barth *et al.*, 2008)
CF	Total cash divided by total assets (Barth *et al.*, 2008)
COUNTRY	Binary dummy variable for each country (RO omitted, set as reference); the variable equals 1 if country is k (where k = 1–4, for each of the countries CZ, HU, PL and SK), and 0 otherwise
YEAR	Binary dummy variable for each year (2015 omitted, set as reference); the variable equals 1 if the year is k (where k =1–4, for each of the years 2016, 2017, 2018 and 2019), and 0 otherwise

Furthermore, to reduce concerns on any association between the dependent and independent variables, dummy variables for countries (COUNTRY) and years (YEAR) are used in the regression model (Bartlett, 2012; Mion and Loza Adaui, 2019; Mummolo and Peterson, 2018).

3.3. Data analysis

The applied multiple linear regression model is based on the previously defined variables, as shown below:

$$ROS = \alpha_0 + \alpha_1 GHG\ emissions_{it} + \alpha_2 SIZE_{it} + \alpha_3 GROWTH_{it} + \alpha_4 DISSUE_{it} + \alpha_5 CF_{it} + \alpha_6 COUNTRY_{kit} + \alpha_7 YEAR_{kit} + \varepsilon_{it}$$

To ensure the statistical validity of the regression model, several procedures were applied. The linear relationships between variables were checked by plotting a scatterplot of the studentized residuals against the (unstandardized) predicted values and partial regression plots between each independent variable and the dependent variable. The absence of multicollinearity was verified by examining both the Pearson correlation coefficients and tolerance / variance inflation factor (VIF) values (Hair *et al.*, 2014). The resulted outlier based on casewise diagnostics was truncated, with no impact on the number of companies, but only on firm-year observations. There were no studentized deleted residuals greater than ±3 standard deviations, no leverage values greater than 0.2 (Huber, 1981), and no values for Cook's distance above 1 (Cook, 1982).

Having all statistical criteria met, running the multiple linear regression was appropriate and the results are detailed in the further section. IBM SPSS Statistics 27 was used as software resource.

3.4. Empirical results

Descriptive statistics

The descriptive statistics (mean, median, standard deviation, minimum, and maximum) values for the independent, dependent, and control variables that were included in the regression model, for all 135 observations (before truncating the outlier) are detailed in Table 2.

Table 2. **Descriptive statistics**

Variable	Mean	Median	Std. Deviation	Minimum	Maximum
ROS	0.0927	0.0812	0.1275	-0.7348	0.5692
GHG emissions	7.3869	7.6309	2.6794	0.0200	11.9300
SIZE	23.1533	23.8289	2.1440	17.7855	25.6678
GROWTH	0.0512	0.0363	0.1849	-0.2559	1.5020
DISSUE	0.0920	0.0343	0.2584	-0.3200	1.4673
CF	0.0208	0.0127	0.0633	-0.1982	0.3935

Note: N = 135 observations

Although the dependent variable (ROS) is taking values from a positive maximum of 0.5692 to a negative minimum of - 0.7348, the majority of the companies have positive return on sales rates as the median emphasises. In the case of GHG emissions, there is a significant difference between the maximum value of 11.9300 representing emissions around 151 million t CO_2e and the minimum value that is close to zero. Furthermore, we note that the mean of GHG emissions is also remarkably high, showing a great level of air pollution with negative impact on climate. Regarding the SIZE used as a control variable, the mean of 23.1533 is very close to the median, indicating that the values are symmetrically distributed.

Subsequent, the association between variables along with the multicollinearity assumption were tested by applying the Pearson correlation analysis. As presented in Table 3, our findings indicate some statistically significant correlations at the 0.01 level. A single coefficient indicates a strong correlation of 0.648 significant at the 1% level between our independent variable (GHG emissions) and the firm's size (SIZE), which confirms that larger firms generate more GHG emissions. However, the coefficient is still below the upper limit of Pearson's accepted level of 0.7, that might signal multicollinearity issues. The other values presented in the Pearson matrix show low positive or negative correlations. Low positive associations are mostly found between the dependent variable (ROS) and all other variables, and low negative correlations may be observed among the control variables.

Table 3. **Pearson correlation matrix**

Variables	ROS	GHG emissions	SIZE	GROWTH	DISSUE
ROS	-				
GHG emissions	0.006	-			
SIZE	0.289*	0.648*	-		
GROWTH	0.101	-0.012	-0.059	-	
DISSUE	0.257*	-0.081	-0.016	-0.007	-
CF	0.255*	0.002	-0.004	0.009	-0.036

Note: * Correlation is significant at the 0.01 level (2-tailed).

As the correlation coefficients are indicating low associations and all tolerance and VIF values are within the accepted thresholds (with detailed information provided in the regression results section), the regression was compiled without facing any multicollinearity biases.

Regression results

Our results show that the regression model is statistically significant at the level of 1%. The independent variable (GHG emissions) has a considerable contribution to the financial performance measured as ROS, with an R^2 of 36.7%, as shown in Table 4 and detailed in Appendix A.

Table 4. **Regression analysis results**

Variables	Dependent variable ROS
Intercept	-0.426***
GHG emissions	-0.013***
SIZE	0.028***
GROWTH	0.077*
DISSUE	0.106***
CF	0.380***
CZ	-0.064**
HU	-0.041
PL	-0.019
SK	-0.023
2016	-0.022

Variables	Dependent variable ROS
2017	0.016
2018	-0.007
2019	-0.051*
Country FE	Yes
Year FE	Yes
R^2	0.367
Adjusted R^2	0.299
F-stat, df (13, 133)	5.356***
Number of firms	34
Number of observations	134

Note: Significance at the level of: *** p < 0.01; ** p < 0.05; * p < 0.10

GHG emissions have a negative and statistically significant impact on return on sales, contrary to Elsayed and Paton (2004), as well as Earnhart and Lizal (2007), who found no significant impact on this type of financial performance measure. However, our findings are similar to prior studies (De Burgos-Jiménez *et al.*, 2013 and Fujii *et al.*, 2013) on environmental performance, showing that companies' efforts on controlling GHG emissions enhance their financial performance.

In contrast to the GHG emissions impact, all control variables have a positive association with the dependent variable ROS, significant at the 1% level in the case of SIZE, DISSUE, and CF, respectively significant at the 10% level for GROWTH. This implies that the greater these control variables are, the higher is the firm's financial performance. Moreover, CF shows the highest coefficient, revealing a significant correlation between cash flows and revenue from sales.

Regarding the creation of dummy variables used in the model, RO was set as reference for the COUNTRY variable and 2015 was selected as basis for the YEAR variable, in order to facilitate the comparison with the SDGs' year of issuance. The results for COUNTRY show a negative, but significant influence on ROS only for CZ. This implies that increases in GHG emissions in Czech Republic will have a lower impact on return on sales compared to Romania. The findings for YEAR reveal a positive influence for 2017 and a negative influence for the other years, with significant statistical values at the 10% level for 2019, emphasising that an increase in GHG emissions in 2019 has a lower impact on ROS compared to 2015, in terms of the stakeholders' perception regarding the companies' disclosures of GHGs emissions in their annual or sustainability reports.

Furthermore, the results of statistical tests applied for ensuring the validity of the regression model are disclosed hereafter. The linear relationship between the dependent and independent variables, as well as the homoscedasticity of the residuals can be easily noticed in the plot of studentized residuals against the predicted values, as illustrated in Figure 2.

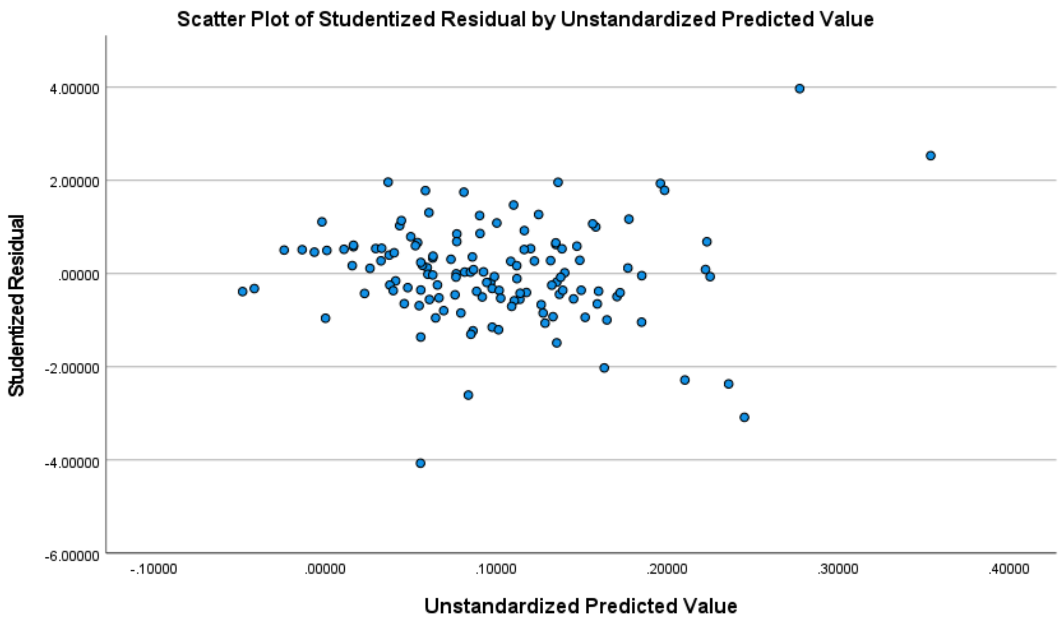

Figure 2. **Plot of studentized residuals against the predicted values**

Data used in the multiple linear regression model show no multicollinearity as presented in Table 5. The tolerance and variance inflation factor for all variables included in the regression model are within the normal intervals: for tolerance, all values are greater than 0.1 and for VIF, all values are smaller than 10.

Table 5. **Collinearity Statistics**

Variables	**Collinearity Statistics**	
	Tolerance	**VIF**
GHG emissions	0.509	1.963
SIZE	0.470	2.127
GROWTH	0.908	1.102
DISSUE	0.901	1.110
CF	0.853	1.173
CZ	0.486	2.057
HU	0.392	2.554
PL	0.585	1.711
SK	0.395	2.534
2016	0.557	1.794
2017	0.511	1.955
2018	0.492	2.032
2019	0.510	1.962

The normality of residuals is met. Both histogram and P-Plot show that the residuals are normally distributed as disclosed in Figure 3.

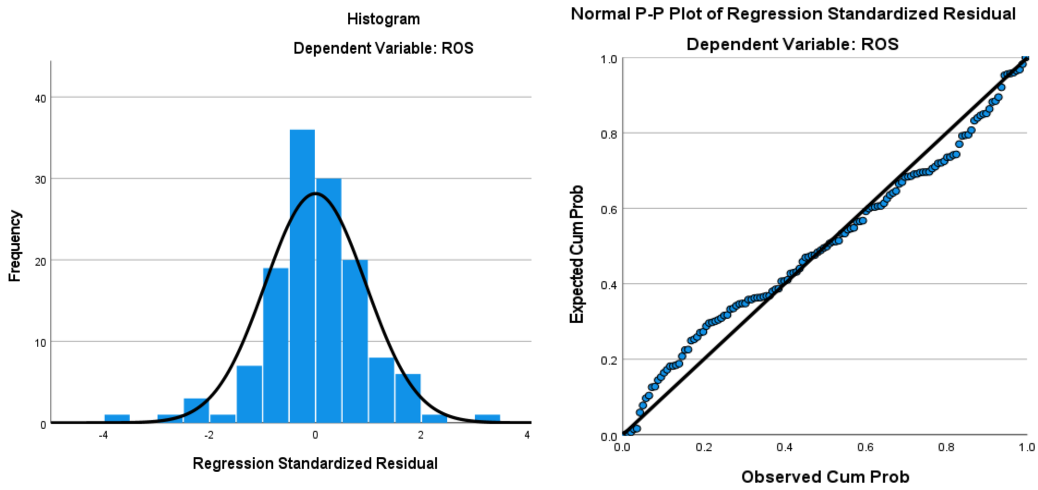

Figure 3. **Histogram and P-Plot**

All above-mentioned results regarding the check of assumptions confirmed the statistical validity of the regression model used in our study.

4. Conclusions

This study aimed to explore the extent to which the GHG emissions influence companies' financial performance measured as return on sales. Thus, a multiple linear regression model was designed with ROS as the dependent variable, GHG emissions as the independent variable, along with four control variables for firm size (SIZE), change in sales (GROWTH), change in liabilities (DISSUE), and cash flows (CF), as well as two dummy variables for country (COUNTRY) and year (YEAR). The model is statistically significant at the 1% level and validates our hypothesis. Our findings reveal that reported GHG emissions have a negative influence on financial performance, based on the negative coefficient obtained for the independent variable with statistical significance at the 1% level. Hence, from the perspective of environmental performance, measured in terms of controlling the GHG emissions, our results emphasise that it positively influences the corporates' financial performance, similar to prior studies conducted by De Burgos-Jiménez *et al.* (2013) and Fujii *et al*. (2013).

This study contributes to the literature on climate change in several ways. Firstly, the results reveal a negative but significant effect of GHG emissions on financial performance, compared to previous studies conducted by Earnhart and Lizal (2007), as well as Elsayed and Paton (2004), who obtained a highly insignificant or even no significant impact, respectively. Secondly, our evidence is in line with the majority of the results from prior empirical studies and meta-analyses that have pointed to a positive relationship between CSR and CFP (Wang *et al.*, 2015). Thirdly, our findings confirm the specific connection between pollution emissions and customers' behaviour. Customers may respond to positive social performance by increasing their demand for the firm's products or services (Bhattacharya and Sen, 2003). Over time, the higher level of GHG emissions will lead to the decrease of the customer's confidence in the company. With the growing awareness of people about the negative effect on the climate of these gas emissions, the companies that today pay less attention to this global concern, tomorrow will face difficulties in terms of sales.

This study is subject to several limitations that could be inspiring future research directions. The limits concern the reduced sample size and data collection. On the one hand, the sample was significantly reduced due to the lack of environmental and/or financial information disclosed in the sustainability or annual reports of companies and on the other hand, the process of gathering data from reports might by prone to subjectivity.

Future research might consider applying the present analysis from the perspective of long-term performance influence, such as Tobin's q, in order to observe the extent to which the market perceives long-term value in the reduction of GHG emissions. It would also be of interest to expand the sample and investigate the research question in comparison with developing economies as well.

By adopting a comprehensive approach, asking businesses to present not only financial performance information, but also non-financial key indicators, the disclosure system will provide an improved background for the decision-making process in the Anthropocene era.

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Appendix A

Coefficients statistics for the regression model – dependent variable ROS

Variables	B	Std. Error	Beta	t	Sig.
Constant	-0.426	0.104		-4.096	0
GHG emissions	-0.013	0.004	-0.343	-3.368	0.001
SIZE	0.028	0.005	0.568	5.364	0
GROWTH	0.077	0.044	0.135	1.766	0.080
DISSUE	0.106	0.031	0.258	3.366	0.001
CF	0.380	0.131	0.228	2.905	0.004
CZ	-0.064	0.028	-0.241	-2.316	0.022
HU	-0.041	0.027	-0.175	-1.510	0.134
PL	-0.019	0.029	-0.062	-0.657	0.512
SK	-0.023	0.029	-0.094	-0.816	0.416
Y2016	-0.022	0.027	-0.077	-0.794	0.429
Y2017	0.016	0.026	0.064	0.626	0.532
Y2018	-0.007	0.026	-0.03	-0.285	0.776
Y2019	-0.051	0.026	-0.202	-1.982	0.050

SECTION 5

The Contribution of Taxes and Fees to the Substantiation of the State Budget

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Abstract: *In this paper, we analyzed the contribution of taxes and fees to the State Budget, both in a national context, as well as comparing the situation of the tax system in Romania with that of France and Poland. Using data from State Budgets in recent years (2015-2020), we compared the evolution of the contribution of a set of taxes and fees, relating them to total revenues to the State Budget. We also compared taxes on labor, consumption, property and capital as a proportion of total tax revenues in Romania, France and Poland, highlighting the differences between the tax systems of the three states and their impact on the budget.*

Keywords: *Fees, taxes, State Budget, fiscal policy.*

1. Introduction

One of the most important roles of the State Budget is represented by its capacity to allocate resources and redirect them to the economy. This requires a coherent and predictable system in terms of State Budget revenues.

Taxes and fees are the main instruments of fiscal policy that is included in the budgetary policy.

2. Theoretical framework

One of the definitions that fiscal policy has received in the literature has been the following: "the set of technical methods, principles regarding operations, relations, institutions and specific regulations for establishing and collecting taxes, fees and contributions" (Inceu and Lazăr, 2003, p.143).

The State Budget can be analyzed from multiple perspectives. It represents, at the same time, the document in which the annual and multiannual revenues and expenditures of the State are provided, the law approved by the Parliament which provides for the mentioned elements, the system of financial flows of the State and, last but not least, the instrument of economic policy which the State has for managing taxation and expenditures in the public domain.

Substantiation of the fiscal policy and, in particular, substantiation of the State Budget must take into account that fiscal and budgetary policy are subsumed in the national economy and therefore budget decisions have a direct or indirect impact on the economy as a whole. On the one hand, taxes play a key role in ensuring that the obligations to

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which the State has committed itself are met, but on the other hand, determining their value and each person's contribution to the budget creates economic and social effects.

The substantiation of the State Budget by establishing a certain level of taxes and fees must take into account a very large number of elements, from the general state of the national economy and the development strategy of the country that the political factor has assumed, to the need to ensure a free movement of capital in the country, as well as of products and services and, moreover, the increased integration of the national economy in the regional and international one (Bălănescu *et al.*, 1993).

Also, the contribution of taxes and fees to the State Budget must take into account factors related to efficiency, effectiveness, turn-over, but also balance. Changes at the level of taxes and fees are needed to ensure their role as levers in the economy, but a too fast pace of change in this area leads to instability and negative impact on the economy. Due both to the major impact of the State Budget on the economic life and development of the State, and to the fact that the State Budget is a normative act, with the related requirements, all changes and proposals on taxes and fees need a solid foundation. This foundation needs to include strong arguments regarding changes, as well as the estimated economic and social impact.

Taxes are mandatory, non-refundable, do not involve a consideration from the State, and each tax has a number of elements: the generating fact, the payer, the subject, the object of taxation, the source, the tax rate, assessment, the collection of the tax and the term of payment. Taxes can be classified according to several criteria: for example, depending on the object of taxation, we distinguish between taxes on profit, on income, on buildings and land, and, depending on the taxpayer, we distinguish between tax for natural persons and tax on legal entities (Culcear, 2017).

Unlike taxes, fees refer to a service provided by the authorities or to a right. If the value of the tax depends on the tax base, the amount of the fee depends on different characteristics of the fee, such as the nature of the service provided. Another difference is the payment deadlines: they are fixed for taxes, but vary for fees, depending on the time of request or on the time when the service is provided. These differences between taxes and fees also lead to a different impact on the building of the State Budget. We mention the fact that the distinction between taxes and fees is not a generalized one, in many European countries and in the USA is used only the concept of fee, which includes the meaning that the tax concept has in the Romanian economy and legislation.

Taxes and fees are part of the category of compulsory levies (category of tax revenues), the treasury resources, resources from public loans and the money issue of the Central Bank having also a contribution to the State Budget in addition to them. Budget revenues can also be classified according to their pace. For example, the current income category includes tax revenues, but also insurance contributions and non-tax revenues.

The analysis of public revenues involves measuring them over a determined period, depending on a series of indicators, which we list in the following.

- The absolute change of public revenues in nominal or real expression;
- The relative change of public revenues in nominal or real expression;
- Change of the share of public revenues in gross domestic product (GDP);
- Change of average public revenues per capita;

- Change of the structure of public revenues;
- The relationship between changes in public revenues and GDP;
- Elasticity of public revenues in relation to GDP (Trandafir, 2013).

3. Methodology

In this paper, we set out to highlight the evolution that the contribution of taxes and fees to the substantiation of the State Budget in Romania has undergone in the last 5 years. Thus, we can compare individual evolutions and identify changes in the share of certain types of taxes and fees in the State Budget over time. For this, the eight types of taxes and fees selected were analyzed during 2015-2020, both as an absolute value, expressed in millions of lei, and as a relative value, referred as a percentage of the value of the State Budget for that year. The data required for this analysis were obtained from the State Budget laws, namely the annexes on budget revenues.

A second objective of the paper was the comparative approach of the contribution of taxes and fees, thus placing the fiscal situation of Romania in an international context. The countries selected for the analysis were Romania, Poland and France; therefore, the comparative tax analysis was carried out in a European context. The statistical data used were provided by the European Union through Eurostat.

4. Results

4.1. Contribution of taxes and fees to the State Budget of Romania (2015 – 2020)

The law on the State Budget for 2020 established revenues amounting to 167.702,4 million lei, these being detailed in Annex 1 attached to this law (Law 5/2020). From this amount, we highlight the contribution of several types of taxes to the State Budget.

Profit tax is estimated at 19.438,3 million lei (11.59% of the total budget revenues), income tax (including income tax on salaries, dividends, interest, pensions, bonuses and others) at 26.221,2 lei (15.64%), taxes and fees on property at 563.4 million lei (0.34%), taxes and fees on goods and services at 97.427,6 million lei (58.10%), other taxes and general fees on goods and services at 1.554,6 million lei (0.93%), fees on the use of goods, authorization for the use of goods or on carrying out activities at 4.572,8 million lei (2.73%), tax on foreign trade and on international transactions at 1.253,9 million lei (0.75%) and, last but not least, the category of other taxes and fiscal fees, with an estimated value of 129.5 million lei (0.08%) for 2020.

The most substantial fiscal contribution to the State Budget consists of taxes and fees on goods and services, which in turn is largely composed of the value added tax. An important contribution, but much smaller compared to the first, is represented by the income tax and the profit tax (Figure 1).

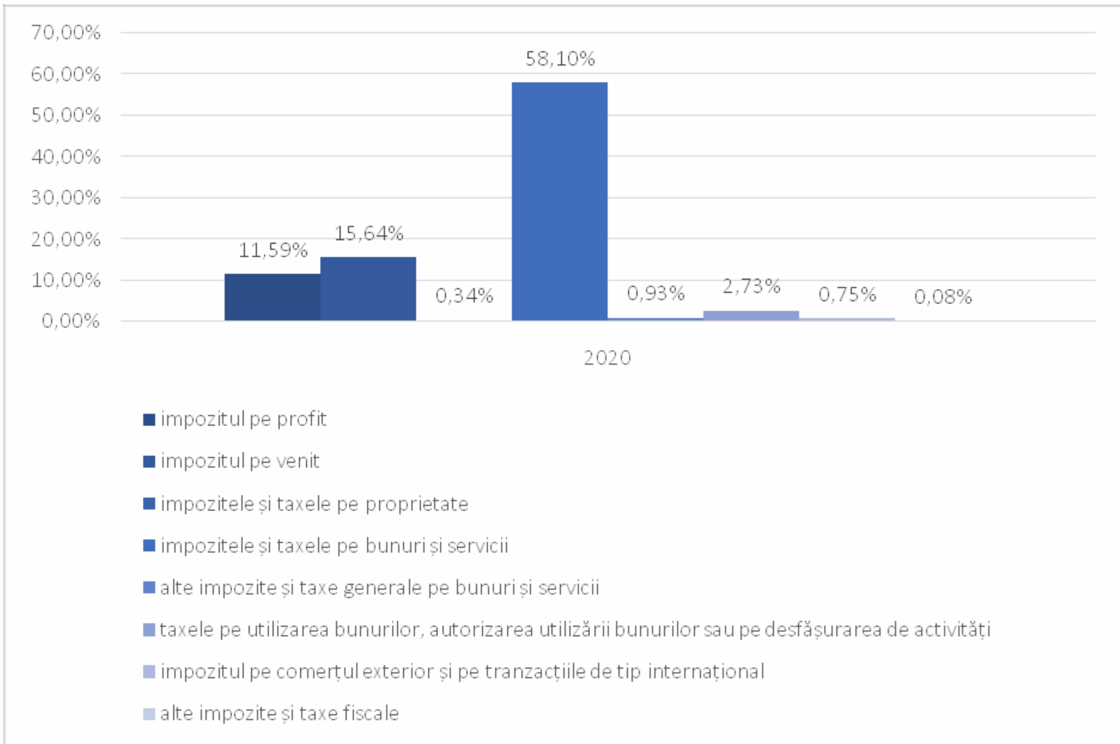

Figure 1. **Contribution of taxes and fees to the State Budget in 2020**
(*Source:* Law 5/2020)

The State Budget had the value of 164.494,1 million lei in 2019 (Law no. 50/2019), 142.291 million lei in 2018 (Law no. 2/2018), 108.645.3 million lei in 2017 (Law no. 6/2017), 101.757,2 mil. lei in 2016 (Law no. 339/2015) and 103.767.6 million lei in 2015 (Law no. 186/2014).

When we analyze the value of the profit tax, its general trend seems to be one of growth, except for 2017, but when the profit tax is expressed as a percentage of the annual value of revenues to the State Budget, the trends change. During 2015-2017, the profit tax contributed on average more to the State Budget (between 13.27% and 15.13%) than during 2018-2020 (between 10.43% and 11.59%).

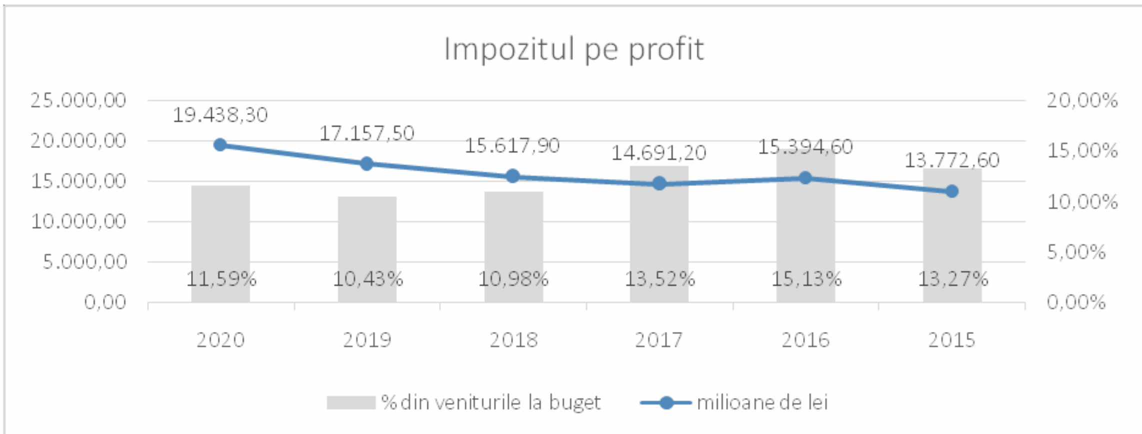

Figure 2. **Evolution of the profit tax contribution to the State Budget, 2015-2020**
(*Source:* Law 5/2020, Law no. 50/2019, Law no. 2/2018, Law no. 6/2017, Law no. 186/2014)

Income tax has a similar trend in terms of the share of the contribution to the State Budget, tax which contributed more substantially during 2015-2017 to the total budget revenues (between 25.38% and 15.64%), than during 2018-2020 (between 14.32% and 15.87%). The year when the income tax had the largest contribution to the State Budget was 2017, and the one with the lowest contribution was 2019 (Figure 3).

Income tax is a category of taxes that contains approximately 30 separate taxes. Of these, the largest contribution to the State Budget is the tax on the income from salaries - for example, in the State Budget Law for 2020, they represented 20.322 million lei, while the entire category of income tax represented 26.221 million lei. An important contribution to the State Budget is also the tax on the income from dividends, tax on the income from pensions and the income tax related to the Single Return Form, all exceeding the value of 1.500 million lei in the State Budget Law for 2020.

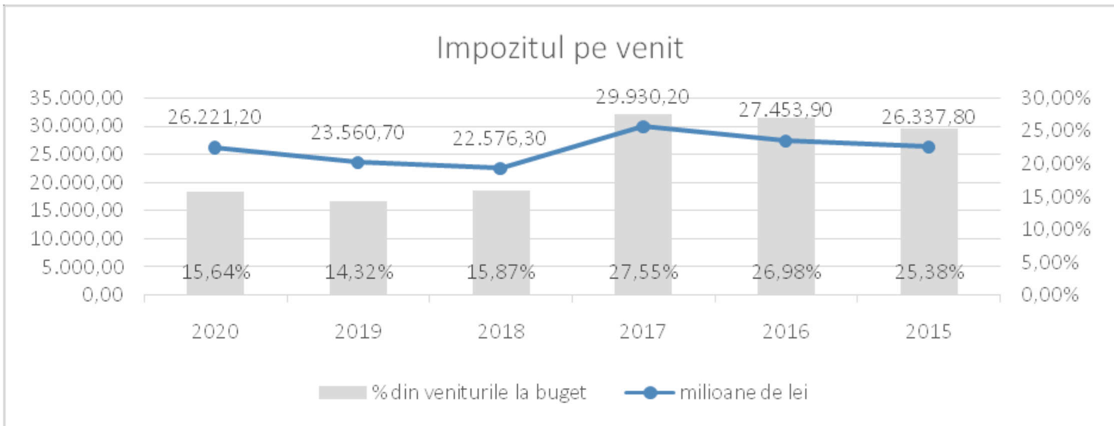

Figure 3. **Evolution of the income tax contribution to the State Budget, 2015-2020**
(*Source:* Law 5/2020, Law no. 50/2019, Law no. 2/2018, Law no. 6/2017, Law no. 186/2014)

Property taxes and fees do not have a significant contribution to the State Budget, and this fluctuates quite a lot - for example, in 2018 it was 2.76%, as only 2 years later to be 0.34% (Figure 4). In their case, an interruption in the data series was also observed, the Annex to the 2019 State Budget Law on the synthesis of revenues and expenditures not including a mention on thereof. The category of property taxes and fees includes building tax and fee, land tax and fee, judicial stamp fees and other stamp fees.

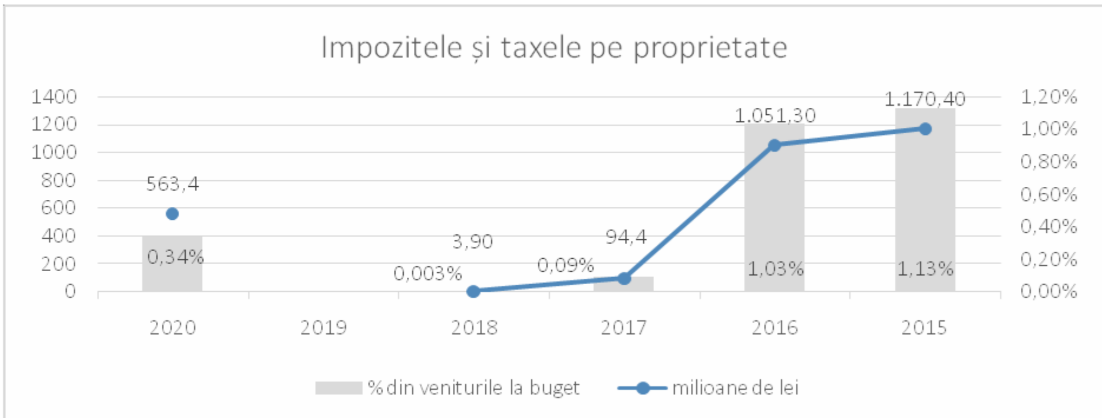

Figure 4. **Evolution of the contribution of property taxes and fees to the State Budget, 2015-2020**
(*Source:* Law 5/2020, Law no. 50/2019, Law no. 2/2018, Law no. 6/2017, Law no. 186/2014)

Taxes and fees on goods and services are, as an absolute value, increasing (62.965 million lei in 2015, compared to 97.427 million lei in 2020), but, as a percentage of the total budget, the largest contribution to the budget was in 2015 (60.68%). Of all the categories of taxes, these had constantly the largest contribution to the State Budget.

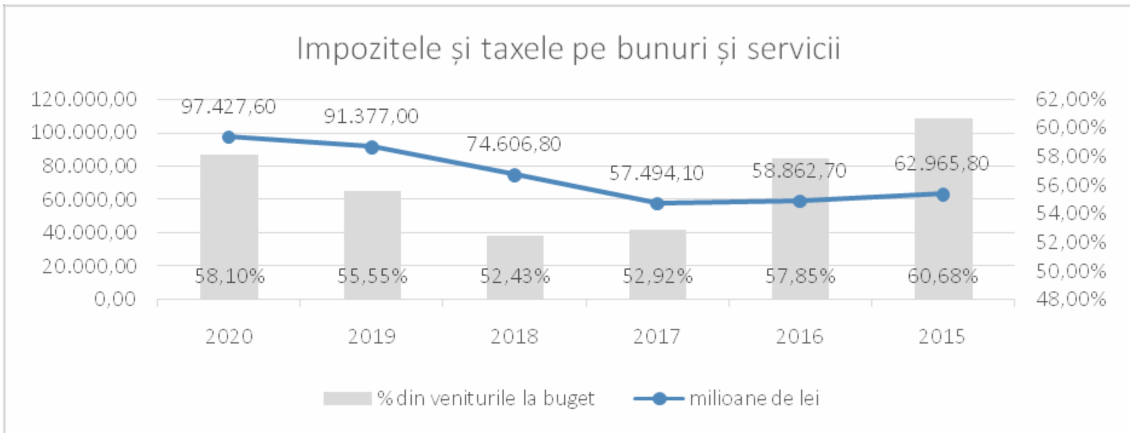

Figure 5. **Evolution of the contribution of taxes and fees on goods and services to the State Budget, 2015-2020**

(*Source:* Law 5/2020, Law no. 50/2019, Law no. 2/2018, Law no. 6/2017, Law no. 186/2014)

Other general taxes and fees on goods and services (Figure 6) include taxes on the exploitation of natural resources, taxes on revenues from price deregulation in the case of natural gas, other taxes and fees on turnover, value added or sales. The contribution to the State Budget is a modest one (at most 1.554 million lei, less than 1% of the value of the State Budget) and relatively stable over time (between 0.70% and 0.98%).

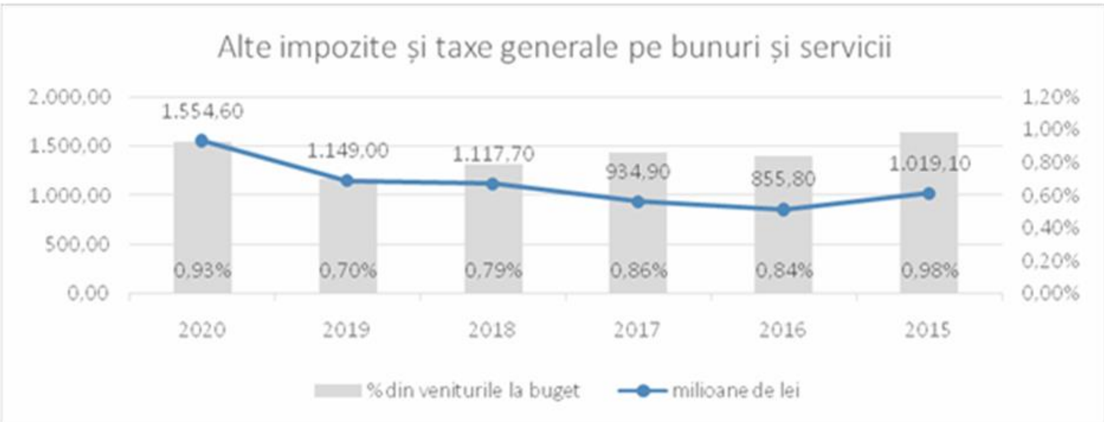

Figure 6. **Evolution of the contribution of taxes and fees on the use of goods, authorization of the use of goods or on the carrying out of activities to the State Budget, 2015-2020**

(*Source:* Law 5/2020, Law no. 50/2019, Law no. 2/2018, Law no. 6/2017, Law no. 186/2014)

The category of taxes and fees whose contribution to the value of the budget has undergone an important change during the period studied includes taxes on the use of goods, authorization of the use of goods or carrying out of activities (Figure 7). Gambling fees represent the largest part of the revenue from this type of fees. During 2015-2018, the proportion of the budget varied between 0.85% and 1.32%, so that in 2019 and 2020, has increased at 2.61% and 2.73%, respectively.

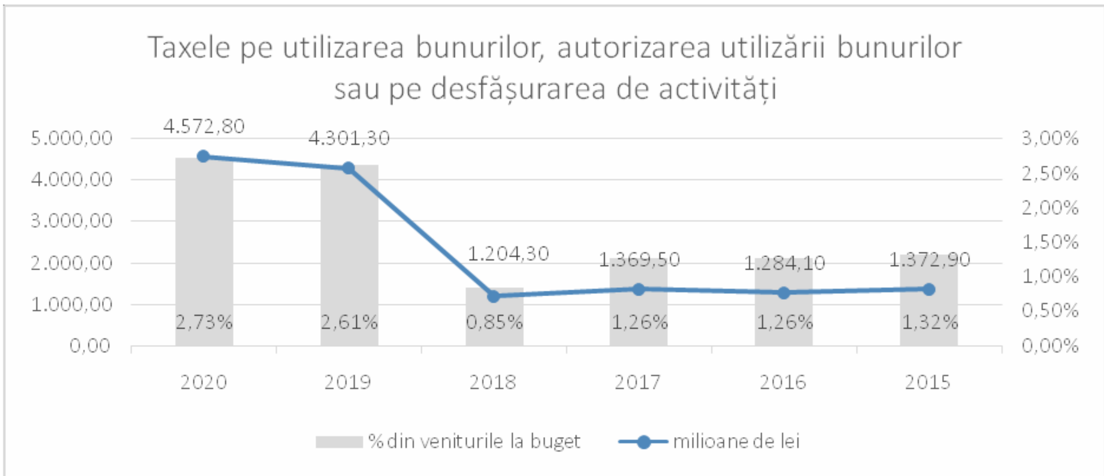

Figure 7. **Evolution of the contribution of taxes and fees on the use of goods, authorization of the use of goods or on the carrying out of activities to the State Budget, 2015-2020**

(*Source*: Law 5/2020, Law no. 50/2019, Law no. 2/2018, Law no. 6/2017, Law No. 186/2014)

The contribution of the category of other taxes and fees (Figure 8) has been increasing in 2016 and 2017, and then stabilized at about 0.08% -0.09%. This category includes the specific tax applied to the HoReCa industry, certain customs duties and other taxes and fees.

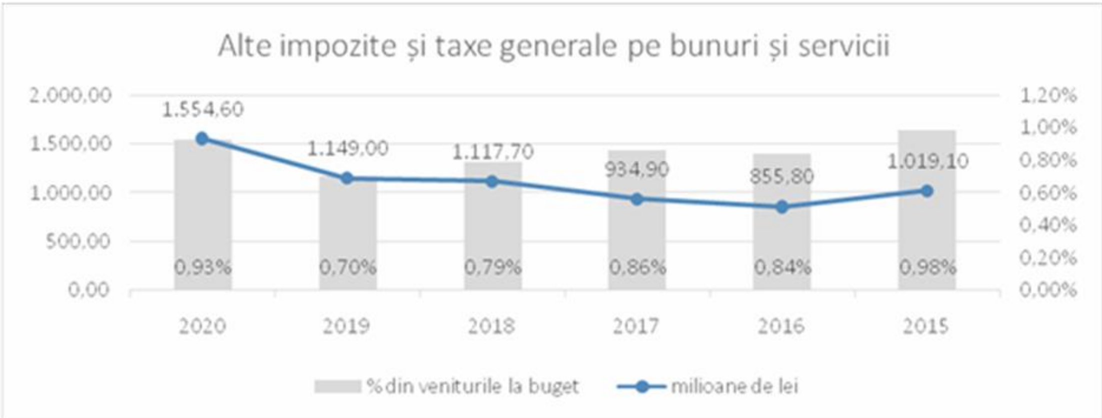

Figure 8. **Evolution of the contribution of the category of other taxes and fiscal fees to the State Budget, 2015-2020**

4.2. Comparative analysis between the contribution of taxes and fees to the State Budget between Romania, Poland and France

France has total revenues to the State Budget as a percentage of GDP lower than Romania and Poland. Romania had the largest fluctuations in State Budget revenues expressed as a percentage of gross domestic product during the period studied: e.g., 25.1% in 2015 and 21.4% in 2017. The latest data provided by the European Union on this topic are from 2018 and place Romania on an intermediate position regarding the percentage of GDP represented by revenues to the State Budget, below Poland, but above France.

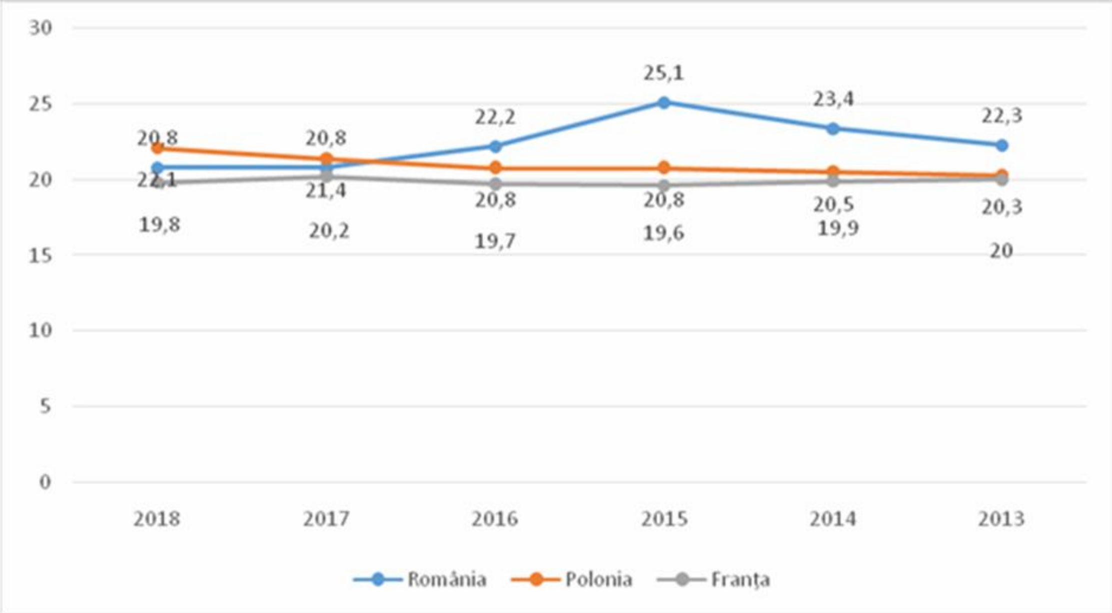

Figure 9. **State Budget revenues expressed as a percentage of GDP for Romania, Poland and France, 2013-2018**
(*Source:* Eurostat, 2019)

Regarding consumption taxation, France and Romania have very different fiscal strategies: it is heavily taxed in Romania, but weakly taxed in France, which focuses more on labor taxation. Consumption taxes have a higher contribution to the State Budget in Romania than in Poland and France (Figure 9); however, it is in sharp decline (from 44.5% of total taxes in 2013 to 39.7% in 2017). Poland has an intermediate approach (about 35-36% of total taxes are those on consumption), and France has much lower taxes on consumption (about 24%).

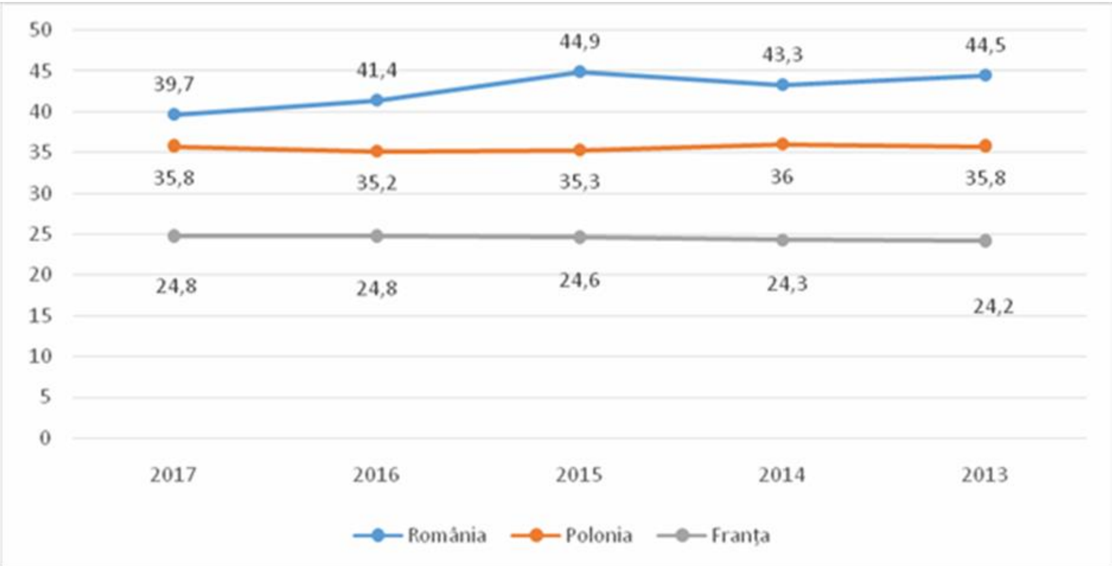

Figure 10. **Taxation of consumption as a percentage of total taxes in Romania, Poland and France, 2013-2017**
(*Source:* European Commission, 2019)

On the other hand, France taxes labor much more heavily (Figure 10), which accounts for more than half of all collected taxes; they have a comparable level in the case of

Poland and Romania, but Poland has a more stable level, registering a higher fluctuation in Romania.

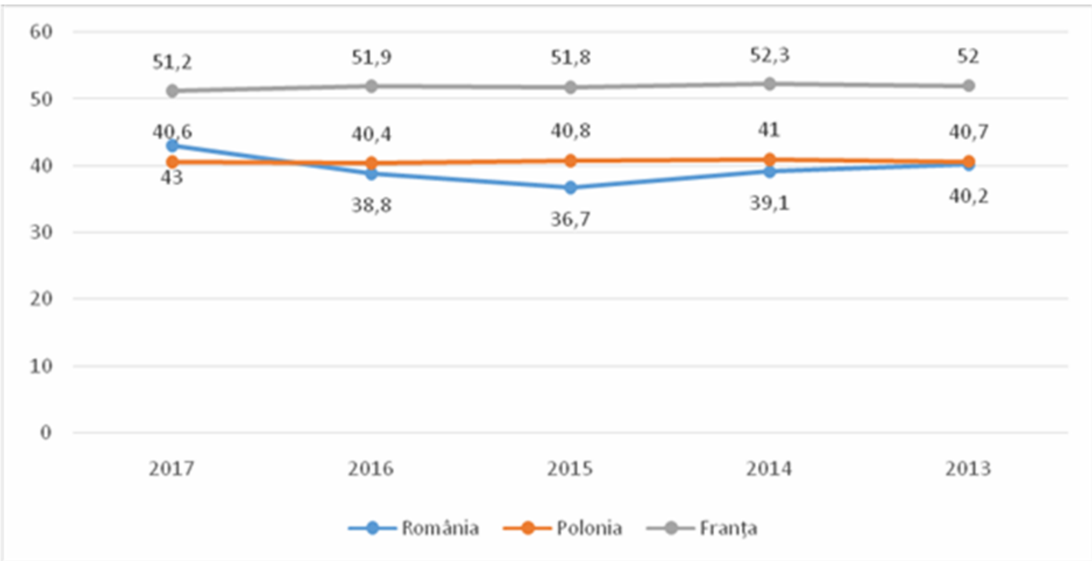

Figure 11. **Taxation of labor as a percentage of total taxes and fees in Romania, Poland and France, 2013-2017**
(*Source:* European Commission, 2019)

In Romania, capital taxation has a much lower level than in Poland and France, which have similar fiscal policies in this regard (Figure 10). In Romania, there was a tendency to increase capital taxation as a percentage of total taxes and fees, but this stopped in 2017.

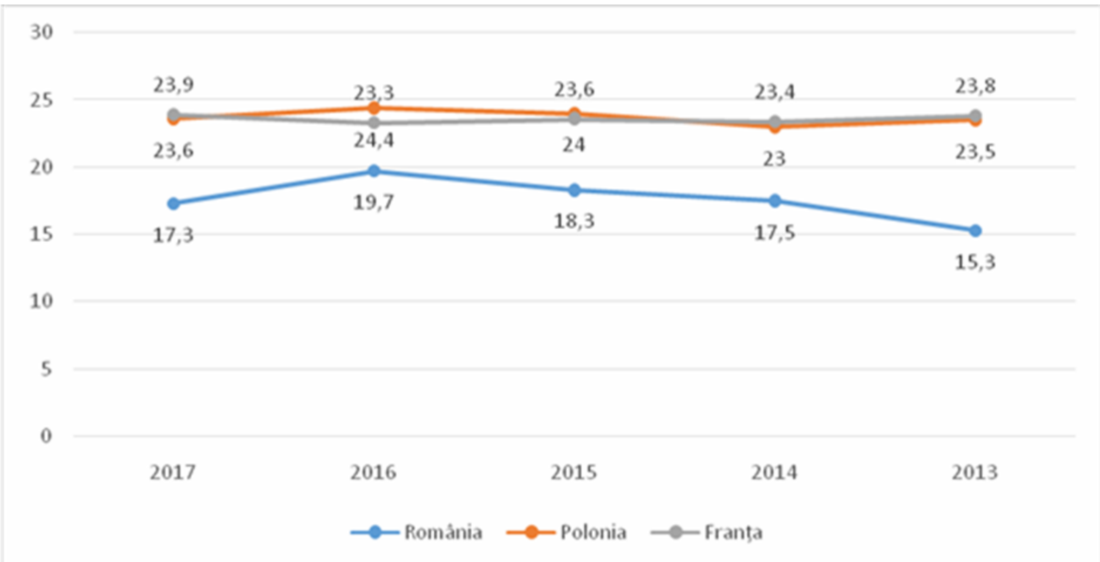

Figure 12. **Capital taxation as a percentage of total taxes and fees in Romania, Poland and France, 2013-2017**
(*Source:* European Commission, 2019)

Another important difference on the contribution of taxes to the State Budget between the three states analyzed refers to property taxation, which has the lowest level in Romania. Moreover, the trend is for property taxation to contribute more to the budget in France as time goes on, but in Romania, the trend is one of decrease.

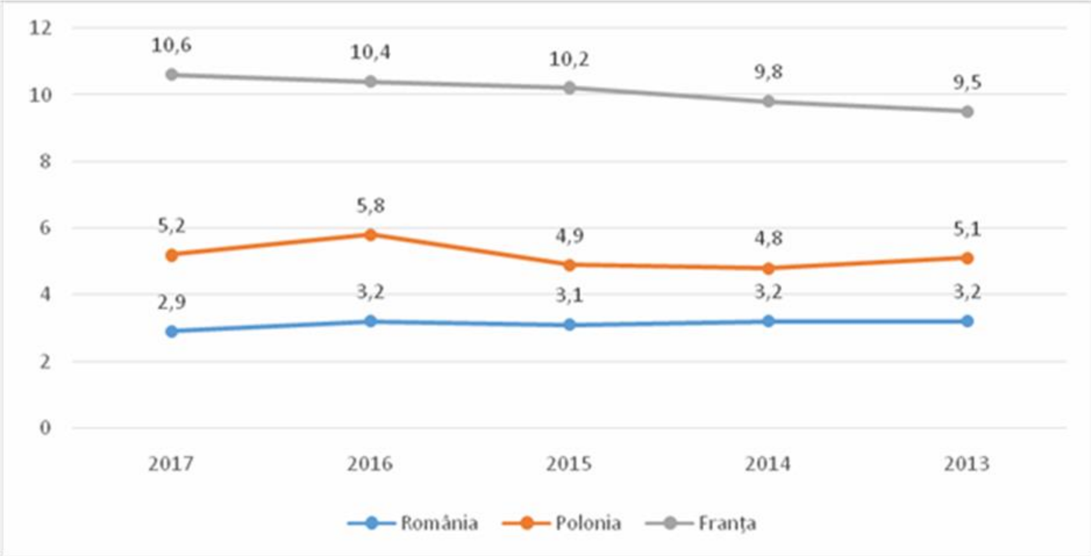

Figure 13. **Property taxation as a percentage of total taxes and fees in Romania, Poland and France, 2013-2017**
(*Source*: European Commission, 2019)

5. Conclusions

The comparative analysis on the selection of taxes and fees, as expressed in the State Budget during 2015-2020, highlighted, on the one hand, their dynamism, as well as the different contributions in relation to the State Budget.

Taxes on goods and services, the category in which value added tax is included, have an enormous impact on the State Budget, representing a large part of the contribution that tax revenues have to the budget. In practice, given the size of the contribution of the tax on goods and services, changes in the fiscal policy concerning them can have a major impact on the level of revenues to the State Budget. The predictability and stability of these revenues are all the more important.

On the other hand, taxes and fees on property, expressed as a percentage of the value of the State Budget, have a minor contribution, and their stability is a low one, with significant fluctuations from one year to another. Their general trend is one of decrease in Romania, a trend opposite to that of other European Union countries, where was noted a slight increase, in the context in which in most of them there is a higher level of taxes and fees on property compared to Romania, especially in France (European Commission, 2019).

Last but not least, during the studied period, increases of the contribution of the category of other taxes and fiscal duties were noted, but also of the taxes on the use of goods, authorization of the use of goods or on the carrying out of activities.

Following the comparison of the contribution of taxes and fees to the Romanian budget with that of France, we notice important differences in terms of taxation of labor, consumption, capital and property. Basically, if we want to change the tax system in Romania so that it is more similar to the French one, we would need a decrease in consumption taxes relative to the total level of tax revenues, and an increase in the contribution of taxes on labor, capital and especially on property in relation to revenues to the State Budget.

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Transfer Prices and Tax Inspections in Romania

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Abstract:
Research question: *How are transfer prices regulated by the national legislation? What is the approach of the Romanian tax bodies? What should be changed?*
Motivation: *Although, transfer prices is a growing topic of discussion in the international literature and tax inspections in Romania are a major debate subject in the tax field, the number of studies approaching these two aspects is reduced. Transfer prices and the practices of eroding the taxable base and profit transfer have an impact on the entire society, from small and medium-sized companies that could be affected by the unfair competition, to the tax administrations that must ensure the fair taxation of profits, multinational companies that must observe arm's length and should be able to document this fact and up to the citizens of the emerging states.*
Idea: *The object of the paper represents the understanding of the transfer prices' approach in Romania, as regulation and application in practice, from the perspective of companies, specialists and tax bodies.*
Data: *Data from specialized articles and public activity reports of the National Agency for Fiscal Administration were analysed.*
Tools: *Qualitative review of relevant papers, and national regulations.*
Findings: *Romanian legislation has gaps that make it difficult for all parties involved in the analysis and documentation of transfer prices and procedures regarding tax inspections requiring modifications for the improvement of the tax obligations' collection. The effects are major and include tax litigations, additional costs and an impaired collaboration with tax bodies.*

Keywords: *Transfer prices; ANAF; tax inspections; affiliated parties; aggressive tax planning.*

1. Introduction

This article will analyse the tax inspections performed by the National Agency for Fiscal Administration (ANAF), especially those focused on transfer prices, starting from the selection of the targeted taxpayers, the actual performance of a tax inspection up to the completion of the tax inspection.

The second chapter represents a summary of the tax inspections' regulations and specific procedures. The third chapter highlights the challenges encountered when drafting the transfer prices, both by taxpayers as well as specialists on the one hand and also by tax inspection bodies. The last chapter presents a retrospective and prospective analysis of the tax inspection activity considering that specialists in the field foresee the intensification of tax inspections in the field of price transfer in Romania in the following years.

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Multinational companies are already concern to severe switch pricing audit scrutiny all around the world, with BEPS-pushed adjustments of switch pricing rules, the upward push of the virtual economic system and more information sharing via way of means of government main to developing threat and controversy in switch pricing. Even so, ranges of tax controversy associated with switch pricing are predicted to intensify.

The transfer price is defined by the Organization for Economic Cooperation and Development (OECD) as the price adopted for accounting purposes, used to evaluate transactions between affiliated companies, for the performance of transactions of an income nature or in order to transfer capital between them (OECD, "Glossary of statistical terms").

The arm's length principle represents the international standard in the analysis of transfer prices from the tax perspective, provided by the Model Tax Convention of OECD at the article 9 indicating that in case transactions are performed between two affiliated companies in conditions (commercial or financial) other than those that would have existed between independent companies, the profits that could have been made if those conditions did not exist and were not obtained because of them, may be included in profits and taxed as such.

OECD member states and non-OECD states have adhered to the Multilateral Convention for the implementation in tax treaties of measures to prevent the erosion of the taxable base and the transfer of profits (as in the case in Romania), recognize and support this principle which has been introduced since the first publication of the OECD Report on Transfer Pricing and Multinational Enterprises published in 1979.

Transactions between affiliated persons have begun to attract attention as the globalization of the world economy accelerates and the role of multinational companies in international trade increases, the main concerns being related to the following:

- Aggressive tax planning;
- Distortion of the international market and unfair competition;
- The volume of transactions between affiliated persons increased.

A recently published article (Karel *et al., 2020)* shows that the phenomenon of transfer prices is a topic of great interest, a clue being the fact that in the last 10-15 years the number of publications from the Scopus database on this topic increased exponentially.

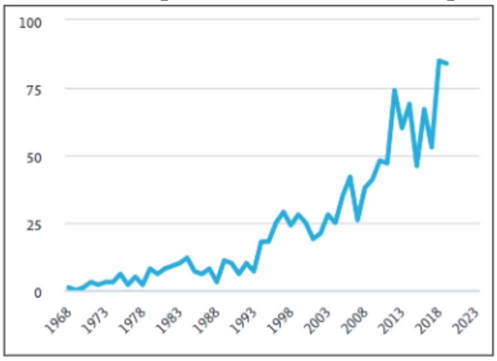

Figure 1: **Development of the numbers of articles dealing with transfer pricing in the Scopus database within the period 1968–2019**
(*Source:* Karel *et al*., 2020: 25-26)

Transfer pricing regulations are primarily based totally on an ambiguous principle, supplemented via way of means of a recounted unwritten frame of not unusual place understanding that is drawn on and implemented to complicated, truth in depth situations. This is an essential supply of energy, as energy is enhanced, each at the extent of the character experts and the network as a whole, while related to a frame of technical know-how that is not without problems mastered. If the frame of know-how is ambiguous and uncertain, requiring complicated strategies and nuanced judgements, this serves to guard and buttress the experts' energy and authority, and for the elite experts, area domination. Furthermore, the software of the ALP in truth in depth situations, to decide the correct switch prices, approach every unique case can be barely specific and so can't be immediately compared, a key weapon of "expert force" (Abbott, 1988).

The necessity of establishing rules that are internationally acknowledged was stated both by administrations as well as by companies. Tax administrations defend their legitimate right to tax profits that have been obtained in their jurisdictions. On the other hand, companies intend to avoid double taxation and additional compliance costs that may occur for example at a multinational company following an adjustment of the transfer prices, in the jurisdiction X but which is not accepted by the tax administration in the jurisdiction Y, thus resulting a double taxation.

According to the information published by OECD in 2015, the practices of aggressive tax planning had an estimated global impact of 240 billion USD, approximately 10% of the profit tax (OECD/G20 "Base Erosion and Profit Shifting Project" https://www.oecd.org/ctp/beps-explanatory-statement-2015.pdf).

In Romania, the beyond few years had been marked through an intensification of the variety of tax audits accomplished through the National Agency for Fiscal Administration (ANAF) with a focal point on switch pricing matters, in addition to through a boom withinside the variety of tax controversy instances induced through switch pricing adjustments.

The Romanian legislation defines the market price as "the amount that would have been paid by an independent customer to an independent supplier at the same time and in the same place, for the same good or service or for a similar one, in conditions of fair competition" (Law No. 227/2015 on the Tax Code, Article 7, point 32)

Also in the Law no. 227/2015 on the Romanian Tax Code, the conditions under which two persons are affiliated are determined:

- In case of natural persons, the affiliation is given by the kinship connection up to the third degree, husband / wife;
- A person (natural or legal) holds, directly or indirectly, at least 25% of the value or number of shares or voting rights of a legal person or if he/she effectively controls the legal person.

Regarding the transactions between affiliated persons, the Law no. 227/2015 on the Tax Code provides:

> *"Transactions between affiliated persons are carried out according to the market value principle. In a transaction, of a group of transactions between*

affiliated persons, tax authorities may adjust, if the market value principle is not complied with, or may estimate, if the taxpayer does not provide the competent tax authority with the necessary data to determine whether the transfer prices charged in the analysed situation comply with the market value principle, the amount of the income or expenditure related to the tax result of any of the affiliated parties based on the level of the central market trend." (Law no. 227/2015 on the Tax Code, art. 11, paragraph 4)

In order to document the observance of the market value principle, taxpayers have the obligation to prepare the transfer pricing file. It is regulated by ANAF Order no. 442/2016 and establishes the amount of transactions, the terms for preparation, the content and the conditions of requesting the file of transfer prices and the procedure of adjustment / estimation of transfer prices.

The determined significance thresholds are calculated by totalizing transactions, without VAT, performed with annual affiliated parties.

The drafting of the transfer prices file is mandatorily performed annually until large taxpayers that exceed any of the significance thresholds set by the ANAF Order no. 442/2016 submit the annual declaration regarding the profit tax:

Table 1. **Significance thresholds for large taxpayers**

Transaction type	Collected/paid interests	Service provision	Purchase/sale of tangible or intangible assets
Significance threshold	€ 200,000.00	€ 250,000.00	€ 350,000.00

(*Source:* Decree no. 442/2016)

The request to present the transfer price file is usually made during a tax inspection. However, the legislation provides the possibility of requesting it also following a tax inspection, in particular cases such as a tax inspection at a partner.

Large taxpayers that do not exceed the above significance thresholds, together with the rest of taxpayers are obligated to draft the transfer price file at the request of the control bodies, only during the tax inspection if they exceeded any of the following significance thresholds:

Table 2. **Significance thresholds for the rest of the taxpayers**

Transaction type	Collected/paid interest	Service provision	Purchase/sale of tangible or intangible assets
Significance threshold	€ 50,000.00	€ 50,000.00	€ 100,000.00

(*Source:* Decree no. 442/2016)

The other taxpayers performing transactions with affiliated parties but who do not exceed the significance thresholds provided by the ANAF Order no. 442/2016, are not obligated to compile the transfer price file. However, they are obligated to observe the market value principle and the documentation of this fact according to the general rules provided by the financial – accounting and tax regulations.

The documentation of observing the market price principle is performed by using certain specific methods, provided by the Law no. 227/2015 regarding the Tax Code at the art. 11, paragraph 4 and Guidelines on the transfer prices issued by OECD:

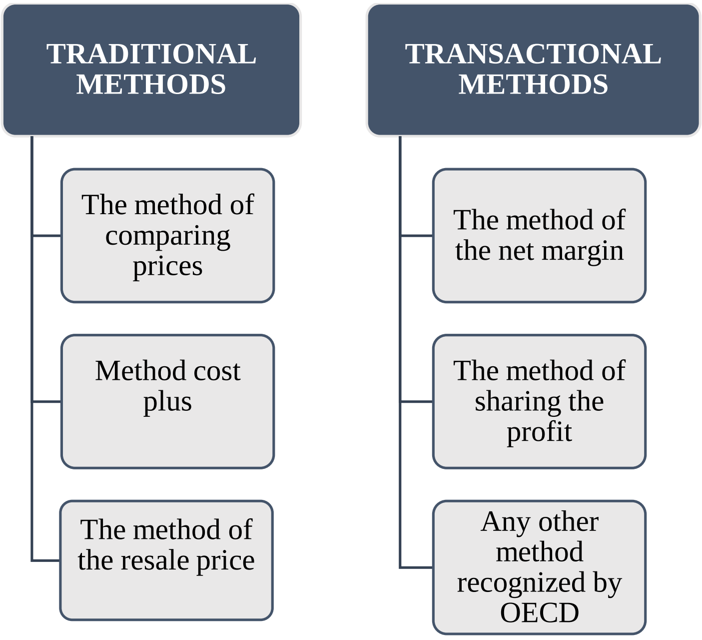

Figure 2. **Transfer pricing methods**

In addition, the ANAF Order no. 442/2016 determines in the Annex 3 the content of the transfer price file, which must include:

A. Information about the group:
- Organizational, judicial and operational structure of the group;
- The general description of the group's activity, business strategy;
- The general presentation of the transactions between affiliated persons and of the policy of determining the transfer prices;
- Functional analysis (the description of the fulfilled functions, undertaken risks and used assets);
- Other information depending on the documented types of transactions.

B. Information about the taxpayer:
- Organizational, judicial and operational structure of the taxpayer;
- The general description of the taxpayer's activity, business strategy;
- The presentation of the transactions performed with each affiliated person and of the policy of determining the transfer prices;
- Functional analysis - the description of the fulfilled functions, undertaken risks and used assets;
- Comparability analysis - the description of the search strategy of comparable societies and sources of information, the presentation of the financial indicators' values used in the comparability analysis, the description of potential comparability adjustments performed, the presentation of the list of comparable societies and list of societies eliminated from the comparability sample, therefore of the manual search, by indicating the exclusion reasons, etc.
- Other information depending on the types of documented transactions.

2. Tax inspections in Romania

In 2019 specifically, the ANAF formally initiated a chain of tax audits in regards to massive and medium taxpayers thru Operation Iceberg, geared toward combatting income transferring and verifying the switch pricing preparations of massive MNEs working in Romania. Such an initiative become now no longer remoted and numerous waves of tax audits concentrated on all classes of taxpayers had been initiated in 2019. Therefore, it is important for companies operating in Romania to take measures to avoid disagreements on transfer pricing and to be prepared to resolve inevitable disputes.

The Law no. 207 regarding the Code of Tax Procedure, Title VI where we can find the main aspects mainly regulates tax inspections in Romania.

Art. 113 The definition of the tax inspection:
Tax inspection represents the activity with the purpose of verifying the legality and compliance of the tax declarations, correctness and accuracy of the obligations' fulfilment regarding the determination of the tax obligations by the taxpayer/payer, observation of the provisions of the tax and accounting legislation, verifying or determining, as the case, of the taxation bases and actual related situations, determining the differences of the main tax obligations.

Art. 114 Targeted persons:
Tax inspection is exercised on any persons and entities, regardless of their organization form, with determination, retaining or payment obligations of the tax obligations provided by the law.

Art. 116, 117 and 118 Methods, period and rules:
For the performance of the tax inspection, the inspector evaluates the significant documents and operations and the following methods can be used:

a. Inspection by survey, consisting in the selective verification activity of the taxable periods, significant documents and operations, which are the basis of the calculation, highlighting and payment mode of the tax obligations;
b. Exhaustive inspection consisting in the verification activity of all the taxable periods, as well as significant documents and operations, which are the basis of the calculation, highlighting and payment mode of the tax obligations;
c. Electronic inspection, consisting in the verification activity of the accounting and its sources, electronically processed by using analysis, evaluation and testing methods assisted by specialized information instruments.

The tax inspection is performed during the prescription term of the right to determine tax receivables. The tax inspection activity is organized and performed based on certain annually, quarterly and monthly programs and are performed so as to affect as little as possible the current activity of the taxpayer/payer and to efficiently use the time set for the performance of the tax inspection.

2.1. Selecting the taxpayers which are about to be subject to the tax inspection

The Law no. 207/2015 regarding the Tax Procedure Code by the article 121 indicates that the competent tax inspection body depending on the risk level performs the selection and this level is determined based on a risk analysis.

This risk analysis is defined as the activity performed by the tax body for the identification of the noncompliance risks regarding the fulfilment of the taxpayer/payer of the obligations provided by the tax legislation, to evaluate, manage them, as well as to use them for the performance of the tax administration activities.

Also, based on the risks analysis, the tax body determines the type of the general or partial tax inspection (only for a certain tax obligation for example).

One of the Romanian taxpayers' dissatisfactions related to tax inspections is constituted by the lack of transparency in this risk analysis process, the criteria or methodology are not published.

However, in practice there are certain presumed risk factors that are about to be used in the analysis performed by tax bodies, namely:

- Financial indicators, such as negative own capital or accounting and/or tax loss for more than 3 consecutive years, fluctuations of profitability or profitability outside the average of the activity field;
- Tax indiscipline, such as submitting the tax declarations with delay, their rectification with delay, outstanding tax obligations;
- Transactions with affiliates. Starting with 2020, this fact is even easier to be noticed by tax bodies from the content of the 394 declaration;
- Transactions with foreign companies, residing in a tax paradise;
- Special events such as the initiation of the insolvency proceedings, merging, divisions, modification of the structure of associates/shareholders and administrators;
- The lack of correlation of the accounting results with the level of the declared tax obligations.

However, a transparent procedure for the evaluation of the tax risk might be beneficial and might determine the taxpayers to voluntary comply. By knowing the criteria, taxpayers may adopt a proactive attitude, would pay more attention to the accounting and tax reports and even be more cautious in their operational activity.

2.2. The actual performance of the tax inspections

Following the selection of the taxpayer to be subject to the tax inspection, the following step is to receive the tax inspection notice. It is communicated in writing to the taxpayer before commencing the inspection with 30 days for large taxpayers, respectively 15 days for the other taxpayers.

The notice contains essential elements related to the tax inspection which is about to be performed as well as the legal ground, the commencement date of the tax inspection, tax obligations, the period corresponding to the tax inspection and indicates the right of the taxpayer to postpone the commencement date of the tax inspection for justified reasons.

The Law no. 207/2015 regarding the Tax Procedure Code indicates both the rights as well as the obligations of the taxpayer, the main ones being:

RIGHTS

- The right to postpone the beginning of the tax inspection;
- The right of the taxpayer to be informed regarding the beginning of the tax inspection and also during the entire inspection;
- The right to be verified one single time for tax obligations and prescription period;
- The protection of the tax secrecy;
- The right to benefit of specialized support;
- The right that the activity is disturbed as little as possible;
- The right to present one's point of view before issuing the tax inspection report;
- The right to appeal.

OBLIGATIONS

- The obligation to allow the access of the tax bodies to the activity's premises;
- The obligation to ensure an appropriate space and necessary logistics;
- The obligation to provide the tax bodies with all the documents and information necessary to determine tax obligations;
- The obligation to collaborate;
- The obligation to fulfil the measures provided by tax bodies;
- The obligation to pay the taxes and fees differences determined by tax bodies and the related interest and delay/non-declaration penalties;

Figure 3. **Taxpayer's rights and obligations**

The taxpayer may waive the 30/15 days available until the commencement date of the tax inspection or may request in writing, for justified reasons, the postponement of the tax inspection and the control bodies will approve or reject the request, as the case. In practice, the taxpayer's request is usually accepted and the taxpayer may even request the modification of the inspection's location if the taxpayer does not have an appropriate space.

The commencement date of the tax inspection is always the date registered by the inspection in the Control Ledger. It is essential to remember this aspect as the maximum completion term of the tax inspection is reported at this date, namely:

a. 180 days in case of large taxpayers or with secondary headquarters;
b. 90 days in case of medium-sized taxpayers;
c. 45 days in case of the other taxpayers.

During the tax inspection, the control bodies analyze the financial-accounting documents, tax records. They also verify the legality and compliance of the economic operations and the way they were reflected in the accounting and tax records, the correctness of determining the taxable basis during the period that is subject to the inspection and, especially for transactions performed in relation with affiliated entities, they may request the transfer price file. The request is made according to the ANAF Order no. 442/2016, annex 1 and will indicate the period and transactions for which the compilation and presentation of the transfer price file is required, as well as the presentation deadline.

The presentation term of the transfer prices file is 10 calendar days for large taxpayers who have exceeded the significance thresholds provided by table 1.1., respectively between 30 and 60 calendar days for the rest of taxpayers with the obligation of compiling the transfer price file. Taxpayers are also entitled to request the extension of the term with maximum 30 calendar days.

In addition to the transfer price file, control bodies may also request in writing other additional information, relevant for the analysis of the transfer price file.

The fine for not presenting the transfer price file can reach up to 14,000 lei. However, the major consequence is that the failure to present the transfer price file or its incomplete presentation entitles the tax body to proceed to the estimation of the transfer prices' amount and consequently adjust the taxable basis (by correcting the incomes or expenses) of any of the affiliated parties.

2.3. The completion of the tax inspections

The first step in the inspection's completion is represented by the communication of the tax inspection report project and of the date set for the final discussion. The taxpayer is entitled to express its opinion in writing on the report project and the right to express its point of view in the final discussion. The date set for the final discussion cannot be earlier than 3 business days from the communication date of the tax inspection report project (5 days in case of large taxpayers) and it is considered the completion date of the tax inspection. The presentation of the point of view can be made within 5 business days from the conclusion date of the tax inspection (7 days for large taxpayers).

The tax inspection is ended by a tax inspection report in which the tax body presents its findings regarding the tax obligations of the Tax inspection notice and regarding other tax and/or accounting obligations, which represented the verification's object. The tax inspection report will also refer to the taxpayer's point of view if it was expressed.

Based on the tax inspection report, within 25 business days, for each tax obligation, which was the verification's object, the tax body is obligated to issue:

a. The tax decision, for differences in addition or minus of the main tax obligations related to differences in tax bases;
b. The decision to not modify the taxation bases if no differences of the taxation bases are found and respectively, main tax obligations;
c. The decision to modify the taxation bases if differences are found on the taxation bases, but without determining differences of the main tax obligations.

In case the taxpayer does not agree with the findings of the tax body from the tax inspection report, it is entitled to administratively appeal by submitting a complaint against the tax inspection report together with the tax decision or the decision not to modify the taxation basis.

The complaint's submission term is 45 days from the communication date of the tax decision or decision not to modify the taxation basis and is submitted at the issuing tax body.

By the Law no. 295/2020 for the amendment and completion of the Law no. 207/2015 regarding the tax procedure code, as well as the approval of certain tax-budgetary measures, the art. 272 was amended and it was decided that the complaints' settlement will be made by a specialized structure for settling complaints within the Ministry of Finances and not by the issuing tax body as before.

The amendment was requested and welcomed by the private environment to ensure an objective treatment in the complaints' settlement and will become effective until June 30 this year.

If the tax inspection lead to adjustments of the transfer prices for transactions performed with Romanian affiliated persons, the tax body that performed the tax inspection issues according to OPANAF no. 3737/2015, the adjustment or estimation decision of the expenses or incomes for each company, other than the one where the tax inspection was performed. There are notified both the company as well as the tax body competent for the administration of the receivables due by it.

3. Challenges encountered in tax inspections focused on transfer prices

Among the main problems encountered in the performance of tax inspections in the field of transfer prices, reported by taxpayers and professionals in the field are:

- The interpretation of the materiality thresholds;
- Drafting terms;
- The ignorance by the tax bodies of the compiled transfer price files, mostly because they are incomplete;
- Faulty communication;
- Excessive documentation requirements;
- Performance of erroneous calculations;
- The use of data that are not comparable.

In practice, the first difficulties occur even since the phase of compiling the transfer price file. There is one the one hand the Romanian legislation where different interpretation situations occur, the lack of regulation and technical difficulties and on the other hand, the taxpayer's approach of the justification of observing the market value principle.

The ANAF Order no. 442/2016 provides significance thresholds for compiling transfer prices but, as we do not have many indications regarding the interpretation of such thresholds, situations occur in which the taxpayer and tax body have different interpretations.

For example, in case a large taxpayer who exceeded the significance threshold for only one of the three transactions category, it may consider that it has the obligation of drafting the transfer price file only for that transaction category and not for all the three categories. If it will be subject to a tax inspection and the tax body has a different interpretation, it may be sanctioned for the incomplete presentation of the transfer price file.

A particular situation is the one of the interest. When determining the significance thresholds in the ANAF Order no. 442/2016, the legislator uses the phrase "collected/paid interest" but the aspect of the interest payment is irrelevant as based on the commitment accounting, interest costs are periodically recorded in the accounting records, as they are due and their tax impact is not linked to the moment of the actual payment. At the interpretation of this phrase, a taxpayer who registered costs with the related interest of a financial service provided by an affiliate but did not actually paid the interest, it might consider that it is not obligated to compile the transfer price file as the interest was not paid.

Another interpretation problem is the one related to the paragraph 5, art. 2 of the ANAF Order no. 442/2016:

> *"(5) Taxpayers/Payers falling within the provisions of the paragraph (4) and who perform transactions with affiliated persons with a total annual value, calculated by summing the value of the transactions performed with all the affiliated persons, without VAT, under any of the significance thresholds set by the paragraph (4) will document the observance of the market value principle within a tax inspection, according to the general rules provided by the financial-accounting and tax regulations in force."*

The general rules provided by the financial-accounting and tax regulations do not provide guidelines regarding the way a taxpayer can or must document the observance of the market value principle and the lack of regulation can lead to abuse in tax inspections.

Professionals in the field of transfer price field also draw the attention on the technical difficulties when compiling the transfer price file considering its complexity and relatively short terms provided by the legislation.

Large taxpayers obligated to annually compile the transfer price file are usually part of a multinational group, so in their case, the preparation of the transfer price file is not a special event, many times they have also transfer price files already drafted at the group level and assisted by advisers with experience in the field.

One of the technical difficulties claimed by large taxpayers is the compiling term of the transfer price file, in their case being at the latest by the submission date of the annual declaration for profit tax, which is before the submission term of the annual financial situations. Thus, the documentation of the transfer prices for the transactions of the previous year, in the situation when the society has not completed yet the audit procedures and financial situations may lead to the unpleasant situation in which, subsequently to the compilation of the transfer price file, but before the submission date of the financial situations, to identify transactions which were not (correctly) reflected in the accounting and tax records of the previous year and which should have been taken into consideration at the compilation of the transfer price file.

Another difficulty encountered in the compilation of the transfer price file by large taxpayers in due time is represented by the availability of data. Usually, annual financial situations are submitted following the date of March 25th and the update of the databases from the specialized software is performed even a few months later, in the period August-September although specialists do not have another solution than use data from the year previous to the one analysed and adjust them. The problem occurs at these adjustments because in the lack of clear procedures, agreed by tax bodies, there is the danger of not being accepted.

For the rest of the taxpayers, the compilation of a transfer price file can be a challenge given the material resources and information necessary for its compilation. In practice, many times, taxpayers who are not obligated to compile the annual transfer price file do not consider it is necessary to compile the transfer price file previous to the tax inspection. Once the tax inspection began, the granted term for the presentation of the transfer price file may prove to be too short if we talk about complex or multiple transactions.

For them, it can be difficult to document the descriptive sections of the transfer price file, they do not have internal presentations or formalized activity reports.

For the documentation of observing the market value principle, at the compilation of the transfer price file information available in international databases are used (Orbis, Amadeus, TP Catalyst, etc.) but when selecting the data that will be used, taxpayers and tax bodies must pay more attention. Due to the accounting regulations differences it is possible for example that the operational profit margin of a French company cannot be compared with the margin of a Romanian company.

The Law no. 227/2015 regarding the Tax Code provides that at the analysis of the transfer prices the most appropriate method should be selected and that the method's selection must consider aspects such as the circumstances of the particular case, the accuracy degree of the data adjustment, available data, and financial conditions of the analysed transaction.

However, the analysis of the transfer prices is not an exact science, but it represents an estimation of the market price. Considering the diversity and particularity of the transactions performed by the taxpayers, the legislation that leaves room for interpretation, it is not surprising that approximately 80% of the tax inspections where transfer price files were requested/presented are followed by the adjustment of the transfer prices and subsequently by a litigation between the tax body and taxpayer.

Although taxpayers are able to express their opinion in writing and most of the times they do, the tax inspection report in its final form does not shed much light on the reasons for which the arguments of the point of view are not admitted but only resumes the incomplete explanations from the inspection report project. Thus, many times appeal do not reach their purpose and end in a tax litigation.

Tax bodies also do not provide support to taxpayers in documenting the transfer prices. Although ANAF elaborates and periodically publishes guides on different tax topics of interest, the only information related to the transfer price file found on the institution's website is the one provided in the presentation of the country profile, available here:

https://static.anaf.ro/static/10/Anaf/Prezentare_R/PrezentareTP_11042018.pdf, the most recent update is from April 2018. This document does not bring additional clarifications but rather represents a summary of the legal provisions in the transfer prices field.

4. The activity of the tax bodies in the last year

The last modification with impact on transactions with affiliated persons is represented by the modification of the declaration 394 starting with September 2020 by OPANAF no. 3281/2020. Taxpayers are obligated to report by this form if they performed operations with affiliated persons in the reporting period but without indicating the transactions or partners concerned.

ANAF indicates in the Report regarding the macroeconomic situation for 2021 https://sgg.gov.ro/new/wp-content/uploads/2021/02/Raport-buget-2021.pdf, *pg. 75)* that for the increase of the tax compliance, prevention and combat of tax evasion, during 2020, it identified affiliated persons at the national level, has inventoried transactions susceptible of being verified in the field of transfer prices and notified these taxpayers for the correction/rectification of tax declarations.

By analysing reports regarding the macroeconomic situation for 2019-2021, together with the performance reports of ANAF it is obvious that in the last 3 years transfer prices were a subject of interest for tax bodies:

Table 3. **The analysis of the tax inspections' impact on the transfer prices**

Period	**2018**	**2019**	**2020**
Verified transactions (billion Lei)	N/A	N/A	32.7
Difference of the taxation basis (billion Lei)	N/A	0.83	1.99
Additionally set profit tax (million Lei)	136.9	67.2	152.8

In the performance report of ANAF for 2019 there are also other measures adopted in the field of transfer prices:

- Data originating from the spontaneous exchange of information, related to the Actions 5 and 14 within the Package BEPS-OECD are valued in the risk analyses with specificity in the field of transfer prices;
- A working group was constituted with the purpose of elaborating the identification methods of taxpayers with tax risk associated to transfer prices;
- Trainings were identified in the field of transfer prices.

An interesting analysis of KPMG on tax inspections, published in 2021 shows, on one hand, that the share of amounts for which the bodies for resolving appeals with pronounced solutions for admission and/or abolition has increased in the last two years from 15.40% to 19.17%. On the other hand, it shows that a fiscal inspector establishes additional fiscal obligations of 2 million lei per year, on average.

In March this year, ANAF published the strategy for 2021-2024 where two of the objectives directly focus on transactions with affiliated persons:

- Simultaneous and collaborative actions of the tax inspection structures, tax antifraud and control of the natural persons' income aiming aspects regarding

both legal persons involved in fraudulent activities, as well as the identification and verification of the real beneficiaries of these companies, with the possibility of monitoring the routes of the fraud and move of the profit in other jurisdictions;
- The intensification of the control actions in the field of transfer prices, including by the efficient management of the information obtained as a result of using the administrative cooperation instruments.

3. Conclusions

In Romania, the transfer prices were also regulated before 2016, however, only after the publication of the Order no. 442/2016 and after the Multilateral Convention was signed for the implementation in the tax treaties of measures related to the prevention of the taxable basis' erosion and transfer of profits, they became a subject of interest for tax authorities.

The United Nations published in 2017 a Practical Manual on Transfer Pricing for Developing Countries. This manual provides important guidelines regarding the way tax administrations can organize and develop the tax inspection activity for transfer prices. A few of the key aspects of this manual, on which Romanian tax authorities should focus, are:
- The orientation towards the taxpayer. The education, guidance and a better communication with the taxpayer can only lead to the increase of the voluntary compliance and reduction of the tax administration's costs;
- Collaboration of the tax bodies with professional associations and professionals in the tax field so as to provide guidance regarding the documentation of the transfer prices and also to understand the economic reality;
- Reducing excessive bureaucracy as much as possible, this causing a negative image of the country in the perspective of investors;
- Reasonable control actions and proportional measures;
- Avoiding disputes or ensuring a fair and transparent process for their settlement;
- Training tax inspectors and providing the resources necessary for the tax inspection activity.

For example, the Nations recommend that the department specialized on transfer prices within tax administrations should include economists, legal advisers, accountants, auditors, experts in databases, and experts in public communication.

By the Law no. 295/2020 for the amendment and completion of the Law no. 207/2015 regarding the tax procedure code, as well as the approval of certain tax-budgetary measures, the art. 272 was amended and it was decided that the complaints' settlement will be made by a specialized structure for settling complaints within the Ministry of Finances and not by the issuing tax body as before.

The amendment was requested and welcomed by the private environment to ensure an objective treatment in the complaints' settlement and will become effective until June 30 this year.

The change of the competence to settle the appeals is an important measure, especially considering the fact that not long ago there was a public scandal referring to an alleged internal regulation of ANAF through which the tax inspectors had imposed targets regarding the amount of fines and even the number of criminal charges, during tax inspections.

Among small and medium-sized taxpayers, a change of attitude towards transfer pricing is also needed. They should pay more attention to this subject because large taxpayers benefit of the advantage of the group's experience but they are exposed to the risk of adjustment due to the performance of transactions without a transfer price policy. A documentation of the transfer prices post-factum can lead to price adjustments and late payment charges.

It is also necessary that professional bodies get involved in the problem of transfer prices by improvement proposals of regulations and ensure the professional training of specialists in transfer prices from the public and private environment.

It is understood that the implementation of such complex regulations such as those in the field of transfer prices and organization of specialized departments in tax administrations are far-reaching processes requiring a longer period. However, the number of tax litigations is alarming and shows that sustained efforts are necessary from all the involved parties to fulfil the target: The protection of the State's legitimate right to tax the profit obtained in Romania.

The analysis of the subject of fiscal inspections in Romania is difficult because the official reports of ANAF contain summary data, as there are no detailed studies or statistics.

The following research should analyze the share of tax inspections focused on transfer prices from the total number of inspections, the categories of taxpayers concerned but also information on the results of tax inspections, the share of disputes, the share of disputes won by taxpayers, etc.

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OPANAF no. 3737/2015 regarding the approval of the model and content of the form „Adjustment/estimation decision of the income or expense of one of the affiliated persons"

Accounting Measurement in The Light of the Historical Cost Recoverability and Investment Decision

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Abstract: *The article examines one of the important aspects of financial accounting related to the accounting measurement, following the convergences and divergences between three standards: Romanian regulations, international and American standards. The actuality and importance of the theme derives from the approach to accounting measurement research in a new perspective - in the light of the historical cost recoverability and the investment decision. Thus, the study addresses an important aspect of financial accounting, but also aspects of managerial accounting, namely the historical cost recoverability, a process that puts both management, administrators, and accountants of the entity in difficulty. The historical cost recoverability is the first factor considered in the investment process. Accounting standards are based on a fundamental axiom of recovery because any recovery anticipates and excludes losses of any kind. This axiom is valid in any investment model and in any accounting measurement model.*

Keywords: *Accounting measurement, initial cost, historical cost recoverability, accounting policies, investment decision, creative accounting, financial statements.*

1. Introduction

According to the Financial Reporting Conceptual Framework issued by IASB, "Financial Statements are most commonly prepared in accordance with an accounting model based on recoverable historical cost and the nominal financial capital maintenance concept."

The article presents answers and solutions to one of the key questions of accounting: is accounting measurement, represented by the many existing measurement bases, able to ensure a faithful representation of the economic reality? Based on this, we set out to analyze the relationship between the accounting measurement and the recoverability of the historical cost of the elements included in the financial statements. The arguments presented in this article are proof that the historical cost recoverability is the basis of the accounting measurement. The recovery of the entry cost is the center of the entire economic mechanism, and all the evaluation models contributes to the realization of this axiom.

Valuation is an important topic in accounting that generates strong debates, changes over the time, new measurement rules, all of that affecting directly the elements presented in the financial statements used by investors in their decision or used by shareholders to assess the entity resources and profitability.

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Historical cost is the initial cost measured and recorded at the recognition date of the assets and liabilities (Ristea *et al*., 2004). The simplistic historical cost is the valuation model that lasted over the time, being applauded but also blamed by many authors.

The historical cost is the consequence of two fundamental principles: the principle of monetary nominalism and the principle of prudence (Feleagă and Feleagă, 2007). The principle of monetary nominalism ignores fluctuations in value and requires valuation at historical cost, the initial cost, which once determined remains fixed if the elements are recognized in the financial statements. The prudence principle requires the recognition of potential impairment losses and prohibits the recognition of unrealized capital gains on assets.

Ionașcu (2003) considered that "at least for the near future, we will not witness the abandonment of the historical cost, but a mixed evaluation model, characterized by the cohabitation between the historical cost and the current value. The preparation of consolidated accounts may be based more on fair value than the preparation of individual accounts, as the consolidated accounts serve almost exclusively shareholders and managers. At the level of individual companies, the historical cost will also subsist since it is and will be required for the establishment of the taxable base through fiscal regulations".

There are authors that considers that he valuation at historical cost leads to a negative view of the entity, mainly due to the prudence principle, as the potential losses are recognized, and unrealized gains are not recognized. There is the risk that historical costs valuation may conduct to information that could not be relevant when prices are variable in time.

"The relevance of financial reports should be measured, in addition to association between market and accounting returns, in terms of its contribution to the stewardship function, reduction of agency costs, enhancement of management efficiency, and providing relevant information to stakeholders and workers in their social conflict" (Barlev and Haddad, 2003).

2. Accounting measurement

"Any significant change after entry into the real value of the goods tends to make the cost of origin misleading in the decision-making process" (Ristea and Dumitru, 2012: 369).

Valuation is a process that consists in measuring the value of assets, liabilities, equity, income, expenses, and financial results. The valuation rules change over the time, demonstrating the insufficient development of the measurement techniques and concepts, being an obstacle in the financial statements improving.

According to IASB, the selection of an evaluation basis, as well as the concept of capital maintenance, nominally or physically, "determines the accounting model used for the preparation of financial statements. Different accounting models exhibit different degrees of relevance and reliability and, as in other areas, management must seek a balance between relevance and reliability" (IASB, 2010: Financial Reporting Conceptual Framework, 4.65).

The Romanian, international and American accounting standards present and accept several measurement bases. The difference occurs when the measurement date change and the nature of the measured element variate.

Time sets the measurement moments, either in the past, present or future. Thus, on the baisi of the going concern principle, the measurement usually refers to past or present time, while estimating economic values for the future until the next evaluation date.

Depending on when the valuation is carried out, the following moments are differentiated: initial measurement, subsequent expenditure (in the case of already recognized fixed assets), measurement at the derecognition date, subsequent measurement, inventory date measurement and measurement at the financial statement's dates (Ristea and Dumitru, 2012: 366).

IASB presents two moments for evaluation process of the financial statement's elements, namely the initial and subsequent measurement. The subsequent evaluation, which according to IASB is permanent, is represented in the Romanian standards by the three specific, important, and binding subsequent evaluation moments for economic entities, namely: the date of inventory, the preparation of the financial statements date and the derecognition date. In practice, economic entities carry out the inventory once a year, usually at the end of the financial year, so that the valuation at the inventory date became the valuation at the reporting date. Thus, in the case of inventory, the initial valuation, at the time when the goods are acquired, is carried out at initial cost, and the subsequent valuation, at the reporting date, is carried out at the lowest value between the cost and the net book value.

Since the financial statements cannot be prepared without planning and carrying out the inventory to determine the real quantity, thus the value of the assets, the two moments identifies for the purpose of the measurement: the date of inventory with the financial statements date.

IASB defines the accounting measurement as "process of determining the monetary amounts at which the elements of the financial statements are to be recognized and carried in the balance sheet and income statement. This involves the selection of the particular basis of measurement." (IASB, 2010: Financial Reporting Conceptual Framework, 4.54).

The Romanian accounting regulations (Order No. 1802/2014) present the valuation as "the process by which the value at which the elements in the financial statements are recognized in the accounts and presented in the balance sheet … and in the profit and loss account" (Order No. 1802/2014, paragraph 47).

Romanian accounting regulations aligned the qualitative characteristics of the accounting information with those imposed by IASB. Thus, to be useful, information must meet all the fundamental qualitative characteristics: the relevance of the information, as well as the faithful representation of economic phenomena. Bothe standards adds a set of enhancing qualitative characteristics: comparability, verifiability, timeliness, and understandability, subject to cost-benefit limitations, but especially subject to the materiality constraints.

1.1. Accounting measurement in the vision of IASB

According to the Financial Reporting Conceptual Framework, for assets the valuation bases are the following:

a) *The historical cost* is the amount that was paid, or the fair value of the goods or services offered at the time of purchase.
b) *The current cost* is the amount that should be paid if that asset, or a similar asset, were acquired at the measurement date.
c) *Realizable (settlement) value* is the value that would be obtained if the goods were sold under normal business conditions.
d) *Present value* is represented by the value of net cash inflows in the future.

According to IASB, the most used valuation basis is the historical cost, which is usually combined with other accepted valuation bases (IASB, 2010: Financial Reporting Conceptual Framework 4.56). IASB allows the use of valuation methods "to different degrees and in varying combinations" (IASB, 2010: Conceptual Framework for Financial Reporting, 4.55) in the preparation of financial statements, therefore the accounting professional judgment and decision-making freedom will make the difference regarding the measurement of assets, liabilities, and equity to meet the fundamental quality of faithful representation.

According to the *Financial Reporting Conceptual Framework*, there are some economic entities that “use the current cost basis as a response to the inability of the historical cost accounting model to deal with the effects of changing prices of non-monetary assets” (IASB, 2010: Conceptual Framework for Financial Reporting, 4.55).

Thus, in the case of inventory it is achieved by reference to the *historical cost* and the *net realizable value*, with IAS 2.3 stating that inventories are recognized at the lowest value between *cost* and *net realizable value*. The initial measurement is made at the cost, which in the case of inventories is represented by the acquisition cost or the production cost.

In March 2018, IASB has published a revised Conceptual Financial Reporting Framework imposing new criteria for accounting measurement as well as factors to consider when selecting a measurement base (IASB, 2018: Financial Reporting Conceptual Framework 6.4, 10-12, 17, 21).

The option for one of the evaluation methods shall also be based on the qualitative characteristics of the resulting information as well as the cost constraint. Thus, the valuation is performed either *at the historical cost* or at the *current value.* The current value includes the following valuation bases: *fair value, value in use and fulfilment value,* or *current cost.* Previous *realizable value* is renamed *fair value* and the *present value* became the *value in use* with new more detailed measurement criteria and factor to be considered.

Historical cost measurement considers the determined factors from the transaction price, or other event that determined them. The historical cost cannot be changed, except the cases when the asset is depreciated, or liability that becomes onerous.

IASB specifies the situations in which the historical cost can be updated. For example, in the case of assets, the change in the historical cost takes place to describe (IASB, 2018: Financial Reporting Conceptual Framework 6.7):

a. Consumption of the economic resources constituting the asset, such as depreciation or amortization.
b. Payments received which partially or totally extinguish the asset.
c. Situations where the assets historical cost is not recoverable, due to impairment.
d. Interest accrual recognized as part of the assets financing.

Current value is based on information that reflects current conditions at the time of measurement and includes the following valuation models: fair value, value in use (in case of assets) and fulfilment value (in case of liabilities) as well as current cost. Current value incorporates all the factors that change the value of previous measurement date. (IASB, 2018: Financial Reporting Conceptual Framework 6.10-22).

Fair value is the price receives when the entity decides to sell the asset in an orderly transaction between several economic entities at the measurement date. Fair value represents the price according to the market participants' perspective with the information gained to "act in their economic best interest". The determination of the fair value take place by observing prices in an active market or by using valuation techniques such as cash flow, considering the following factors (IASB, 2018: Financial Reporting Conceptual Framework 6.13-14):

a. Future cash flows estimate.
b. Possible changes in the estimated value.
c. The money value in time.
d. The price for incurring the uncertainty inherent in the cash flows, depending by the size of the uncertainty.
e. Other factors, such as liquidity.

Value in use for assets is based on current cash flow values, such as management expectations of value, timing, and uncertainty of future cash flows. The value in use is the present value of cash flows or other economic benefits that an entity expects to derive from the use of an asset and its disposal (IASB, 2018: Financial Reporting Conceptual Framework 6.17-20).

Current cost is the current amount that the entity would pay to purchase an asset, including the transaction costs, at the measurement date. The current cost and historical cost represent entry values, reflecting the market prices at which the asset would be acquired. Fair value or value in use for assets reflects the exit value. The difference between historical cost and current cost is that current cost reflects the conditions at the valuation date. In the case of the current cost of an asset, observable information on the market, as well as information on the physical or moral damage of the assets, is required to adjust the current cost (IASB, 2018: Financial Reporting Conceptual Framework 6.21-22).

1.2. Accounting measurement according to FASB

The evaluation bases used in practice and presented by the FASB in the US Conceptual Framework are similar to those accepted by IASB. In addition to the valuation bases proposed by IASB, FASB also presents *the current market value.* The definitions presented by FASB differ in form from those presented by IASB, however having the same content as follows (FASB, CON 5.66-67 - Coding topics):

- *Historical cost:* the amount of cash or cash equivalents paid for the purchase of an asset or received when contracting a debt.
- *Current cost:* the amount of cash or the equivalent of cash to be paid if the same asset or equivalent asset were currently purchased.
- *Current market value:* the amount of cash or cash equivalent that could be obtained by selling an asset in orderly liquidation.
- *Net realizable value:* the non-discounted amount of cash or cash equivalent in which the conversion is expected during the business, minus the direct costs required to carry out that conversion.
- *Present (or discounted) value of cash flows:* the current or present value of expected future cash inflows for asset conversion during the business, reduced by the present value of the cash outflows required to obtain these inflows.

1.3. Accounting measurement presented in Romanian accounting regulations

The Romanian accounting regulation (Order No. 1802/2014) analyses the valuation of current assets at the following times: at the recognition date, at the annual inventory date, at the date of preparation of the financial statements and on the date of derecognition.

The initial measurement is carried out, in accordance with Romanian regulations (Order No. 1802/2014, paragraphs 75-79) on the date of entry of the goods into the entity. The entry measurement shall be carried out according to the means of acquisition of the goods, as follows:

a. *Acquisition cost* for purchased assets.
b. *Production cost*, for inventories or long-term assets produced within the entity.
c. *The amount of contribution*, determined by authorized assessors, for assets brought in as a contribution to the share capital.
d. *Fair value*, in the case of assets acquired free of charge or those representing additions to inventory.

The valuation of current assets shall be carried out either at the cost of acquisition or at the cost of production, in compliance with the depreciation recommendations (Order No. 1802/2014, paragraph 270). The assets depreciation is recorded in accordance with the principle of prudence.

The valuation at the inventory date is made on the premise that the value recorded on the acquisition date no longer corresponds to the value at the inventory date.

Romanian accounting regulations oblige entities to carry out the inventory for the valuation of assets, liabilities, and equity for the preparation of the financial statements (Order No. 1802/2014, paragraph 82), in accordance with the provisions of the Article 13 of Order No. 2844/2016. The inventory is carried out in accordance with Article 7 of Accounting Law no. 82/1991, at least once a year.

The annual inventory valuation is based on the *current value,* determined based on the condition of the goods, their usefulness, and the market price at the inventory date. In many cases, the current value is estimated based on professional judgment using the latest data such as market prices and other specific indicators.

Assets recognized in the financial statements are based on the historical cost value minuses differences between the entry value and the inventory value being recorded separately in the provision's accounts. To prevent possible excesses in the provision's recognition, the determination of values is carried out by resorting to one of the accounting principles, the principle of prudence, not allowing the overvaluation or undervaluation of assets.

Valuation of assets at the balance sheet date is based on the net book value, determined by deducting the accumulated depreciation value and the impairment losses from the assets value.

The measurement at the derecognition date is calculated at the time of discharge or at the time of consumption of the assets. It reflects one of the following values: the entry value, the revaluation value in the case of fixed assets that have been revalued, fair value in the case of short-term securities which are accepted on a regulated market for trading purposes. With the derecognition of assets, the related impairments and losses of value are recorded in the profit and loss accounts (Order No. 1802/2014, paragraph 95).

The measurement of the elements included in the financial statements is carried out in accordance with generally accounting principles, the most important and decisive being:

a. *The principle of business continuity,* which can change all the valuation bases used, if the entity restricts its activity or enters the liquidation process.
b. *The principle of permanence of methods*, which obliges the consistent application of measurement bases.
c. *The principle of prudence,* to avoid undervaluation or overvaluation of financial statements elements.
d. *Principle of valuation of assets and liabilities,* distinctively.
e. *Recording and presentation of the financial statement's elements considering the economic background of the transaction.*
f. *Principle of valuation of elements at acquisition cost or at production cost*.

Ristea (2005: 37) states that "*no basis for evaluation has a general validity and is not fully satisfactory"*.

2. The concept of cost recoverability and the decision to invest

The recovery of the historical cost is based on two economic aspects: the concept of invested capital recovery and the accounting policies regarding the measurement of the financial statements elements. Thus, the historical cost recoverability became a process that puts both management, administrators, and accountants of the entity in difficulty.

The invested capital recovery of is the key to the management process. Management aims to recover the invested capital and make the profit as planned. Any investment is based on the cost recovery decision, which cannot be achieved without a proper measurement of the elements involved. Any investment is undertaken by the management of the entity to recover the resources committed, plus a reward for the achievement of the investment. The activity becomes profitable when the revenue generated is higher than the associated costs, and especially if the cash flows generated by cash inflows and outflows are positive.

Asset measurement is carried out differently for each element, such as intangible assets, property, plant and equipment, inventories, receivables, cash and cash equivalents, either at initial recognition of the assets or subsequently. Thus, the entity is described in two aspects: the value of the investment, by quantifying the entry costs of the assets, and, on the other hand, in consideration, the financing of commitments: liabilities and equity.

The measurement of the elements raises problems since the entry cost with which the asset is initially recognized is not maintained until the derecognition data, varying according to several factors, such as moral or physical depreciation of the goods, the change in market prices for the same products, the variation in the costs included in the composition of the assets, such as those related to their completion or sale.

Determining the entry cost of assets is the monetary quantification of the resources of the entity held for a given plan. The capital invested by shareholders and held within the entity as available in RON or foreign currency representing a form of financial resource. Cash is valued at the recognition date at an initial cost. This initial cost will be recovered based on the entity's ability to recover at least the amount of money through subsequent investments.

The management of the entity is always interested in obtaining liquidity. Accounting policies on treasury elements are based on a single basis, namely the ongoing measurement of the current and future entity's capacity to pay its obligations to third parties, employees, but especially to shareholders. The budgets drawn up by the entity's management are based on the analysis of the relationship between liquidity, between income and expenditure, changes in inventory and receivables, respectively debts, repayment of loans, payment of dividends, making investments, etc.

Accounting estimation is a fundamental part of the accounting measurement, as stated in IAS 8 "Accounting Policies, Changes in Accounting Estimates and Errors". Accounting estimates represents accounting mechanisms necessary for assessing the elements included in the financial statements. Where the measurement of an element of the financial statements cannot be determined accurately due to different uncertainties, the management of the entity estimates the values using the most recent and available information. Accounting estimates represents an important part for the preparation of the financial statements. Accounting estimates often involve very complex calculations, which only specialists in certain fields can perform. The aim is to present assets or liabilities at values that are, similarly, as possible, with the recoverable cost from the future, when they cannot be accurately assessed at present. The accounting skill in measurement process is to bring the value of an estimate closer to the actual value.

Investment planning is based on the accounting mechanisms of the assets to estimate the recoverability of the cost of the investment. During periods of price reduction, or when technological changes occur, i.e., when market demand decreases, the necessity of the evaluation became essential in the investment process.

3. Empirical study

"A financial concept of capital is adopted by most entities in preparing their financial statements. Under a financial concept of capital, such as invested money or invested purchasing power, capital is synonymous with the net assets or equity of the entity. Under a physical concept of capital, such as operating capability, capital is regarded as the productive capacity of the entity based on, for example, units of output per day" (IASB, 2010: Financial Reporting Conceptual Framework, 4.57).

We sought to find out the importance given to the contribution of long-term assets and current assets in increasing the net assets of economic entities. What leads more to the increase of the global value of the entities? Which of the property, plant and equipment, intangible assets or investments in complex and advanced technological equipment generate a higher market value? Or if the increase in current assets generates an increase in the net assets of the entities by increasing the values of inventories at the date of the financial statements, holding significant receivables or treasury elements?

What is the contribution of each asset in the evolution of the net assets value of the entity, so that the external investor makes the decision to invest in the entity? How the assets hold by the entity can affect and determine decisively net assets evolution in time?

Searching for the answers to these questions was part of the empirical research. The competitive advantage of an entity compared with his market competitors is significantly established by the nature of the assets and their intrinsic characteristics, but by the management of the entity ability to recover their entry cost, the historical cost, with minimal losses, and to realize profit. The management of the entity is interested in the long-term economic benefits generated by the exploitation of the property, plant and equipment and intangible resources, but also in the short term generated by current assets. We can also say that the competitive advantage of an entity compared to its competitors, is also determined by the management skills to choose the best available measurement model.

The main objective of our research is focused on discovering relevant scientific arguments to confirm the importance of the accounting policies regarding the recoverability of the historical cost in case of long-term assets and current assets in relation to the net assets, ways to establish correlations and the implications for the assets measurement at the level of Romanian entities. We based our study on the information extracted from the financial statements issued within the period of 2015 – 2019 for three major Romanian entities, with various fields of activity, such as: oil extraction (extractive industry), pipeline transport (industry of production and supply of electricity and heat, gas, hot water, and air conditioning), and transport of passengers (transport and storage industry). These are OMV Petrom SA, SNTGN Transgaz SA and Metrorex SA.

As management of the entities stated, the financial statements analyzed were prepared based on the historical cost principle, less in the case of financial assets held for sale (OMV Petrom SA and SNTGN Transgaz SA), or in the case of the revalued fixed assets (Metrorex SA) presented at fair value.

The individual financial statements for the periods January 1, 2015 - December 31, 2019, prepared and published by the selected entities were prepared in accordance with IFRS, adopted by the European Union (OMV Petrom SA and SNTGN Transgaz SA, Metrorex SA), respectively in accordance with OMFP no. 1802/2014 (Metrorex SA).

The financial statements of OMV Petrom SA and SNTGN Transgaz SA related to the financial year ended on December 31, 2015, were prepared in compliance with Order no. 1286/2012. For subsequent periods, January 1, 2016 - December 31, 2019, the financial statements have been prepared in accordance with the provisions of OMFP no. 2844/2016.

In preparation of the empirical study, we considered that the information presented in the financial selected used are correct and complete and that entity management have provided complete, important, and relevant data and information regarding the activity of the entities.

OMV Petrom SA had a net asset increase in all years analyzed (2015-2016) from 25.091 mil. RON in 2015 year to 32.351 mil. RON in 2019 year.

Figure no. 1: Net assets of OMV Petrom SA (figures presented in million RON)

Description/ Year	2015	2016	2017	2018	2019
PPE and intangible assets	27,087	26,200	25,103	24,676	25,594
Other long-term assets	9,413	9,412	8,243	8,867	9,132
Total long-term asses	**36,500**	**35,612**	**33,346**	**33,543**	**34,726**
Inventories	1,557	1,508	1,613	1,683	1,952
Trade receivables	1,216	1,393	1,448	2,027	1,857
Cash and cash equivalents	666	1,854	3,780	4,901	6,795
Other short-term assets	847	735	838	732	842
Total short-term assets	**4,286**	**5,490**	**7,679**	**9,343**	**11,447**
Assets held for sale	**109**	**260**	**0**	**128**	**217**
Total assets	**40,894**	**41,363**	**41,025**	**43,013**	**46,391**
Long term debts	11,460	11,399	8,333	6,689	7,879
Debts held for sale	4,343	3,837	5,132	5,908	5,937
Short term debts	0	126	0	103	224
Total debts	**15,803**	**15,362**	**13,465**	**12,700**	**14,040**
Net assets	**25,091**	**26,001**	**27,560**	**30,314**	**32,351**

The higher value of net assets (25,091 mil. RON in 2015 year up to 32,351 mil. RON in 2019 year) is influenced firstly by the property, plant and equipment and intangible assets amounts (24,676 mil. RON in 2018 year; 27,087 mil. RON in 2015 year), other long-term assets (8,243 mil. RON up to 9,413 mil. RON in 2015 year) and inventories figures and cash and cash equivalents.

Figure no. 2: Net assets evolution in the period 2016 – 2019 (OMV Petrom SA)

Description/ Year	2016	2017	2018	2019
PPE and intangible assets	-3.28%	-4.19%	-1.70%	3.72%
Other long-term assets	-0.01%	-12.42%	7.57%	2.99%
Total long-term asses	**-2.43%**	**-6.36%**	**0.59%**	**3.53%**

Description/ Year	2016	2017	2018	2019
Inventories	-3.12%	6.97%	4.33%	15.98%
Trade receivables	14.56%	3.93%	39.97%	-8.35%
Cash and cash equivalents	178.25%	103.92%	29.66%	38.64%
Other short-term assets	-13.18%	13.98%	-12.67%	15.12%
Total short-term assets	**28.11%**	**39.87%**	**21.66%**	**22.53%**
Assets held for sale	**139.75%**	**-100.00%**	**100.00%**	**69.81%**
Total assets	**1.14%**	**-0.82%**	**4.85%**	**7.85%**
Long term debts	-0.53%	-26.89%	-19.73%	17.79%
Debts held for sale	-11.66%	33.75%	15.12%	0.50%
Short term debts	100.00%	-100.00%	100.00%	117.11%
Total debts	**-2.79%**	**-12.35%**	**-5.69%**	**10.55%**
Net assets	**3.63%**	**6.00%**	**9.99%**	**6.72%**

The net assets of OMV Petrom SA increases with 3.63% in 2016 year, compared with 2015 figures, up to 9.99% in 2018 compared with 2017 year figures, mainly due to current assets increases (yearly increase, from a minim of 21.66% in 2018 year to a maxim increase of 39.87% recorded in 2017 year). Inventories and cash and cash equivalents had a direct influence on net assets positive evolution in all analyzed years, and trade receivables in the last two years (2018 – 2019). Cash and cash equivalents had the most significant direct effect (178.25% increase in 2016 year and 103.92% increase in 2017 year) on the net assets increase. According to financial statements of OMV Petrom SA, cash and cash equivalents includes deposits and investments with a high degree of liquidity, with initial maturities of less than three months.

However, the fixed assets recorded a slowly decrease in the years 2016 – 2018 and only in 2019 years increased with 3.72%, influencing slowly the net assets evolution.

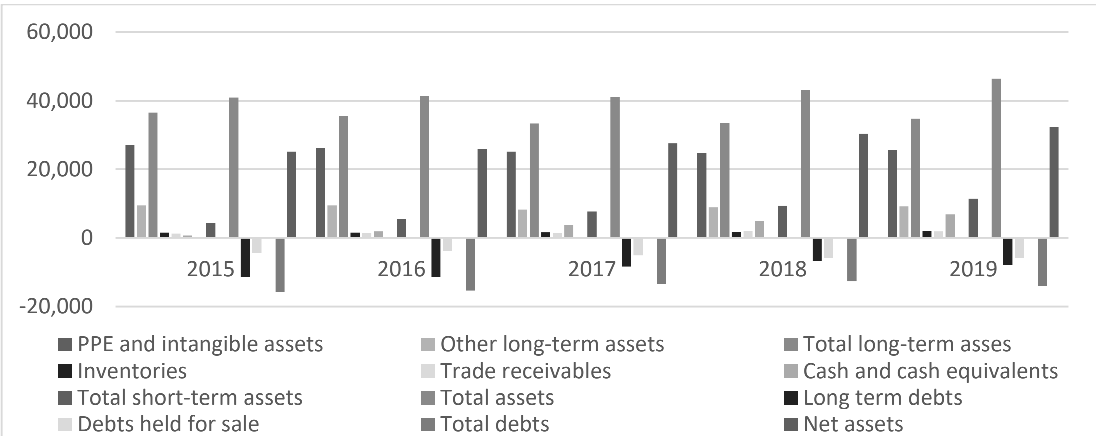


Figure no. 3: Net assets evolution during the period 2015 – 2019 (OMV Petrom SA)

Property, plant and equipment and intangible assets represented approximately 55.17% of total assets, other long-term assets represent 19.69%, while cash and cash equivalents was 14.65%.

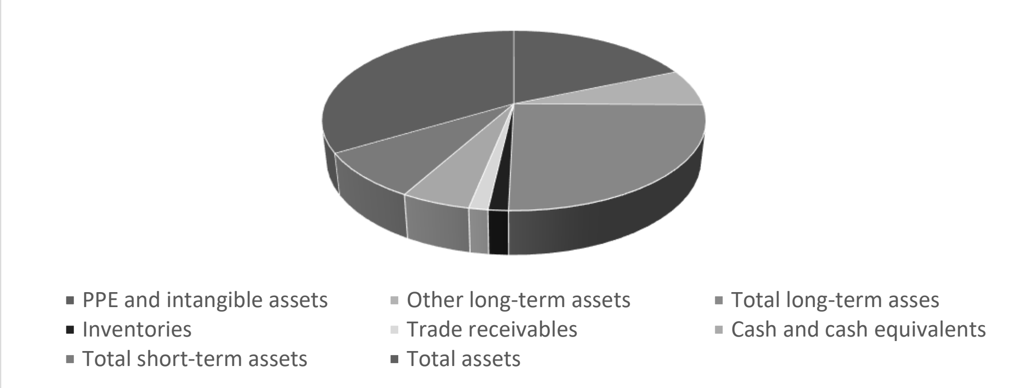


Figure no. 4: Total assets composition for the year ended 2019 (OMV Petrom SA)

According to the financial statements of OMV Petrom SA, the intangible and tangible fixed assets are recognized at acquisition cost or construction cost and are presented net of accumulated depreciation and accumulated impairment losses. The cost of property, plant and equipment purchased is the net cash price and cash equivalents paid for the acquisition of those assets, as well as the amount of other directly attributable costs bringing the assets to the location and condition necessary for them to operate in the desired manner. Cost of the fixed assets produced within the entity assets include wage costs, materials, indirect production costs and other costs directly attributable to bringing the assets to their current location and condition.

SNTGN Transgaz SA recorded increase of net assets only in 2016 year (7.52%) and 2019 year (1.86%), while in 2017 and 2018 recorded a slowly decrease (3.04% and 0.23%).

Figure no. 5: Net assets of SNTGN Transgaz SA (figures presented in million RON)

Description/ Year	**2015**	**2016**	**2017**	**2018**	**2019**
Property, plant and equipment	628	588	559	513	476
Rights to use leased assets	0	0	0	0	9
Intangible assets	2,607	2,583	2,491	2,302	3,059
Financial assets	0	0	0	46	216
Trade receivables	580	626	660	630	724
Total long-term assets	**3,814**	**3,798**	**3,709**	**3,490**	**4,484**
Inventories	74	84	82	255	488
Trade receivables	363	523	379	541	486
Cash and cash equivalents	701	949	1,062	709	311
Short term assets	**1,137**	**1,556**	**1,524**	**1,505**	**1,285**
Total assets	**4,951**	**5,354**	**5,233**	**4,996**	**5,769**
Long term debts	1,105	1,211	1,239	864	1,490
Short term debts	277	305	274	419	497
Total debts	**1,382**	**1,517**	**1,512**	**1,283**	**1,987**
Net assets	**3,569**	**3,838**	**3,721**	**3,713**	**3,782**

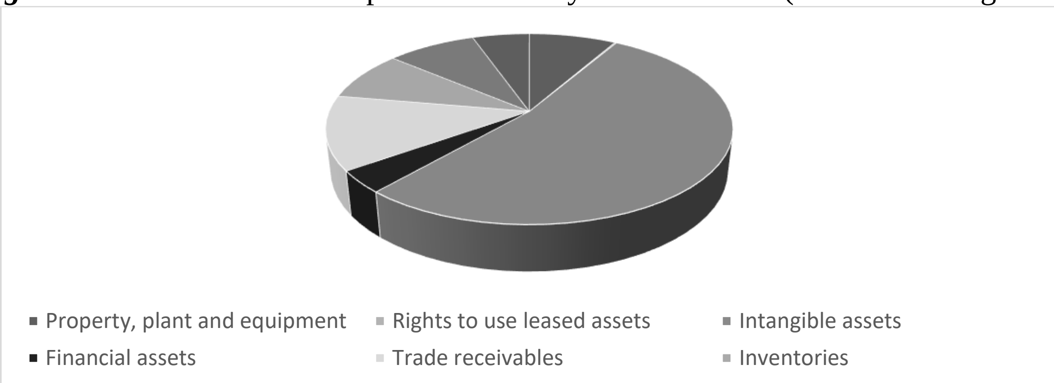
The increase of net assets for 2016 year (7.52%) was a result of increase in cash and cash equivalents (35.46% representing 248 mil. RON) compared to 2015 year, and the increase in trade receivables with 44.4% (increase with 161 mil. RON). The increase of the net assets for 2019 year was a result of increase in intangible assets, which increased with 32.88% (increase with 756.7 mil. RON) compared to previous year’s figures.

Figure no. 6: SNTGN Transgaz SA- Net assets evolution in the period 2016 – 2019

Description/ Year	2016	2017	2018	2019
Property, plant and equipment	-6.32%	-5.02%	-8.11%	-7.18%
Intangible assets	-0.89%	-3.60%	-7.58%	32.88%
Financial assets			19510.48%	373.43%
Trade receivables	8.05%	5.37%	-4.59%	16.38%
Total long-term assets	**-0.42%**	**-2.33%**	**-5.90%**	**28.47%**
Inventories	13.14%	-1.94%	210.92%	91.20%
Trade receivables	44.40%	-27.51%	42.68%	-10.26%
Cash and cash equivalents	35.46%	11.91%	-33.28%	-56.10%
Short term assets	**36.86%**	**-2.09%**	**-1.21%**	**-14.64%**
Total assets	**8.14%**	**-2.26%**	**-4.54%**	**15.48%**
Long term debts	9.64%	2.24%	-30.22%	72.37%
Short term debts	10.10%	-10.39%	53.06%	18.78%
Total debts	**9.73%**	**-0.30%**	**-15.15%**	**54.88%**
Net assets	**7.52%**	**-3.04%**	**-0.23%**	**1.86%**

Considering the financial statements for the year ended December 31, 2019, the net assets high value is directly influenced by the intangible assets 53.02% (3,059 mil. RON) and long-term trade receivables 12.70% (733 mil. RON). Intangible assets are not as easily recognized and identified as tangible assets.

Figure no. 7: Total assets composition for the year ended 2019 (SNTGN Transgaz SA)



Metrorex SA presented net asset increases in all analyzed years. The increase on net assets with 15.45% in 2016 (from 3,705 mil. RON in 2015 year to 4,277 mil. RON in 2016 year) and 14.64% in 2017 (4,904 mil. RON in 2017 year) is due to increase in property, plant, and equipment investments elements. The plant and equipment major resources are represented by technical, transportation vehicles used by the entity and fixed assets in progress.

Figure no. 8: Net assets of Metrorex SA (figures presented in million RON)

Descriptions/ Year	2015	2016	2017	2018	2019
Intangible assets	12	7	2	2,568	2,567
Property, plant and equipment	3,842	4,277	4,908	5,116	5,214
Financial assets	0	0	0	0	0
Total long-term assets	**3,854**	**4,283**	**4,910**	**7,684**	**7,781**

Descriptions/ Year	2015	2016	2017	2018	2019
Total short - term assets	**193**	**215**	**234**	**230**	**164**
Total assets	**4,047**	**4,498**	**5,144**	**7,915**	**7,945**
Long term debts	35	26	24	2,586	2,589
Short term debts	308	195	216	358	232
Total debts	**342**	**221**	**240**	**2,944**	**2,821**
Net assets	**3,705**	**4,277**	**4,904**	**4,971**	**5,124**

Even if the other assets components (i.e., inventories, cash and cash receivables or trade receivables) increase also, the significant positive evolution of net assets was mainly due to property plant and equipment (11.31% in 2016 and 14.76% in 2017).

Figure no. 9: Metrorex SA - Net assets evolution in the period 2016 – 2019

Descriptions/ Year	2016	2017	2018	2019
Intangible assets	-43.31%	-72.43%	140250.09%	-0.02%
Property, plant and equipment	11.31%	14.76%	4.25%	1.91%
Financial assets	-22.61%	0.00%	6.57%	0.00%
Total long-term assets	**11.14%**	**14.63%**	**56.50%**	**1.26%**
Total short - term assets	**11.26%**	**8.75%**	**-1.54%**	**-28.87%**
Total assets	**11.13%**	**14.36%**	**53.86%**	**0.38%**
Long term debts	-25.26%	-8.63%	10794.69%	0.11%
Short term debts	-36.76%	11.21%	65.40%	-35.26%
Total debts	**-35.60%**	**8.87%**	**1126.09%**	**-4.19%**
Net assets	**15.45%**	**14.64%**	**1.36%**	**3.09%**

In 2019 year, total assets amounts are influenced by the property, plant and equipment with 65.63% (5,214 mil. RON) and intangible assets with 32.31% (2,567 mil. RON).

As stated in the financial statement's property, plant and equipment elements are measured at historical cost, which represents acquisition cost. The acquisition cost comprises in acquisition price together with import duties, transportation costs, handling, and other cost attributable directly to the acquisition.

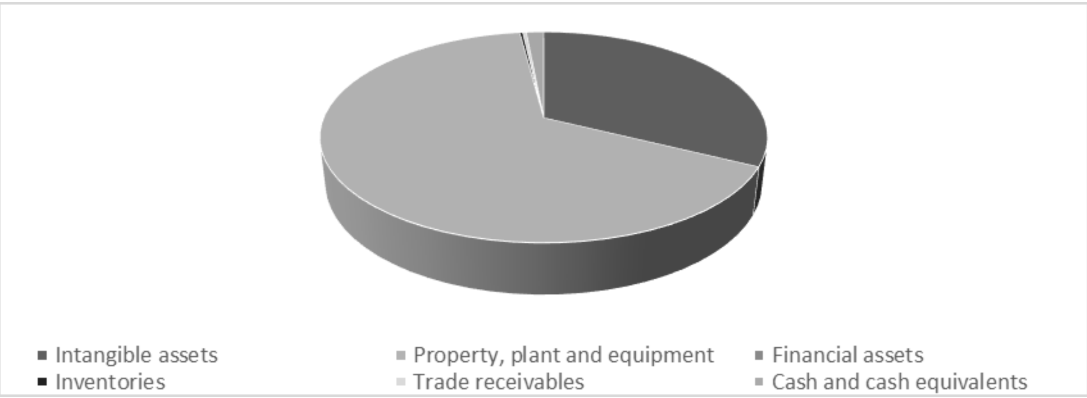


Figure no. 10: Total assets composition for the year ended 2019 (Metrorex SA)

According to the financial statements published for the years ended December 31, 2015 until December 31, 2015, in case of inventories, the inventories are valued at the entry cost (historical cost), established at the recognition date as follows:

- acquisition cost for purchased stocks (Metrorex SA).
- the cost of production for stocks obtained from own production, which includes direct costs (materials, dismantling and labor), as well as the percentage corresponding to direct costs (Metrorex SA).
- fair value for inventories obtained free of charge or in addition to inventory (Metrorex SA).
- the cost of production of crude oil, natural gas and petroleum products from refining established on a weighted average basis, including costs incurred in carrying out normal business, including indirect costs such as depreciation and amortization, or fixed costs determined by normal production capacity.

An entity's competitive advantage over market competitors is significantly determined by the nature and intrinsic characteristics of assets components, and by the entity's ability to recover their entry cost, with minimal losses, and to make a profit. In other words, both the entity's management and investors are interested in the short-term economic benefits generated by the entity's current activity.

4. Conclusions

In conclusion, this article has theoretical and empirical approaches to show to what extent short-term assets and long-term assets can contribute to creating a competitive advantage by generating economic benefits and a sustainable competitive position on the market.

Historical cost has the most advantages, being also the most user-friendly, verifiable, and least expensive rating basis (IASB: 2018, Financial Reporting Conceptual Framework, 6.69). All measurement bases analyzed in the paper are based on the recoverability of the cost.

Accounting standards are based on recovery, and this prevents and excludes loss of any kind. Any investment shall have as its starting point the recovery of the initial cost and the realization of the profit.

Production and consumption are indispensable elements of investment. The economic entity takes over the function of the investment, constantly looking for a way to recover the cost of entry of the invested resources. Thus, the investment process is subordinated to the recovery process of the historical cost of resources. The entry cost recovery process is subject to the accounting evaluation process.

The meeting of supply and demand, production with consumption, shows the sociological nature of the investment. The economic entity takes the decision to produce, and on the opposite side it is the final consumer taking over the consumption decision.

Accounting standards are based on a fundamental axiom of recovery because any recovery anticipates and excludes losses of any kind. This axiom is valid in any investment model and in any accounting measurement model. Investment decisions are based on the recovery of the historical cost, and, in the absence of historical cost recoverability, any investments or economic transactions is not considered. In conclusion, the historical cost recoverability becomes the foundation of the market economy.

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Towards a Criticism of Profit and Loss Account

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Abstract: *This paper contributes to the criticism of Profit and Loss Account, which is considered by IASB the primary source of information about an entity's financial performance. The paper is straightforward, presents some examples from public companies, and argues that the Profit and Loss Account does not provide the information needed by stakeholders. It has redundant and lacks relevant information, it does not provide a faithful representation of what it purports to represent, and information from the statement can not be compared. Due to technology advancement and near universal adoption of automation in the next period, we propose a single statement of Profit and Loss Account, which could satisfy all stakeholder's needs.*

Keywords: *Profit and loss account, performance, IAS 1, IV Directive.*

1. Introduction

Until 19th of August 2019, the Principles of Corporate Governance for America's leading companies endorsed principles of shareholder primacy, meaning that the primary goal of those companies was to serve shareholders. After this date, a new statement redefined the purpose of the corporations, one that meets the needs of all stakeholders, serving the whole society (Business Roundtable, 2019). But not only America's leading companies shifted their vision. It is a wide and strong trend everywhere for a "sustainable business", with lots of books, articles and promises for sustainability. But why did they change their vision? Maybe they understood that organizations are not only responsible to increase shareholders profits, as Milton Friedman declared (Friedman, 1970). Maybe they realised that organizations could be an example for society as a whole to improve the world, and they could draw attention to important issues of humanity and inspire the next generation, starting to solve issues related to race relations, inequality, the environment, education and other areas of interest to humanity (Pantazi, 2020). According to a McKinsey paper, leading companies pursue sustainability because it has a material financial impact (Bonini and Swartz, 2014). As simple as that! And this is great, because one of the main reasons why companies "for profit" are created is to make profit and making a profit while taking care of environment and people is ideal. Alex Edmans believes that companies failed to recognise their responsibility to generate profits, and they should pursue social value, but in a profitable way (Edmans, 2020). And when they generate profits, they struggle to pay as little as possible. For example, between 2003 and 2014, the European Commission found, Apple only paid an effective corporate tax rate that declined from 1% in 2003 to 0.005% in 2014 on the profits of Apple Sales International (https://ec.europa.eu/, 2016). Companies should be proud paying taxes, because taxes play a key role in generating public revenues for countries in order to finance

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investments in human capital, infrastructure and all kind of services for citizens and business.

If obtaining profits is business's responsibility and one of their crucial goals, then the responsibilities for the other elements of sustainability, planet and people, or environment and social, are on not only companies' side, but also the governments, investors and citizens should be involved. Governments should create a tax system that is fair and equitable, investors should ask from companies' information related to sustainability, and citizens should penalise companies that do not bring value to society, by refusing to buy their products.

Economists could be of a great help for society. Kate Raworth believes that economic theory will play a decisive role in addressing the great challenges of the moment, challenges related to inequity, poverty, the environment, and economic science is the mother tongue of politics and the one that can shape society (Raworth, 2017).

Accountants could be even more helpful. They are not only the guarantor of ethical practices in an organization, but they could reveal the "true image" of an organization.

2. Profit and Loss Account

2.1. Literature review

The scope of the Financial Statements is to provide a "true and fair view" of the financial performance and the position of the entity.

The Profit and Loss Account is considered by IASB the primary source of information about an entity's financial performance. Financial information are useful, according to the IASB conceptual framework (IASB, 2015), if they are both relevant and faithfully represent what they purport to represent, and also if they are comparable, verifiable, timeless and understandable.

It simply means that after we study the Profit and Loss Account of companies, we should be able to compare them. However, we cannot do it, because, according to IAS 1, the Profit and Loss Account can be presented in two ways, with the grouping of expenses by nature and by economic destination. We argue that we need only one format, one that satisfy the needs of all stakeholders. We propose in this paper such a format.

It also means that the Profit and Loss Account should be relevant. How relevant is "Stock Variation" account? Not that it is not relevant, but it is misleading, letting users to believe that a difference in some of company's stocks are revenues. We will see in the practice case (2.2. A case from practice – "the French model") how this concept is understood by companies.

Romanian Profit and Loss Account, a list format with the presentation of operating expenses by their economic nature, has been taken over almost entirely according to the 4th European Directive. Can we find the most important indicator of financial performance, gross margin? No, we are not able to find out whether a company is selling a product or service at a value above the cost of production. This reporting model failed to comply with the essential requirements from the IFRS Conceptual Framework. But the IV Directive requires that companies which chose the model "by economic nature", named also "French model", to present in the explicative notes an analysis of the operating result with the classification of the operating expenses by destination, named also "the Anglo-Saxon model". We look at the information presented in the note "Analysis of operating income", to calculate the most important indicator of financial performance, but we find that the indicator "Cost of goods sold and services rendered" is wrong! Professor Iulia Jianu explains that the indicator "Cost of goods sold and services rendered" should cover only expenditure on goods sold and not all production costs related to goods obtained during the period (Jianu, 2007). Jianu also adds that the Note's model is not in line with the requirements of IAS 1 for the presentation of operating expenses by the company's functions. To overcome this flaw, a correction account is used, an account that is presented in the revenue section, called "Stock Variation", now called "Revenues associated to the production cost", but it has the same functionalities. This account only annoys information users and even accounting professionals. "The profit and loss account in its format as list, with the grouping of expenses by nature, presents the account "Stock Variation" at the revenue section, with the plus sign in the case of an increase of stocks, and with the minus sign in the case of a decrease, and not at the expenses section, as provided for in IAS 1" (Jianu, 2007). Other authors also believe that this presentation is questionable (Malciu and Feleagă, 2005), while Man and Gădău consider that this account should be only a correction of production expenditure, because it basically reflects production costs, as an expression of the benefits consumed and not of the benefits obtained (Man and Gădău, 2011).

Due to this reason, we have the strange situation in case of companies that did not realize any sales, but they report in their financials revenues. Our view is that this account should not appear on revenue side, regardless of its final balance, for the simple reason that it does not meet any conditions to be recognized as income. The solution is one that is based on a combination of the two presentation methods, so that we have a single Profit and Loss Account form that satisfies all users.

We have cases when companies report more revenues that they really realized, as we will see in an example below. Also, the so much criticized Fair Value Accounting leads to recognition of revenues that are unrealized. It affects especially the gross margin of companies that apply IAS 41 Agriculture. Appling IAS 41 leads to the recognition of a part of revenue during the production process, when milk and other agricultural products are obtained. When the finished goods are sold, the total revenue is recognized according to IFRS 15 Revenue from contracts with customers, so that in the end, reported revenue is higher than the real one and gross margin is mistaken.

Professor Charles Lee believes that "fair-value accounting goes against the fundamental purpose of accounting. It would actually inject more uncertainty into financial reporting and make life harder for shareholders. It might even create new opportunities for companies to cook their books" (Lee, 2014).

2.2. A case from practice – "The French model"

Below, we have a projection of the Profit and Loss Account- Table 1. Profit and Loss Account- assumed and published by the company that owns the brand "Lăptăria cu caimac", a public company that wants to list on the Bucharest Stock Exchange, through BT Capital Partners, to attract funds from the capital market through a bond issue.

A projection of the Profit and Loss Account was published through the Stock Exchange. We have noted that the "Stock Variation" account appears on revenue side, which distorts the most important indicator of economic performance, gross margin, as we emphasized above.

Table 1. **Profit and Loss Account**

P&L Items	Amounts in RON					
	2020E	2021F	2022F	2023F	2024F	2025F
Total revenue	**69,928,873**	**86,035,213**	**104,868,825**	**119,585,046**	**130,543,020**	**141,553,326**
Sales	**46,163,674**	**59,526,000**	**73,835,188**	**85,247,200**	**93,968,124**	**102,850,192**
Stock variation	16,500,000	20,680,755	24,913,756	27,911,970	29,827,727	31,618,606
Other revenue	7,265,199	5,828,459	6,119,882	6,425,876	6,747,169	7,084,528
Cost of goods sold	(38,460,880)	(40,866,726)	(47,190,971)	(50,823,644)	(52,217,208)	(56,621,331)
Gross profit	**31,467,993**	**45,168,487**	**57,677,854**	**68,761,401**	**78,325,812**	**84,931,996**
Employee expenses	(9,568,527)	(11,372,878)	(13,306,267)	(14,146,040)	(15,031,705)	(15,965,590)
Rental expenses	(201,216)	(201,216)	(150,000)	(150,000)	(150,000)	(150,000)
Maintenance and repair expenses	(1,606,655)	(1,686,988)	(1,771,338)	(1,948,471)	(2,143,318)	(2,250,484)
Marketing expenses	(572,894)	(1,190,520)	(1,439,786)	(1,619,697)	(1,738,410)	(1,851,303)
Transport of goods expenses	(3,085,948)	(3,571,560)	(4,245,523)	(4,688,596)	(4,933,326)	(5,142,510)
Third party expenses	(5,000,000)	(5,952,600)	(6,645,167)	(6,819,776)	(6,577,769)	(6,171,012)
Other operating expenses	(2,308,184)	(2,619,144)	(3,174,913)	(3,580,382)	(3,852,693)	(4,114,008)
Ebitda	**9,124,569**	**18,573,581**	**26,944,860**	**35,808,439**	**43,898,590**	**49,287,089**
Depreciation and amortisation expenses	(8,800,000)	(7,200,000)	(7,600,000)	(7,800,000)	(7,900,000)	(8,000,000)
Operating profit	**324,569**	**11,373,581**	**19,344,860**	**28,008,439**	**35,998,590**	**41,287,089**
Interest expenses	(3,100,000)	(3,567,813)	(3,467,813)	(3,467,813)	(3,367,813)	(3,367,813)
Other financial expenses	0	0	0	0	0	0
Corporate tax	0	0	0	(1,227,031)	(1,631,539)	(1,895,964)
Net profit	**(2,775,431)**	**7,805,769**	**15,877,048**	**23,313,595**	**30,999,239**	**36,023,313**

(*Source:* Agroserv Măriuța SA- Public Offer)

There are many inconsistences:

1. Gross profit was added to the report due to the need to inform users, but it is artificially increased by including the "Stock variation" account in revenue part. There is no doubt that the gross margin is misrepresented, and this is due to the structure imposed by the accounting normalizers. This structure, which respects the 4th Directive, has confused even the accounting professionals who drew up the situation.
2. The account "Cost of goods sold" includes personnel costs, materials, services, depreciations, but we also have all company costs presented. In the standardized format required by the normalizers, we do not have the account "Cost of goods and services produced" but only "Cost of goods sold". Here the company tried

to present “Gross margin”, an indicator that does not exist in the Profit and Loss Account format in this format (Pantazi, 2021).

One of the fundamental characteristics of financial information is the relevance, according to the IASB’s General Conceptual Framework (IASB, 2015). How relevant is “Stock variation” for users? That not only it is not relevant for users, but it is also strongly challenged by academia and exceedingly difficult to be used by professionals. Let us just think about how difficult, we think it is impossible, to estimate “Stock variation” over three or five years. If we add the estimate of revenues related to ongoing services as well as income from the production of fixed assets, we conclude that any reasonable estimate based on the structure of the Profit and Loss Account required by the European Directive is impossible to be realized.

As a result, our proposal is to change the structure of the Profit and Loss Account by removing from the declared income the following accounts: changes in stocks, revenues related to the costs of services, as well as income from the production of fixed assets, and any revenue related to Fair Value Accounting.

2.3. “The Anglo-Saxon model”

After a brief analysis of the “Anglo-Saxon model”, expenses recognized by function, we will propose a model to cover the shortcomings of the two models.

Table 2. Apple Inc. - Profit and Loss Account, is the model that requires the grouping of expenses by economic destination, reporting expenses by company functions. The model is from Apple’s public site, so the format is in line with the American reference.

In this case, the company’s performance is very well expressed. However, this model does not allow the detailed analysis of expenditure as in case of the model “by nature”, which provides an analysis of the structure and types of expenditure incurred.

In this model, none of capitalized expenses are presented in this statement, which means the lack of relevant information. If, for example, all of research and development expenses would have been capitalized, recognized according to IAS 38 Intangible Assets, then the Profit and Loss Account would have shown zero effort from the company for research and development. However, such information could be found in the notes to the Financial Statements. Lee and Tweedie believe that the large amount of information presented in the notes to the Financial Statements may cause the loss of the qualitative characteristics of the relevance of the accounting information (Lee and Tweedie, 1975).

Table 2. **Apple Inc. - Profit and Loss Account**

Consolidated Statements of Operations (in millions $)	**September 28, 2019**	**September 28, 2018**	**September 28, 2017**
Net Sales:			
Products	213,883	225,847	196,534
Services	46,291	39,748	32,700
Total net sales	**260,174**	**265,595**	**229,234**
Cost of sales:			

Consolidated Statements of Operations (in millions $)	September 28, 2019	September 28, 2018	September 28, 2017
Products	144,996	148,164	126,337
Services	16,786	15,592	14,711
Total cost of sales	**161,782**	**163,756**	**141,048**
Gross margin	**98,392**	**101,839**	**88,186**
Operating expenses:			
Research and development	16,217	14,236	11,581
Selling, general and administrative expenses	18,245	16,705	15,261
Total operating expenses	**34,462**	**30,941**	**26,842**
Operating income	63,930	70,898	61,344
Other income/(expense), net	1,807	2,005	2,745
Income before provision for income taxes	**65,737**	**72,903**	**64,089**
Provision for income taxes	10,481	13,372	15,738
Net income	**55,256**	**59,531**	**48,351**

(*Source:* www.apple.com)

Margins for the sales of goods and services are clearly presented, allowing users to form an opinion about the company's economic performance. The company's functions are well delineated, but this model does not provide the possibility to analyze the nature of the expenses.

Can we compare the two companies? How about comparing thousands of companies in an instant in today's dynamic and demanding environment? No, it is not possible, unless we change the present Financial Statements. According to Deloitte's 2017 RPA survey, market trending is indicating near-universal adoption of Robotic Process Automation (RPA) in the next five years (Wright *et al*., 2017). We should design the Financial Statements so that users could easily automatize the process of assessment.

2.3. Proposed model

Below, we have the proposed Profit and Loss Account, composed of Table 3. Proposed Profit and Loss Account and Table 4. Value of Capitalized Expenses.

Table 3. Proposed Profit and Loss Account

Indicators	Current year	Previous year
Revenue from net sales:		
- Goods	1,500,000	1,200,000
- Services	1,000,000	800,000
Total - net revenue	**2,500,000**	**2,000,000**
Cost of sales:		
- Goods	950,000	790,000
- Services	450,000	300,000
Total - cost of sales	**1,400,000**	**1,090,000**
Gross margin	**1,100,000**	**910,000**
Direct sales expenses:		

Indicators	Current year	Previous year
- Salary expenses	140,000	112,000
- Material expenses	90,000	72,000
- Depreciation and amortization expenses	38,000	30,400
- Third party expenses	29,000	23,200
Total direct sales expenses	**297,000**	**237,600**
Research and development expenses:		
- Salary expenses	30,000	24,000
- Material expenses	9,500	7,600
- Depreciation and amortization expenses	2,300	1,840
- Third party expenses	1,900	1,520
Total research and development expenses	**43,700**	**34,960**
General, administrative and selling expenses:		
- Salary expenses	200,000	160,000
- Material expenses	30,000	24,000
- Depreciation and amortization expenses	26,000	20,800
- Third party expenses	34,000	27,200
Total general, administrative and selling expenses	**290,000**	**232,000**
Other operating income	**500,000**	**400,000**
Other operating expenses:		
- Salary expenses	2,900	2,320
- Material expenses	3,000	2,400
- Depreciation and amortization expenses	2,500	2,000
- Third party expenses	3,000	2,400
Total other operating expenses	**11,400**	**9,120**
Profit (loss) before interest and tax (EBIT)	**957,900**	**796,320**
- Revenue related to affiliated entities	150	120
- Interest income	25	20
- Interest expenses	2,000	1,600
- Other financial income and expenses, net result	900	720
Profit (loss) before tax	**955,175**	**794,140**
- Corporate tax	152,828	127,062
Net profit/(loss) of the year	**802,347**	**667,078**

Table 4. **Value of capitalized expenses**

Indicators	Current year	Previous year
Capitalized production expenses (value of production obtained):		
- Salary expenses	800,000	640,000
- Material expenses	70,000	56,000
- Depreciation and amortization expenses	350,000	280,000
- Third party expenses	250,000	200,000
- Interest expenses	45,000	36,000
Value of obtained production, expressed in effective production costs	**1,515,000**	**1,212,000**

The model of the Profit and Loss Account is proposed, together with the Value of Capitalized Expenses, the grouping of expenses by the functions of a company, but also a classification of expenses by their nature. This is useful in order to be able to calculate indicators such as the production of the year, value added, as well as the carrying out of macroeconomic analyses on the structure of Gross Domestic Product and other necessary statistics at macroeconomic level. At the same time, the form fully meets the most demanding requirements of investors. We have no doubt that such a report can be presented without much effort by any organization, and we even argue that, thanks to technology, reporting only means the automatic consolidation of data entered the system.

The advantages are huge, such as, for example, comparability in space, essential quality of information, according to the general IASB framework, and it is now possible to make real comparisons between companies. Now, investors and other stakeholders can analyze, use data in any report and compare any company.

The need for a more detailed Profit and Loss Account that meets all the needs of stakeholders is also caused by the fact that the financial statements, according to the authors of the book "The End of Accounting" (Lev and Feng, 2016), have become less useful for investor decision-making.

In an increasingly digitized world, accounting revenues and profits are virtually irrelevant, at least to digital companies, and the current system cannot detect value creation (Govindaranjan *et al*., 2018). The authors give the example of companies like Uber or Airbnb, which do not have tangible assets, cars or real estate on their balance sheets, but which are worth billions of dollars on the stock exchange, which report huge losses year after year, and yet their shares grow exponentially. Therefore, the value of a digital company cannot be tracked by looking at the figures in the balance sheet. That is why, it is of a paramount importance that Profit and Loss Account to report expenditures with research and development and other important expenses such as for brands, organizational strategy, partner and supplier networks, customer relations and social relations, computer data and software and human capital. All these essential elements are found in the Profit and Loss Account rather than in the company Balance Sheet. Many of these expenses are not capitalized, and this is a reason why there is a big difference between book value and market value in case of successful companies. Despite this situation, intangible assets already exceeded tangible assets as the main way of capital creation for U.S. companies (Enache and Srivastava, 2018).

3. Conclusions

Despite the recent efforts of the two international organizations, IASB and FASB, there are still many differences between the two systems, creating real difficulties for investors and other stakeholders to assess and compare organizations. The Profit and Loss Account should be changed so that it meets the new requirements of users. Scholars have not given sufficient attention to new technologies, that is why research is urgently needed to understand accounting in a changing digital economy (Moll and Yigitbasioglu, 2019).

Future research is needed on the effects that technology has on accounting rules and especially on reporting.

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SECTION 6

Egg before Chicken Paradigm: Testing Accounting Quality for Target Companies in M&As, by Using Circular Causalities under VAR and SEM

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Egg before Chicken Paradigm: Testing Accounting Quality for Target Companies in M&As by Using Circular Causalities under VAR and SEM

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Abstract

Research question: *At M&A level, is there a circular causality relationship between financial performance (return on equity) and the market value (price-to-book ratio) considering the influence of the return on assets and of the financial leverage?*
Idea*: Starting from the model of Beaver* et al. *(2012) and Basu's (1997) assumptions on conservatism, the paper analyses if the market dictates the accounting practices of a target company (conservatism model) or that the accounting figures influence the market (value relevance model).*
Data*: The analyzed sample is represented by the target companies involved in 5387 M&As which took place in the European Union Enlarged in 2017-2018 period of time. The financial and market data were considered for eight years (2011-2018).*
Methodology*: To test and validate our hypotheses, we use VAR and SEM.*
Findings: *The results show that the market influences the performance of the target companies. In order to assess the market-return relation in the case of the target companies, we consider a conservatism model, where targets' earnings are significantly influenced by their financial leverage, which leads us to conclude that their decision to participate in M&As is based on their financial structure. Using the value relevance model, the market reaction is dictated by the prices and the return on equity from the previous year and by the return on assets and the financial leverage from the current year.*
Contribution: *The paper identifies which of the two endogenous variables represent the causa causarum in the proposed circular causality relationship.*

Keywords: *Value relevance, conservatism, target companies, circular causalities.*

1. Introduction

Companies use mergers and acquisitions as external growth strategies, based on multiple motivations. Among the most obvious, we mention survival (suitable for companies with weak capitalization, in a defensive position or with a declining market share), diversification (applicable especially in the case of conglomerate operations or vertical mergers and acquisitions), protection (seeking a partner to counter situations such as the entry of a low-cost competitor, loss of patents or other innovations in favor of a competitor) or growth (involving companies in an offensive position, which intend to increase market share, sales or profitability). Thus, mergers and acquisitions

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(henceforth M&As) have always been associated with consolidating a company's financial position and increasing its value, in order to improve the existing state or to correct some negative outcomes for the acquirers and the targets involved. As a result, firms involved in a concentration operation should benefit operationally and financially as a result of this activity (Pathak, 2016; Shleifer and Vishny, 2003).

We notice that the literature focuses more on the outcomes of the M&As (Coccorese and Ferri, 2020; Kar *et al*., 2020; Gudmundsson *et al.*, 2017; Yang *et al*., 2018; Ma and Liu, 2017) and less on describing the companies, before the concentration, without correlating their performance with the post-M&A situation (Liu *et al*., 2021; Bionda *et al*., 2020: 289) or as a determinant for the decision to participate in concentration (Rozen-Bakher, 2018). The purpose of this paper is to analyze, from an accounting point of view, European target companies' past of financial and market activity, which led to their participation in external growth strategies.

In this study, we discuss the market-return relation for target companies involved in M&As, for the years prior the concentration. In this regard, we use price-to-book ratio (PBR) to describe the value that market participants attach to a company's equity, relative to the book value of the company. Secondly, we consider return on equity (ROE) as being significant for performance of the target companies, as a result of applying specific accounting practices, prior to M&A (Jaba *et al*., 2017). Considering the model proposed by Beaver *et al*. (2012) and Basu's (1997) evidence regarding conditional conservatism or asymmetric timeliness, we want to assess if the accounting practices influence the market value of a company or if the market dictates the accounting practices.

The sample used in the analysis is represented by the target companies which participated in 5387 M&As that took place in the European Union enlarged (28 countries) in 2017-2018 period of time. The financial data for the selected companies cover seven years, from 2012-2018.

We first use vector auto regression (VAR) to capture the relationship between return on equity (ROE) and price-to-book ratio (PBR), as they change over time. For each of the variables, we consider a one year-lag of themselves, to which we add return on assets (ROA) and financial leverage (FL). After determining the coefficients of the two VARs, we use Granger causality to determine which of the time series is forecasting the other one (Granger, 1969). The results show that the market influences the performance of the target companies, prior to M&As (ROE is influenced by PBR).

For the next section of our research, we use structural equations modeling (SEM) to represent, estimate, and test a theoretical network of linear relations between our variables (Rigdon, 1998). Using general linear models (GLM), we propose a system of simultaneous equations. For the first one, the return on equity is a function of price-to-book ratio (the market-return model). We consider this the conservatism model, starting from the research of Basu (1997), who asserted that the accounting earnings are a function of the unexpected returns, as market reactions to good or bad news. For the second one, the market reaction is a function of target company's return (the return-market model or the value relevance model, given the fact that the accounting information is influencing the market and, implicitly, the decisions made by stakeholders) and it uses the estimate of the return from the first equation, given the results of the Granger testing. The result will show that, for the target companies, in the conservatism model, their decision to participate to M&As is influenced by the financial structure, while, in the value relevance model, the market reaction is significantly influenced by both their previous experience and the financial ratios (returns and financial leverage).

The remainder of the paper is structured as follows. Section 2 is dedicated to the literature review on accounting quality in M&As, on value relevance and conservatism, which will lead to two distinct hypotheses. Section 3 presents research methodology and design. Section 4 discusses the descriptive statistics and the results of the study and the last section concludes.

2. Literature review and hypotheses development

M&As take place in a number of ways (merger, acquisition, divestiture, spin-off, split-off, or equity carve-out), each type giving an indication of the parties involved in the process, the motive behind the deal, and the expected benefits from the transaction (Verma and Rathore, 2018). The horizontal integration leads to market power or economies of scale, vertical integration involves a move up or down the supply chain, while other companies may choose a pooling of complementary resources of two or more businesses or a conglomerate M&A to acquire another company engaged in totally different line of business (Sudarsanam, 2003). The decision for either of the presented integration processes may belong to the acquirer (in the case of takeovers) (Eckbo, 2009; Shahrur, 2005) or to both companies (when there is a negotiation between the involved parties) (Weber *et al*., 2011; Ahammad *et al.*, 2016). Given the diversity and popularity of M&As as external growth strategies, the literature on the matter focused, over decades, on various issues related to the involved companies and their performance (Zollo and Meier, 2008; Campa and Hernando, 2006; Kiymaz and Baker, 2008), the vast majority of them focusing on the performance on the financial market, under the form of abnormal returns (up to 41% of the studies). On the other hand, Thanos and Papadakis (2012) bring into attention the accounting-based measures as a viable metric of M&A performance, while Zollo and Meier (2008) bring into attention the subjective performance, related to synergy realization and reaching strategic objectives. Thus, both the market and the accounting figures may be of great importance when assessing the transaction itself but also the companies involved.

Marquardt and Zur (2015) discuss the influence of target's accounting quality on the parameters of the transaction and their results show positive impact on its speed and the completion of the deal. But which are the drivers and the characteristics of the accounting quality?

According to Dechow *et al*. (2010), the quality of the firm's earnings depends on both the firm's fundamental performance and on the accounting system that measures it. Thus, the issue related to accounting quality in M&As can be also analyzed considering the accounting standards used by both acquiring and acquired companies, when considering investing in foreign markets and, implicitly, participating in cross-border M&As. Considering the premise that the use of International Financial Reporting Standard (IFRS) leads to a higher information quality (Horton *et al*., 2013; Yip and Young, 2012), Francis *et al*. (2016) asserted that the mandatory adoption of the international referential in 2005 led to an increase in M&A activity between countries which use this reporting system.

There are two antagonist concepts, proposed by IASB's Conceptual Framework for Financial Reporting, related to financial information quality: value relevance and conservatism or prudence (Deloitte, 2021). Although the last two concepts are usually interchangeable, Barker (2015) makes a distinction between them, considering that 'conservatism' refers to any method of accounting that leads to book value being less than economic value, while 'prudence' is a specific type of conservatism arising from a 'cautious' response to uncertainty. In M&A literature, the "prudence effect" also means that when uncertainty increases, the sensitivity of enterprises rises, and small changes in some factors in the market can also be sensed, such as supply and demand requirements and commodity prices (Chen *et al*. 2018, Li *et al*., 2021). Simo *et al*. (2013) note that conservatism should be viewed more as a state of mind, translated into a careful assessment of all possible uncertainties and risks, than a systematic calculation. By associating it with risk management, the pessimism resulting from the use of the conservatism tempers the optimism of managers, its purpose to maintain shareholder confidence (Diprose *et al*., 2008). As a result, studies show that earnings conservatism is more pronounced in common-law developed countries and in those applying IFRS (Lara *et al*., 2008)

Basu (1997) interprets conservatism by considering the faster reaction of earnings to bad news, compared to good news, both reflected in the stock returns, approach that will be used in this paper. We describe the reaction of accounting data provided by the company, in terms of return on equity (ROE), in sufficiently adverse circumstances dictated by the market. This is known as conditional conservatism, also discussed by Ball *et al*. (2013), Ryan (2006) and Lara *et al*. (2009), compared to unconditional one (Beaver and Ryan, 2005), which is reflected in lower book values of equity and assets. Also, Basu's paper can be considered a value relevance study because it examines the relationship between earnings (which is a product of applying specific accounting practices) and market value (reflected in the returns). Although Basu's study has had a substantial impact on the accounting research, there are also studies like the ones of Patatoukas and Thomas (2011), Dietrich *et al.* (2007) and Givoly *et al.* (2007) provide considerable evidence suggesting that the differential timeliness measure is associated with a variety of substantial biases. Despite these results, we will assume that the market affects the accounting performance and earnings, in order to describe our sample of analysis.

As we notice, the market is very important for analyzing the influence of information on the decision-making process of the stakeholders. The same author, but also Khan and Watts (2009), suggested a significant reduction in accounting conservatism, after IFRS adoption, with opposite effects on the performance reported by the companies and on the value relevance, because the timely recognition of all the events could lead to a more reliable information (Manganaris *et al*., 2015).

Brown Jr *et al*. (2006) define value relevance as the summary provided by accounting earnings about information possessed in market prices, while Karğin (2013) provide a more accurate definition. In his opinion, value relevance is being defined as the ability of information disclosed by financial statements to capture and summarize firm value on the market. In this regard, it can be used as an association between market values and accounting values (Hellström, 2006), an ability of accounting information to capture or summarize information affecting share price or stock return (Mirza *et al.*, 2019). In completion to this opinion, Barth *et al.* (2001) and (2021) assert that value relevance research is a basis for establishing that some financial accounting practices are perceived by equity investors as conservative, like the amounts relating to intangible assets, growth opportunities and alternative performance measures.

Given the importance and the influence of both conditional conservatism and value relevance in the decision-making process, we propose the following general hypothesis and the subsequent specific hypotheses to be tested and validated:

H_G: At M&A level there is a circular causality relationship between financial performance (return on equity), and market price (price-to-book ratio), as endogenous variables, considering the influence of two exogenous variables (return on assets, and financial leverage).

Hs_1: The performance of a target company, prior to M&A, is significantly influenced by the market prices.

Hs_2: The target companies' value on the market is significantly influenced by the performance reflected in the accounting information.

The main objective of our study is to identify which of the two endogenous variables (return on equity, and price-to-book ratio) represent the *causa causarum* in the circular causality relationship proposed in the study, as well as the influence of the determinant factors on them.

The hypotheses will be tested and validated using statistical software SPSS25.0 and Stata15.1.

3. Data and methodology

3.1. Target population and analyzed sample

To test and to validate the two proposed research hypotheses, the study analyses the empirical data related to 5387 M&As, for the 2011 – 2018 period of time, considering the target companies located in the European Union enlarged (28 countries). The data source was Zephyr database. The financial data used in analysis was considered for eight years, from 2011-2018, and it was collected from Orbis database.

3.2. The description of the variables and the proposed models

In order to capture the relationship between return on equity (ROE) and price-to-book ratio (PBR), as they change over time, we first use vector auto regression (VAR). The equations are as follows:

$$PBR_t = \beta_0 + \sum_{i=1}^{t} \beta_1 \cdot PBR_{t-i} + \sum_{i=0}^{t} \beta_2 \cdot ROE_{t-i} + \sum_{i=0}^{t} \beta_3 \cdot ROA_{t-i} + \sum_{i=0}^{t} \beta_4 \cdot FL_{t-i} + \varepsilon_i \quad \text{(eq. 1)}$$

$$ROE_t = \gamma_0 + \sum_{i=0}^{t} \gamma_1 \cdot PBR_{t-i} + \sum_{i=1}^{t} \gamma_2 \cdot ROE_{t-i} + \sum_{i=0}^{t} \gamma_3 \cdot ROA_{t-i} + \sum_{i=0}^{t} \gamma_4 \cdot FL_{t-i} + \varepsilon_i \quad \text{(eq. 2)}$$

where:

PBR_t is the ratio between the market capitalisation of the target company and the book value of the same company, for year *t*;

PBR_{t-i} is the ratio between the market capitalization of the target company and the book value of the same company, considering a one-year lag *t-i*;

ROE_t represents the return on equity between the net income and the total shareholders' equity for the target companies, for year *t*;

ROE_{t-i} represents the return on equity for the current year *t*, and the previous ones as ratio between the net income and the total shareholders' equity for the target companies;

ROA_{t-i} shows how profitable (net income) a target company is relative to its total assets, for the *t-i* years;

FL_{t-i} is the financial leverage, calculated as the ratio between the total liabilities of the target company and the shareholders' equity, considering a one-year lag *t-i*.

After applying the models to our sample of data, we apply Granger test (Granger, 1969). Its causality is often used as a prediction statistical concept, where, if PBR_t were to "granger-causes" a signal to ROE_t, then the past information of PBR_t should help in predicting ROE_t more than the values contained in the past values of ROE_t alone.

Next, we use structural equations modeling (SEM) and we propose a system of simultaneous equations. We use the following as a function for conservatism, where:

$$ROE_t = f(PBR_{t-1}; ROE_{t-1}; ROA_t; FL_t) + \varepsilon \quad \text{(eq. 3)}$$

Using GLM, we propose *the market-return model (conservatism model)*, as follows:

$$ROE_t = \delta_0 + \delta_1 \cdot PBR_{t-1} + \delta_2 \cdot ROE_{t-1} + \delta_3 \cdot ROA_t + \delta_4 \cdot FL_t + \textit{Time fixed effects} + \varepsilon_t \quad \text{(eq. 4)}$$

We use the following as a function for value relevance of financial information:

$$PBR_t = f(PBR_{t-1}; ROEest_{t-1}; ROA_t; FL_t) + \varepsilon \quad \text{(eq. 5)}$$

The return-market model (value relevance model) is:

$$PBR_t = \theta_0 + \theta_1 \cdot PBR_{t-1} + \theta_2 \cdot ROEest_{t-1} + \theta_3 \cdot ROA_t + \theta_4 \cdot FL_t + + \textit{Time fixed effects} + \varepsilon_t \quad \text{(eq. 6)}$$

where:
$ROEest_{t-1}$ – represents the estimated value for the return on equity for year *t*, based on conservatism model.

The results will be presented in the next section, considering the financial data for 2011-2018 period of time.

4. Results and discussions

To respond to the research question of the paper, which refers to: What is first? Conservatism or relevance? We start with vector auto regression (VAR). The coefficients are presented in Table 1.

Table 1. **The coefficients for VARs**

	PBR				ROE			
	Coef	**Std.Err.**	**Z**	**P>Z**	**Coef**	**Std.Err.**	**Z**	**P>Z**
PBR L.1	-0.0497	0.13429	-0.37	0.711	2.49731**	0.17952	13.91	0.000
ROE L.1	0.35053	1.07026	0.33	0.743	5.91759**	1.43069	4.14	0.000
ROA	19.01*	7.36716	2.58	0.010	21.1902*	9.84815	2.15	0.031
FL	0.75958**	0.185	4.11	0.000	1.13717**	0.2473	4.6	0.000
Intercept	-6.1721*	2.41166	-2.56	0.010	-14.977**	3.22382	-4.65	0.000

** and * indicate the statistical significance at 1 and 5% level, respectively.
(*Source*: Own processing using Stata 15.1)

With an R-square of 0.8901 and a sig. = 0.000, the model where price-to-book ratio is dependent variable is significant and the independent variables explain 89.01% of the variance of the dependent variable. In the case of the second model, the one where the return on equity is considered dependent variable, the R-square is 0.9773, which means that the chosen independent variable explain a great percentage of the variance of the variable considering a significance level of 1%.

The Granger test of causality, presented in Table 2, shows us that the return on equity is first influenced by PBR, which can be translated in the fact that, at our sample's level, the market influences the performance of the target companies, and implicitly, their accounting practices.

Table 2. **The Granger causality test**

Equation	**Excluded**	**chi2**	**df Prob**	**> chi2**
PBR	ROE	.10727	1	0.743
PBR	ALL	.10727	1	0.743
ROE	PBR	193.52*	1	0.000
ROE	ALL	193.52*	1	0.000

* Indicate the statistical significance at 1% level.
(*Source*: Own processing using Stata 15.1.)

The results of the structural equations modeling are presented in Table 3 (for conservatism model) and Table 4 (for value relevance model).

Table 3. **The parameter estimates for the conservatism model**

Parameter	B	Std. Error	t	95% Confidence Interval Lower Bound	Upper Bound
Intercept	8.530	2.217	3.848* (0.000)	4.185	12.875
ROE_{t-1}	.018	.146	.121 (0.904)	-.268	.303
PBR_{t-1}	.002	.040	.040 (0.968)	-.078	.081
ROA_t	-1.707	1.491	-1.144 (0.252)	-4.630	1.217
FL_t	.157	.048	3.238 (0.001)	.062	.251
[Time=2012]	-8.364	3.014	-2.775* (0.006)	-14.271	-2.456
[Time=2013]	-8.359	3.014	-2.773* (0.006)	-14.267	-2.451
[Time=2014]	-8.152	3.013	-2.705* (0.007)	-14.059	-2.246
[Time=2015]	-8.155	3.014	-2.706* (0.007)	-14.062	-2.248
[Time=2016]	-8.237	3.013	-2.733* (0.006)	-14.143	-2.330
[Time=2017]	-8.361	3.015	-2.773* (0.006)	-14.271	-2.451
[Time=2018]	0[a]	.	.	.	.

* Indicates the statistical significance at 1% level.
(*Source*: own processing using SPSS 25.0)

Considering Basu's (1997) interpretation of conservatism, based on earnings-on-market's returns, as a result of bad news/good news, we notice, in the case of our sample, that our main variables do not influence each other, but for target companies is of great interest the financial leverage. This means that the main trigger of participating in M&As for target companies is their financial structure, more precisely the value of their debts compared with the net worth of the company.

Table 4. **The parameter estimates for the value relevance model**

Parameter	B	Std. Error	t	95% Confidence Interval Lower Bound	Upper Bound
Intercept	.698	.334	2.087** (0.037)	.042	1.353
PBR_{t-1}	.367	.006	59.738*** (0.000)	.355	.379
$ROEest_{t-1}$	-1.142	.054	-20.966*** (0.000)	-1.249	-1.035
ROA_t	-.415	.227	-1.830* (0.067)	-.859	.029
FL_t	.454	.007	62.300*** (0.000)	.440	.469

Parameter	B	Std. Error	t	95% Confidence Interval Lower Bound	Upper Bound
[Time=2012]	-.054	.455	-.120 (0.905)	-.946	.837
[Time=2013]	.160	.455	.352 (0.725)	-.731	1.051
[Time=2014]	-.620	.455	-1.363 (0.173)	-1.510	.271
[Time=2015]	.701	.455	1.542 (0.123)	-.190	1.592
[Time=2016]	-1.042	.454	-2.293** (0.022)	-1.933	-.152
[Time=2017]	1.411	.455	3.102*** (0.002)	.519	2.302
[Time=2018]	0[a]	.	.	.	.

***, ** and * indicate the statistical significance at 1, 5 and 10% level, respectively.
(*Source*: own processing using SPSS 25.0)

The value relevance model assumes that the relevant information is the one that can influence the decision-making process of the stakeholders. Based on this assumption, the market reacts to the financial information that is presented by the target companies as a result of applying specific accounting practices. When applying the value relevance model, the results show that the PBR for the current year is influenced not only by the values from previous years (t=59.738, sig. = 0.000), but also by the returns which result from the financial statements that are published by the target companies.

5. Conclusions

Both conservatism and value relevance are characteristics of the financial information, which may affect the decision-making process. The financial accounting is inherently conservative, which leads to a net value of assets and a book value being less than their economic value (unconditional conservatism). Also, the book value of equity may be written down due to adverse circumstances, which may arise from the environment and the market. The decision of the IASB to introduce prudence again in the conceptual framework in 2018 was a signal for the entities that they should exercises caution when making judgements under conditions of uncertainty. In the same time, the value relevance of the financial information reflects the capacity of the information disclosed by the companies to capture and summarize firm value. Considering the return on equity as representative for companies' performance and price-to-book ratio a consequence of the market reaction to the accounting figures presented by the companies, we used Beaver *et al.* (2012) model, and Basu's (1997) assumption on conditional conservatism to analyze the circular causalities between return and market, using VAR and SEM.

Applying VAR, we identified that the market influences the performance of the target companies involved in M&As in the EU enlarged (28 countries), during 2017-2018 interval. The Granger causality test allowed us to move forward with the research and to create a structural equation model (SEM), which included two separate models. The first one, related to conditional conservatism, quantified the influence of the market's PBR on ROE by creating a market-to-return model, considering that the financial markets send signals in accounting, thus influencing the performance (Basu, 1997). The estimates of the first model were used as independent variable in the second model, related to value relevance (a return-to-market model). According to the second model, the financial information reported by the companies together with the market prices from the previous years, significantly influence today's price-to-book ratios. Also, the first model showed us that in our sample of target companies, the financial structure was the significant factor when deciding to participate in external growth strategies, like M&As.

These results allow us to conclude that, according to conservatism, the market influences the performance of the target companies, but the value relevance is the one that can change the perception of the market regarding the information made public by these companies.

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An Analysis of Corporate Governance Codes in Emerging European Countries

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Abstract: *The objective of this study is to analyse the corporate governance codes form 10 Emerging European Countries and examine if these countries comply with the recommendations of European Commission regarding corporate governance by using the content analysis technique. The main research proposition is to identify how many out of the 32 recommendations included in this analysis are fulfilled by the corporate governance codes from the Emerging European Countries and how these developed during time. The results illustrate that Slovenia and Czech Republic are the countries with the highest compliance degree, while Poland and Bulgaria are the countries with the least fulfilled recommendations. Future research may investigate if the European Commission recommendations were implemented into the company's annual reports.*

Keywords: *Corporate governance, corporate governance codes, emerging European countries.*

1. Introduction

Over the past twenty years, the study of corporate governance in Emerging countries has becoming an important field of research (Ararat *et al.*, 2020; Esqueda and O'Connor, 2019; Owusu, 2016; Yusof, 2016; Al-Malkawi *et al.*, 2014; Peters *et al.*, 2011, Siddiqui, 2009; Allen, 2005) increasing at international level. Based on these studies, the authors tried to provide an overview of the corporate governance in the emerging countries with the purpose to identify the mains gaps in literature. Starting with the Cadbury Report issued in the United Kingdom in 1992 by, at national level, the European countries tried to establish corporate codes of good practice governance being sustained by the European Commission with a set of recommendations that the countries should apply.

Despite the numerous research papers published on the topic of corporate governance codes in countries, a limited number of articles tried to make on overview regarding the European Commission recommendations with the corporate governance codes issued by the countries such as Kubicek *et al.* (2016), Hermes *et al.* (2007) and Hermes *et al.* (2006).

The purpose of this study is to compile the corporate governance codes from ten Eastern European Countries with the European Commission recommendations COM-284 published in 2004 and the following recommendation published in the next years regarding the position of the non-executive and supervisory directors and the committees under the board and the remuneration policy.

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Considering the corpus literature studied, this paper approaches one main research question, relative to the corporate governance and European Commission recommendations:

RQ. Do the corporate governance codes from ten Emerging European countries respect the European Commission recommendations?

By using the content analysis technique, the key characteristics of the results of this study are presented by comparing the results of this study with the results of Kubicek *et al.* (2016), Hermes *et al.* (2006) and Hermes *et al.* (2007). The results of this research provide a general overview regarding the compilation between the national corporate codes from ten Emerging European Countries with the latest European Commission recommendations.

Future research directions may attempt to broaden the sample to the all-European countries who published a corporate governance code and to find new possible patterns of the research in Europe. Moreover, future research could also investigate if the European Commission recommendations were implemented into the company's annual reports.

This paper is organized as follows: Section 2 includes an overview of the corporate governance codes studies, offering an international background. In Section 3, the key research design is explained, while in Section 4 the research findings are discussed. Section 5 is dedicated to the concluding remarks of this study.

2. Literature review

Both the corporate governance of European countries and their systems are different from one country to another (Kubicek *et al.*, 2016). The big failures of the United Kingdom companies such as Polly Pek, P&G, BCCI and Maxyell led to identifying the need for using good practices in corporate governance. Thus, in 1992 the Cadbury Report was published. This report was addressed to the listed companies and it contains a code of good practice. Since then, the report has become a benchmark for the use of best practices in corporate governance in the European countries.

According to Aguilera and Curevo-Cazurra (2004) these codes are seen as a set of good practices in the behaviour and structure of a company's management having the role of reducing the deficiencies in the corporate governance system. By studying the corporate governance in emerging markets, Ararat *et al.* (2020) shows how the corporate governance reforms have been reinforcing in emerging markets. The authors results illustrate that the corporate governance is a key factor of development, leading the research in this area, focusing on the ownership structures, property rights and organisational forms.

An interesting study conducted by Cicon *et al.* (2010) analyses the codes from 23 European Countries from various points of view. Using a Latent Systematic Analysis technique, they obtained some interesting results regarding the thematic content, variability, and convergence. The authors decomposed the codes into five themes, with substantial cross-sectional variability in their relative importance. The authors discovered that a very important aspect in explaining the theme of a code and change of the content is owned by the issuer of the code (e.g., government versus stock exchange). The codes are different depending on the rules from each country. However, they have a common law, which is the starting point in their development. Cuomo *et al.* (2016) in their study, published in Corporate Governance: An International Review, studied the recent trends and tried to indicate the future types of research in the domain of corporate governance codes. According to the authors, the corporate governance codes can be split on three levels: international (e.g., OECD), national (e.g., Stock exchange) and the individual firm. Their study explains how the codes changed over time and how the institutional actors play their role.

Esqueda and O'Connor (2019) examined the impact of the firm life cycle on corporate governance in emerging markets. By using the regression analysis, the results illustrate that a good predictor of corporate governance is the listing level decision instead of firm life cycle. By having a stringent regulation, the firms show improvements in corporate governance by choosing the quality of corporate governance considering their individual needs. Owusu (2016) investigated the determinants of a good corporate governance in an emerging country from Africa by using a panel data analytical framework. The analysis was based on a sample of 35 firms from Ghana Stock Exchange (GSE) by collecting data from their annual reports from 2000 to 2009. The author identified that there is a positive and statistically significant relationship between three determinants: external financing needs, firm size, institutional shareholdings and governance quality being measured by the Ghanaian corporate governance index.

Another interesting study was made by Al-Malkawi *et al*. (2014), who analysed the corporate governance practices in emerging markets by developing an un-weighted Corporate Governance Index (CGI) model for non-financial firms in the Gulf Cooperation Council's oil rich countries. The authors' results illustrate that 69% of the companies approach the attributes issued in CGI and the listed companies have the best adherence. Peters *et al*. (2011) comparing the practices of corporate governance and corporate social responsibility from mature markets with the practices from emerging markets concluded that the global corporate governance and corporate social responsibility system can be implemented in emerging markets being based on western codes.

Hermes *et al.* (2006) published an interesting study regarding the corporate governance codes in European Union and they tried to show if external or domestic forces drive the codes. By comparing the codes content with the European Commission priorities, the authors showed that the majority of the European codes does not respect the European Commission priorities, concluding that external and domestic forces may drive the codes. Hermes *et al.* (2007) identified the proportion in which the corporate governance codes of the European Union countries are driven by internal or external forces and if the codes are in accordance with the recommendations of European Commission. The authors focused on three main areas: disclosure rules, strengthening shareholders' rights and modernising boards. The results show that only around 50% of the recommendations of the European Commission are respected by the codes from Eastern European countries and that domestic forces drive the content of the codes.

Similarly with Hermes *et al.* (2006) and Hermes *et al.* (2007), Kubeiceck *et al.* (2016) analysed the corporate governance codes for the European Union states member and examined if European Union shapes the countries codes. Based on the study of diffusion, the authors considered how the form of exogenous and endogenous forces contains the codes of corporate governance in the member countries of the European Union, following the recommendations of the European Commission on corporate governance published in 2003 (COM-284). The authors have not been able to prove if the national corporate governance codes are influenced directly by the European Commissioning recommendation. They considered that exogenous forces shape the content of corporate governance codes.

Bosakova *et al.* (2019) analysed and compared the content of the corporate governance codes from 11 developing and emerging developing and emerging countries to see if they complied with the OECD principle of corporate governance, which are considered as being the best practices in corporate governance. The results showed that the investigated countries have issued well-developed codes, comparable with the codes from developed countries, which also contributed to the development of many areas, proving that these countries adopted the "complain and explain" principle.

Regarding corporate governance in emerging countries, Claessens and Yurtoglu (2013) made a study that reviews the recent research on corporate governance and traces the dimensions in the manner of functioning in firms from emerging countries. The authors' results showed that a good corporate governance increases the efficiency and the return on equity at firm level.

3. Research design

This paper analyses the content of the corporate governance codes form ten Emerging Eastern European Countries (Bulgaria, Croatia, Czech Republic, Hungary, Poland, Romania, Serbia, Slovakia, Slovenia and Ukraine) and the recommendation issued by European Commission using the content analysis technique. During the analysed period, these countries issued one or more corporate governance codes, as presented in Table 2.

Table 1. **Corporate Governance Codes in Emerging countries**

Country	EU Members	No. of codes	First version	Last version	Year of issued
Bulgaria	Yes	2	2007	2012	2007, 2012
Croatia	Yes	2	2008	2009	2008, 2009
Czech Republic	Yes	2	2001	2004	2001, 2004
Hungary	Yes	4	2002	2011	2002, 2007, 2008, 2018
Poland	Yes	7	2002	2015	2002, 2002, 2004, 2007, 2010, 2012, 2015
Romania	Yes	3	2000	2015	2000, 2009, 2015
Serbia	No	1	2008	2008	2008
Slovakia	Yes	2	2002	2007	2002, 2007
Slovenia	Yes	7	2004	2018	2004, 2005, 2007, 2009, 2016, 2016 and 2018
Ukraine	No	4	2003	2020	2003, 2018, 2020, 2021

(*Source:* ECGI webpage, consulted March 2021, https://ecgi.global/content/codes)

The aim of the study is to compile the recommendations of European Commission with the latest version of the corporate governance codes of ten European emerging countries. Firstly, we compile the list of recommendation published in 2003 (2003/284/EC), 2004 (2004/913/EC), 2005 (2005/162/EC) and 2009 (2009/384 and 385/EC) by the European Commission and the recommendation published in the next years related to the remuneration policy and the role of non-executive and supervisory board. Following the steps made by Hermes *et al.* (2006), Hermes *et al.* (2007) and Kubicek (2016) we divide the recommendations into 32 priorities. These recommendations are divided into five groups:

- Enhancing Corporate Governance disclosure and institutional investors (recommendation 1-9);
- Strengthening shareholders' rights (recommendation 10-12);
- Modernising the board of directors (recommendation 13-18);
- Remuneration policy of general and individual directors (recommendation 19-24);
- Role of non-executive or supervisory directors of listed companies (recommendation 25-32).

Data sample consists of 10 corporate governance codes from Emerging European Countries, which are examined in the context of the recommendations of European Commission COM-284, and the next years' updates from 2004 (2004/913/EC), 2005 (2005/162/EC) and 2009 (2009/384 and 385/EC), divided into five group, covering 32 recommendations.

The first step into this analysis is to download the latest versions of corporate governance codes from each country, as presented in Table 2. The next step is to search for the recommendations in the content of the codes. Considering that the corporate governance codes are different from one country to another, we have decided to check the recommendations in a broad sense rather than exact wording. If the recommendations of the code comply with the ones of the European Commission, they are marked with a „Yes", otherwise they are marked with a „No", as presented in the tables from part 4 of the paper.

Table 2. **Recommendation according to the European Commission**

No	Recommendation	According to
1	The operation of the shareholder meeting and its key powers;	
2	The description of shareholder rights and how they can be exercised;	
3	The composition and operation of the board and its committees;	
4	The shareholders holding major holdings, and their voting and control rights as well as key agreements;	
5	The other direct and indirect relationships between these major shareholders and the company;	
6	The existence and nature of a risk management system;	2003/284/EC
7	A reference to a code on corporate governance, designated for use at national level, with which the company complies or in relation to which it explains deviations;	
8	A disclosure of investment policy with respect to the exercise of voting rights in companies in which they invest;	
9	Disclosure to their beneficial holders at their request how these rights have been used in a particular case.	
10	Access the relevant information before the General Meetings;	

No	Recommendation	According to
11	Shareholder democracy: the one share-one vote principle;	
12	Provisions for cross-border voting;	
13	In areas of possible conflicts of interest, decisions should be made by non-executive directors;	
14	Disclosure of the remuneration policy;	
15	Disclosure of details of remuneration of individual directors;	
16	Prior approval by the shareholder meeting of share and share option schemes for directors;	
17	Proper recognition in the annual accounts of the costs of such schemes for the company;	
18	Collective responsibility of all board members.	
19	If the remuneration policy includes variable components of remuneration, company should set limits on the variable components;	
20	Award of variable components of remuneration should be subject to predetermined and measurable performance criteria.	
21	The remuneration policy and any significant change should be an explicit item on the agenda of the annual general meeting and submitted to the general meeting for a vote;	2004/913/EC, 2009/384, and 385/EC
22	Total remuneration and other benefits (i.e., shares and/or rights to acquire share, pension schemes) granted to individual directors should be disclosed in detail in the annual accounts;	
23	Shares should not vest for at least three years after their award;	
24	Remuneration of non-executive or supervisory directors should not include share options.	
25	The present or past executive responsibilities of the board's chairman should not stand in the way of his ability to exercise objective supervision;	
26	A sufficient number of independent non-executive or supervisory directors should be elected to the board to ensure that any conflict of interest involving directors will be properly dealt with;	
27	Description of the nomination, remuneration and audit committees should make recommendations aimed at preparing the decisions to be taken by the board itself;	
28	At least one of the members of the remuneration committee should have knowledge of and experience in the field of remuneration;	2005/162/EC
29	Companies may group the functions as they see fit and if necessary, create fewer than three committees:	
30	The board should make public at least once year information about its internal organisation and ensure that shareholders are properly informed as regards the affairs of the company, its strategic approach, and the management of risks and conflicts of interest;	
31	The code should describe appointment and removal of non-executive or supervisory directors;	
32	The provides profile of non-executive or supervisory director in terms of their qualifications, commitment, and independence.	

(*Source:* Kubicek 2016: 327-328-331-332)

The first 18 recommendations were published in 2003 by the European Commission under the name COM-284, which contain recommendations regarding the first three groups. The group of remuneration policy of general and individual directors contain the recommendations 19-24, updated in 2004 (2004/913/EC) and 2005 (2005/162/EC).

The last group is covered by the recommendations issued by the documents from 2009 (2009/384 and 385/EC). All recommendations are provided in Table 3.

4. Results

The figure bellow presents the number of European countries who adopted a code of best practices in corporate Governance. According to Figure 1, between 1992 and 1999, a total number of nine countries adopted a code of corporate governance. Stating with the 2000s the number of European countries who adopted a corporate governance code increased and by the end of 2010, it reached a number of 44 countries out of 51 European countries.

In 2002, a total number of seven countries, Austria, Cyprus, Switzerland, Poland, Russia, Slovakia and Hungary, adopted a code of corporate governance. The last two European countries who adopted a corporate governance code were Armenia and Azerbaijan. Regarding the Eastern European countries who adopted for the first time a corporate governance code, Romania was the first one who had the initiative to publish its first code in 2000, being followed by Czech Republic in 2001, Macedonia and Ukraine in 2003.

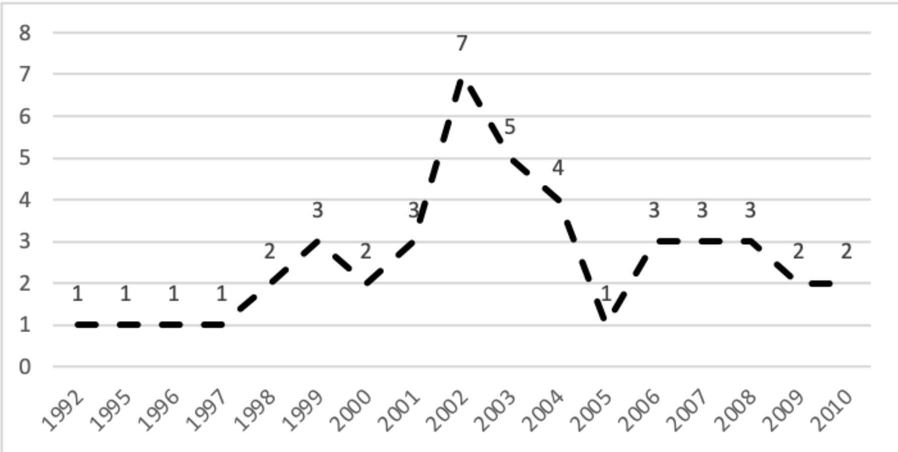

Figure 1. **Evolution in Time of the New Codes in Europe**
(*Source:* ECGI webpage, consulted March 2021, https://ecgi.global/content/codes)

Table 3. **Top Five Countries with Most Revisions of the Corporate Governance Codes**

Country	First Publication	Last review	Total reviews
United Kingdom	1992	2020	55
Germany	1998	2019	21
France	1995	2020	19
Spain	1996	2020	17
Netherlands	1997	2018	13

(*Source:* ECGI webpage, consulted March 2021, https://ecgi.global/content/codes)

The top five countries with the most revisions of the codes were presented above. United Kingdom published the first corporate governance code in 1992 and starting with this year until the end of 2020 the code was reviewed 55 times. On the second place is Germany with 21 reviews, followed by France, Spain and The Netherland on the third, fourth and fifth place with less than 20 reviews.

Table 4. **Enhancing Corporate Governance disclosure and institutional investors**

Recommendations / **Countries**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**No of compliance**	**% of compliance**
Bulgaria	Yes	Yes	Yes	No	No	Yes	Yes	No	No	5 of 9	56%
Croatia	Yes	Yes	Yes	No	No	Yes	No	No	No	4 of 9	44%
Czech Republic	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	9 of 9	100%
Hungary	Yes	Yes	Yes	No	No	Yes	Yes	No	No	5 of 9	56%
Poland	Yes	Yes	Yes	No	Yes	Yes	Yes	No	No	6 of 9	67%
Romania	Yes	Yes	Yes	No	Yes	Yes	Yes	No	No	6 of 9	67%
Serbia	Yes	Yes	Yes	No	No	Yes	Yes	Yes	No	6 of 9	67%
Slovakia	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	9 of 9	100%
Slovenia	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	9 of 9	100%
Ukraine	Yes	Yes	Yes	No	Yes	Yes	Yes	No	No	6 of 9	67%
Codes including recommen-dation	**10**	**10**	**10**	**3**	**6**	**10**	**9**	**4**	**3**	**Average**	**72%**

Table 4 presents the results of compliance of the first nine recommendations with ten Emerging European Countries corporate governance codes. It can be observed that recommendations focused on enhancing corporate governance disclosure. Similarly with Kubicek *et al.* (2016), the level of compliance of these recommendations are generally high, our results showing that more than 72% of the corporate governance codes from the countries included in the study are in compliance with the recommendations of the European Commission.

Comparing the results of Hermes *et al.* (2006) and Kubicek *et al*. (2016) it can be seen that there is a significant progress. In the prior research of Hermes *et al.* (2006), not all the countries included in the study respect the recommendations of European Commission. In the Kubicek *et al.* (2016) study, three out of nine recommendations (1, 3 and 6) are respected by all countries included into the study, meanwhile in this research it can be seen that four recommendations are fully respected by all countries (recommendation 1, 2, 3 and 6). The least respected recommendations are number 4 and 9, which are respected only by three countries. The countries who respect all the recommendations of the European Commission are the Czech Republic, Slovakia and Slovenia, while Croatia respects only four out of the nine recommendations and Bulgaria and Hungary respect five out of the nine recommendations.

Table 5 presents the results of the compliance of the corporate governance codes with the European Commission priorities, coded in this study as the recommendation 10-18, regarding strengthening shareholder’s rights and modernising the board of directors. The results show that recommendations 10, 14 and 15 are respected by all countries, being included in their national codes. The less respected recommendations are the recommendation number 12, related to the provisions for cross-border voting, and number 17, related to the proper recognition in the annual accosts of the costs of such remuneration schemes for the company.

Table 5. **Strengthening Shareholder's Rights and Modernising the Board of Directors**

Recommen-dations Countries	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**No of compliance**	**% of compliance**
Bulgaria	Yes	No	No	No	Yes	Yes	No	No	No	3 of 9	33%
Croatia	Yes	Yes	No	Yes	Yes	Yes	No	No	Yes	6 of 9	67%
Czech Republic	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	8 of 9	89%
Hungary	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	No	7 of 9	78%
Poland	Yes	No	No	Yes	Yes	Yes	No	No	No	4 of 9	44%
Romania	Yes	No	No	Yes	Yes	Yes	No	No	No	4 of 9	44%
Serbia	Yes	No	No	Yes	Yes	Yes	No	No	No	4 of 9	44%
Slovakia	Yes	No	Yes	Yes	Yes	Yes	Yes	No	Yes	7 of 9	78%
Slovenia	Yes	No	No	Yes	Yes	Yes	Yes	No	Yes	6 of 9	67%
Ukraine	Yes	Yes	No	Yes	Yes	Yes	Yes	No	Yes	7 of 9	78%
Codes including recommen-dation	**10**	**3**	**2**	**9**	**10**	**10**	**5**	**2**	**5**	**Average**	**62%**

The average number of corporate codes who included the recommendations of the European Commission is 62%, only six out of 10 countries codes respect more than 50 percent of the total recommendation. Czech Republic respects eight out of the nine recommendations issued by the European Commission regarding strengthening shareholder's rights and modernising the board of directors. Only the recommendation number 11, regarding shareholder democracy, referring to the one-share-one vote principle, is not respected. The last position in terms of compliance with the recommendations of European Commission is Bulgaria, which complies with only three of the nine recommendations, having the same results as in the study of Kubicek *et al.* (2016).

Table 6. **Remuneration Policy**

Recommendations Countries	**19**	**20**	**21**	**22**	**23**	**24**	**No of compliance**	**% of compliance**
Bulgaria	Yes	Yes	Yes	Yes	No	No	4 of 6	67%
Croatia	Yes	Yes	Yes	Yes	No	No	4 of 6	67%
Czech Republic	No	Yes	Yes	Yes	No	No	3 of 6	50%
Hungary	Yes	Yes	YES	Yes	Yes	No	5 of 6	83%
Poland	Yes	No	No	No	No	No	1 of 6	17%
Romania	No	No	Yes	Yes	No	No	2 of 6	33%
Serbia	Yes	Yes	No	Yes	No	No	3 of 6	50%
Slovakia	No	Yes	Yes	Yes	No	No	3 of 6	50%
Slovenia	Yes	Yes	Yes	Yes	Yes	No	5 of 6	83%
Ukraine	No	Yes	Yes	Yes	No	No	3 of 6	50%
Codes including recommendation	**6**	**8**	**8**	**9**	**2**	**0**	**Average**	**55%**

In the past few years, various researchers debated the remuneration policy. For example, Soppa and Baumuller (2012) studied the remuneration design system in the management board of the Austrian companies. Using the subsequent analysis based on the annual reports of the companies, the author found out that the corporation does not respect all the recommendations of the National code of corporate governance from Austria. Kanapathippillai *et al.* (2015) studied the impact of remuneration committees and the voluntary disclosure of information on remuneration. By using the ordinary least squares (OLS) regression on a sample of the Top 200 Australian Securities Exchange (ASX) listed firms, the authors showed that the remuneration committees play an important role in the disclosure of information.

The results from Table 6 show that more than 55% of the countries respect the recommendations of the European Commission 2004/913 and 2009/384 and 385. Poland is the country with the least recommendations respected, respecting only the recommendation number 19, referring to the limits that the companies should set for variable components of remuneration. Comparing with Kubicek *et al.* (2016), we observed that Poland, by updating its corporate governance code, introduced some aspects regarding remuneration policy, but not enough to be in line with the other countries. The last recommendation made by the European Commission regarding the share option included in the remuneration of non-executive or supervisory board is not respected by the countries included in our sample.

In Table 7, we analyse the European Commission recommendation published in 2005 under the number 162 regarding the position of the non-executive and supervisory directors and the committees under the board. With this recommendation, the European Commission tried to reduce the potential conflict of interest between the parties by empowering the non-executive and supervisory directors.

Table 7. **Role of Non-executive or Supervisory Directors of Listed Companies and on the Committees of the Board**

Recommen-dations Countries	**25**	**26**	**27**	**28**	**29**	**30**	**31**	**32**	**No of compliance**	**% of compliance**
Bulgaria	No	No	No	No	Yes	Yes	Yes	Yes	4 of 8	50%
Croatia	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	7 of 8	88%
Czech Republic	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	7 of 8	88%
Hungary	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	7 of 8	88%
Poland	No	Yes	No	No	No	Yes	No	No	2 of 8	25%
Romania	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	7 of 8	88%
Serbia	Yes	Yes	No	No	Yes	Yes	Yes	Yes	6 of 8	75%
Slovakia	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	7 of 8	88%
Slovenia	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	8 of 8	100%
Ukraine	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	8 of 8	100%
Codes including recommen-dation	**8**	**9**	**7**	**2**	**9**	**10**	**9**	**9**	**Average**	**79%**

The recommendations issued by the European Commission were respected, in average, by 79% of the national corporate governance codes from our sample. Slovenia and Ukraine respect all the recommendations issued by the European Commission regarding these aspects. Poland respects only 2 out of the 8 recommendations from this list, being the country with least respected recommendations from our sample. The European Commission recommends that there should be at least one member with studies and experience in the remuneration field in the remuneration committee, but the results show that only Slovenia and Ukraine respect this recommendation, being the least respected recommendation issued by the European Commission.

5. Conclusions

This paper provides a general overview of the compliance of the corporate governance codes from ten Emerging European Countries with the European Commission recommendations issued in the period 2003-2009. Using the content analysis, this research presents which of the following recommendations issued by the European Commission regarding the enhancing corporate governance disclosure and institutional investors, strengthening shareholder's rights and modernising the board of directors, remuneration policy and the role of non-executive or supervisory directors of listed companies and on the committees of the board are respected by the following countries: Bulgaria, Croatia, Czech Republic, Hungary, Poland, Romania, Serbia, Slovakia, Slovenia and Ukraine.

The results illustrate that the countries included into the sample respect the recommendations issued by the European Commission. Referring to the corporate governance disclosure and institutional investors, the most respected recommendations are the recommendations regarding the shareholders meeting and its key power (1), to the shareholders' rights description and the way of can be exercised (2), the composition of the board and its committees (3) and the existence of a risk management system (6), which are respected by all countries. Contrary, two recommendations were respected by the three countries (Czech Republic, Slovakia and Slovenia) referring to the shareholders' major holdings (4) and how the rights of the shareholders have been used (9).

In average, 62% of the countries respect the recommendations 10-18, referring to the strengthening shareholder's rights and modernising the board of directors. Three recommendations respected by all countries are recommendations 10, 14 and 15, while the recommendation 12 is respected only by the Czech Republic and Slovakia and recommendation 17 is respected by Czech Republic and Hungary.

The countries who respect more than 80% of the recommendations of European Commission regarding to the remuneration policy are Hungary and Slovenia, while Poland respects only one out of the six recommendations. Slovenia and Ukraine respect all the recommendation regarding the role of non-executive or supervisory directors of listed companies and on the committees of the board, while Poland respects only two out of the eight recommendations.

Concerning the top ten countries who respect the recommendation of European Commission, Slovenia is the first with 28 recommendations respected out of 32, followed by the Czech Republic with 27 recommendations respected and Slovakia with 26. The countries with least respected recommendations are Poland (10th place) with 13 out of 32 and Bulgaria with 16 recommendations out of 32. A study conducted by the Campbell *et al.* (2009) studied the reasons of the non-compliance of the Polish listed companies with the Poland corporate code. The results show that the independence of supervisory board members, the composition of supervisory board committees and the appointment of auditors are the most non-respected principles. The results of the report of The European Central Bank shows that Bulgaria's corporate governance codes may present some elements of good practice but in general, the system needs reform. Also for Romania case, Albu and Gîrbină (2015) studied the studied the attitude of Romanian companies regarding to the comply-or-explain principle. The results reveal that are some difficulties in the application of the principle because of the applicable laws and regulations because Romania has already a low enforcement of the principles.

Future research directions may attempt to broaden the sample to all European countries who published a corporate governance code and finding new possible patterns of research in Europe. Moreover, future research could also investigate if the European Commission recommendations were implemented into the company's annual reports.

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SECTION 7

The Effect of Applying COSO'S Internal Control Framework on Operational Risk Management in Commercial Banks in Jordan

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Abstract: *The interest in internal control increased dramatically after the financial crises that many business organizations were exposed to, many questions asked about the role of internal control in reducing these crises, as internal control over the business, activities are one of available for administrative organizations and if the organization has integrated system of internal control that will help the administration to achieve its goals efficiently, effectively, and enables it to be better management of operational risks that face reducing these risks, and reduce possibilities of their occurrence by using (COSO) framework, as this framework has become a global reference for the internal control system in establishments in many countries (Al-Sebou, 2011). The internal control components in the aforementioned framework were divided into five basic elements: control environment, risk assessment, control activities, information and communication, and monitoring. The steady technical development in the banking industry and the use of electronic means have increased banking services provided, their diversification increased the complexity of their operations in a market characterized by intense competition and risk, especially operational risks to manage them properly (Radwan, 2012). Results of the study indicated that operational risk management is affected significantly with every element of internal control following the framework of (COSO), The study confirmed the existence of a statistically significant impact of applying elements of internal control (combined) by the COSO Operational Risk Management Framework.*

Keywords: *COSO, internal audit, banking, corporate governance.*

1. Introduction

Many giant banks in many countries have suffered in recent years from huge financial crises that have been exposed to heavy risks, or collapse, and bankruptcy, such as Bank Kidder Peabody, Sumitomo Bank of New York in the USA, NatWest Capital Markets, and Bank Barings in the UK. It has become clear that among the most important reasons for the occurrence of these crises is the increase in operational risks faced by banks is lack of good management (Abu Bakr *et al*., 2006), as well as the weakness of its internal control systems.

This study clarifies the effect of applying the COSO framework for internal control in managing operational risks in commercial banks operating in Jordan, where internal control system plays an important role in managing these risks, after major bankruptcies that occurred in the USA, Southeast Asia, and other countries, which made the auditing

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profession face a great challenge in monitoring, evaluating the work of management in front of shareholders.

The importance of the study stems from the importance of the banking sector in Jordan, and its need to reduce increasing operational risks in the contemporary environment to face sharp global competition, and economic openness. The implementation of the COSO framework for internal control contributes to creating an effective internal control system that guarantees banks to achieve their supervisory objectives, reduce operational risks surrounding them. The importance of this study also lies in helping administrative leaders, employees of financial departments, internal auditors in commercial banks operating in Jordan through important role of the COSO framework for internal control in managing operational risks that banks are exposed, limit increase of risks, which leads to improvements to the performance of banks, and increasing its profits.

The study problem can be formulated as the following main question:

> *Do applied internal control elements following the COSO framework affect operational risk management in commercial banks operating in Jordan?*

The following sub-questions stem from this question:

1. Is there an effect of applying the control environment component in managing operational risks in commercial banks operating in Jordan?
2. Is there an impact of applying the risk assessment component in managing operational risks in commercial banks operating in Jordan?
3. Is there an effect of implementing a control activities component in managing operational risks in commercial banks operating in Jordan?
4. Is there an effect of implementing information and communication component in managing operational risks in commercial banks operating in Jordan?
5. Is there an impact of applying a control component in managing operational risks in commercial banks operating in Jordan?

This study has the following aims:

1. To identify the extent of application of the COSO framework for internal control in commercial banks operating in Jordan.
2. To identify the availability of sound practices for managing operational risks in commercial banks operating in Jordan.
3. To determine the effect of applying internal control elements by the COSO framework in managing operational risks in commercial banks operating in Jordan.

Therefore, a hypothetical model was built, which includes independent study variables represented by internal control elements according to the (COSO) framework (control environment, risk assessment, control activities, information and communication, and control) that effect on dependent variable represented in managing operational risks (Figure 1).

Dependent variable:	Independent variables: Internal control components (COSO)	
	Control environment	H1
	Risk assessment	H2
Operational risk management	Monitoring activities	H3
	Information and contact	H4
	Control	H5

Figure 1. **Dependent and independent variables**

The study was done based on the following main hypothesis:

H0: There is no statistically significant impact of applying internal control elements following the (COSO) framework in managing operational risks in commercial banks operating in Jordan.

From this main hypothesis, the following five sub-hypotheses are divided:

- *H01: There is no statistically significant effect of applying the control environment component in managing operational risks in commercial banks operating in Jordan.*
- *H02: There is no statistically significant effect of applying a risk assessment component in managing operational risks in commercial banks operating in Jordan.*
- *H03: There is no statistically significant effect of applying the control activities component in managing operational risks in commercial banks operating in Jordan.*
- *H04: There is no statistically significant effect of applying information and communication component in managing operational risks in commercial banks operating in Jordan.*
- *H05: There is no statistically significant effect of applying a control component in managing operational risks in commercial banks operating in Jordan.*

Elements of internal control according to the (COSO) framework are as follows:

A. **Control environment:** It refers to the general direction of managers, management, their perception, and actions related to the internal control system, its importance in the organization (Arens *et al.*, 2014).
B. **Risk assessment:** It is intended to identify, analyze risks, and identify the probability of their occurrence, in an attempt to reduce the severity of their effects to acceptable levels (Ibrahim, 2002).
C. **Control activities:** means procedures, policies, and rules that provide a reasonable degree of assurance that objectives of internal control have been achieved, and necessary measures have been taken to address risks to which they are exposed (Ali, 2006).
D. **Information and communication:** is a process of identifying appropriate information to achieve goals, reaching it, operating it, and communicating it to various administrative levels in both directions through open communication channels that allow checking that information, and preparing necessary reports (Abd Rabbo, 2010)
E. **Control:** means continuous effective follow-up, periodic evaluation of various components of the internal control system to verify the effectiveness, the efficiency of the internal control structure, to make deficiencies report. (Abdullah, 2012).

F. **Operational risk management:** is a process of identifying, assessing, controlling, controlling, minimizing operational risks (BCBS, 2003). Operational risk refers to risks resulting from bank's practice of its various activities that result in various types of errors, including human errors that are due to inefficiency, training, and technicalities that occur as a result of malfunctions of computers or various communication devices, as well as errors related to specifications operations, and inaccuracies when carrying out operations (Siddiq, 2009).

The limitation of this study was as follows:

- **Spatial boundaries**: This study was conducted in commercial banks operating in Jordan.
- **Temporal boundaries**: It is represented in the period in which the study was conducted, which is between February and the end of December 2020.
- **Human borders**: A sample of banking facilities managers, banking operations and branch operations, risk management, internal inspection, auditing, accounting, and financial control in commercial banks operating in Jordan.

One of the most important difficulties is the failure of some banks to receive questionnaires, as these banks are subject to confidentiality controls by their administrations.

2. Literature review

Hammad (2007) study dealt with practical aspects adopted by the Bank of Jordan in managing operational risks, aimed at identifying practical aspects of principles of managing, measuring operational risks, identifying benefits that bank derives from managing operational risks, applying risk self-assessment system, supervisory procedures to improve control environment, and assisting internal auditing. The Knowledge about risk self-assessment system, control procedures provides the Board of Directors with a tool to monitor the effectiveness of control systems and work to raise the level of efficiency of work.

Al-Rashidi (2010) study aimed to assess the effectiveness of internal control systems in commercial banks in Kuwait, in addition to explaining the role of internal control in the banking work of banks, diagnosing the most important problems, obstacles that prevent the achievement of effective internal control in them, it showed that internal control systems in Kuwaiti commercial banks are of a medium level. It is effective in its three components, administrative control, accounting, and financial control, and internal control systems, because the level of obstacles faced by monitoring systems in banks is the high financial cost, is an obstacle for these banks for purposes of adopting, implementing, and that there is a lack of clarity about objectives, strategies of banks, which makes It is difficult to translate these objectives and strategies into applicable internal control systems in banks.

Krstic and Ordevic study aimed to develop a new model for internal control of risks, by reviewing the (COSO) model of internal control, as it showed that it is not only a traditional model but also identification management of risks in the contemporary business environment timely. The results of the study showed that risk management plays a big role in the success of organizations, emphasized the importance of the role of internal control that responsibility for risk management rests with all employees, recommended need to establish a system for identifying, managing projects, and monitoring risks in the organization.

Al-Dogji and Al-Khairu (2013) study aimed to improve the effectiveness of the internal control system according to (COSO) model, to identify the availability of components of the system, then improve the effectiveness of each component by focusing on areas of improvement for each component, extent of its compatibility with current Iraqi environment, and introduction of some improvements to the framework, including corporate governance mechanisms, audit committee, and appointments' committee, because its requirements for applying are available in current Iraqi laws and legislation, in addition to making some amendments to become parallel to those systems applied in developed world countries such as the USA and the EU countries. The most important results obtained are that scope of the internal audit process has evolved from focusing on financial aspects to include administrative and operational aspects, in addition to providing assurance and advisory services.

McCormack, Sheen, and Umande (2014) study focused on managing operational risks using data analysis tools, the work environment, and studying internal control factors to obtain a better understanding of risks surrounding companies, as operational risks are considered a major risk to a company's ability to achieve its strategic objectives. The study found that the use of an advanced measurement approach is one of the methods of calculating capital required to face operational risks, enhances the management of operational risks within the organization, and increases the efficiency of responding.

Croitoru (2014) study aimed to demonstrate the importance of analyzing operational risks due to their great impact on the performance of organizations, achieving their goals, as operational risks are related to ongoing daily activities within organizations, and their implementation, which may cause financial and material loss if they occur. The study concluded that organizations implement a risk management system, but focus less on operational risks.

Mushtaha (2015) study aimed to assess the extent to which internal control systems in Palestinian public joint-stock companies are consistent with the framework of (COSO), its impact on the company's performance and value. It concluded that internal control systems applied in public joint-stock companies in Palestine are consistent with integrated internal control framework to a high degree, the results also showed a statistically significant effect of applying internal control components according to the COSO framework on financial performance indicators of companies listed on Palestine Stock Exchange.

What distinguishes the current study from previous studies? This study is - according to the researcher's knowledge - one of the first studies in the Jordanian environment that attempt to measure the effectiveness of internal control elements following the (COSO) framework in managing operational risks in commercial banks operating in Jordan. It also directly linked the COSO framework for internal control with all its components, operational risk management in particular, while previous studies dealt with each framework and management of operational risks separately, or linked one of the elements of internal control with management of operational risks.

3. The elements of study and their definitions

3.1. Internal control

The scientific and technological progress of the twenty-first century has led to an increase in business establishments, complexity of administrative problems resulting from the diversity of their activities, and an increase in the volume of their work, which has led to an increasing need for a sound integrated system of internal control to help administration to achieve its goals efficiently and effectively (Jumah, 2009).

The rapid developments and increase in the development process in technology make activities of banks more diverse, complex, and exposed to operational risks, as the increased use of technology brings with it potential risks such as failure of systems security, external fraud, and to face these risks it became necessary to put place necessary control measures to reduce and manage them properly (Al-Khatib, 2010).

The internal control system is considered the first line of defense that protects the interests of all relevant parties in organizations, given the importance of internal control, it has received great attention from several international professional bodies, which issued several bulletins, reports to define, evaluate internal control systems.

3.2. Concept of internal control

In recent years, internal control systems have received great attention from accountants, auditors, and enterprise management. This is due to several factors, including the growing scope of projects, the need for departments to delegate powers, responsibilities to sub-departments, and the auditor's responsibility to protect the company's resources from loss, embezzlement, theft, misuse, and need for Management to accurate, periodic data, and development of audit procedures (Kabbani, 2003).

The Committee on Auditing Procedures emanating from the American Institute of Certified Public Accountants (AICPA) in 1980 defined internal control as: "It includes the organizational plan, means of coordination, standards used in any project with aim of protecting its assets, controlling, reviewing data, Accountability, ensuring its accuracy, the extent of reliance on it, increasing production efficiency, and encouraging workers to adhere administrative policies" (Abdullah, 2012).

International Auditing Standard No. (400) also defined internal control system as "all policies, procedures, and internal controls that company management adopts to help it as much as possible to reach its objectives, including adherence to management policies, asset protection, fraud, error detection, the accuracy of accounting records completion, and preparation of reliable financial information timely". (International Federation of Accountants, 2013).

The Committee to Support Organizations (COSO) emanating from the American Institute of Certified Public Accountants (AICPA) defined them as " procedures applied by Board of Directors, management, auditors to provide a reasonable guarantee to achieve both accuracies of financial reports, commitment to achieving goals, protection of assets, and production efficiency (Al-Dogji and Al-Khayro, 2013).

Based on the above, internal control is defined as processes that are designed, applied to address deviations, and risks of business that may prevent the achievement of planned standards and objectives, that means to achieve goals not an end in itself, but it covers all aspects of the organization, and its internal activities include accounting and administrative system, the functions associated.

3.3. Objectives of internal control

1. Internal control system includes a set of policies, procedures designed to provide management with logical guarantees to help the organization achieve its goals and objectives, so the administration aims when designing an effective internal control system to achieve company goals. (Arens *et al.*, 2014).

2. Reliability of financial reporting: through management's commitment to providing investors, creditors, and shareholders with the company's financial reports, informing them of them. This falls on management as a legal and functional responsibility to ensure that information in these reports is presented fairly by the applicable financial reporting framework.

3. Adequacy and efficiency of operations: An effective internal control system helps to encourage effective and efficient use of available resources, and increase the likelihood of achieving desired goals and objectives.

4. Adherence to regulations and instructions: An effective internal control system helps to oblige management to adhere to accounting regulations and instructions such as income tax law, anti-fraud, corruption laws.

Al-Bukou and Ahmad (2012) believe that the objectives of internal control are as follows:

1. Control over available resources.
2. Good selection of individuals for jobs they occupy.
3. Verifying the correctness of financial and accounting data by verifying the correctness of financial statements and determining the degree of reliance on them.
4. The effectiveness and efficiency of operations carried out by departments and employees.

3.4. Elements of internal control

The internal control system is based on several necessary components to help effectiveness, these components should be related to each other, different in size of establishment, nature of activities, operations, nature of desired goals. The groups of elements that control the type effectiveness of internal control systems in any company are:

1. **The organizational structure:** it is the starting point where it clearly defines authority, responsibility on basis of which accountability is carried out. Thus, if duties are more clear the precise and responsibilities will be easier, to obtain an efficient and effective internal control system (Al-Bukoua and Ahmad, 2012), and an effective and efficient system of internal control, needs simplicity and clarity in terms of defining lines of authority, responsibility, and flexibility to

allow for future expansions in the activity of economic unit to be accommodated (Al-Bukoua and Al-Sayegh, 2010).

2. **The accounting system:** It is a second important element because the existence of an efficient and effective internal control system relies mainly on the existence of a sound accounting system. Following good accounting system must be available (Al-Bukaa and Al-Sayegh, 2010):

A. Sufficient documents to demonstrate responsibility.
B. A clear guide to accounts for the unit's needs.
C. A guide to accounting procedures and policies.
D. Accurate and organized accounting records that are kept up to date.
E. Periodic financial statements. F- Monthly review scales.

3. **Individuals:** it includes a selection of competent employees, their positions, accurate descriptions of various functions of the organization, and a training program for workers to do the work entrusted well (Abdullah, 2012).
4. **Internal Auditing:** One of the requirements of a good internal control system is the presence of an internal audit department in the organization to ensure the implementation of internal control system (Al-Alousi, 2003)

3.5. Elements of internal control according to (COSO) framework

COSO's Internal Control-Integrated Framework was first released in 1992 by Committee for Supporting Organizations (COSO), then this framework has gained wide acceptance in the United States of America and the world. Because of increasing complexities in the business environment, the trend towards globalization, stakeholders in organizations have become much focused on the availability of transparency, accountability in internal control systems, so the committee has updated the framework to make it more suitable for the current business environment (COSO, 2012). This framework includes five elements of internal control:

A. Control Environment means the general attitude of managers, management, and their awareness, actions related to the internal control system, and its importance in the organization (Arens *et al.*, 2014). The control environment is considered a basis for other components as it provides disciplinary, structural aspects as well as affects how strategies, objectives are set, and monitors structured activities in the establishment, control environment defines the method of establishment that affects supervisory awareness of its employees (Al-Wardat, 2014). The control environment includes many factors of direct relevance to management, namely:

1. *Professional and personal integrity, ethical values of management and employees*: This is through the existence of a code of conduct that focuses on integrity, ethical values, and the necessity for workers to adhere to ethical values that ensure a good reputation, the credibility of the company.
2. *Commitment to efficiency*: This is achieved through the existence of levels of performance within the company while ensuring that these levels are adhered to on an ongoing basis, meaning that all individuals within the company possess and maintain a certain level of competence, so management must determine skill and knowledge necessary for individuals to carry out required work (General Accounting Office, 2002).
3. *Management philosophy and operating style*: This means the administration's philosophy, operating style, reflect its supportive positions towards efficiency, independence of internal control at all times, by setting rules of behavior,

evaluating performance to support internal control, and ethical behavior of employees.

4. *Participation of the Board of Directors or Audit Committee*: audit committee and a good board of directors play an important role in strengthening the control environment, as the board of directors works independently from management, its members follow up and examine activities of management, the main objective of forming an audit committee is to increase the effectiveness of audit function, increase accountability of Board of Directors (Al Dhinaibat, 2010).
5. *Organizational Structure*: organizational structure provides a definition of powers, responsibilities, and specifies appropriate communication channels, liability accountability is linked to how powers and responsibilities are delegated to the company (Al-Wardat, 2014).
6. *Human resource policies and individuals' practices*: These policies and practices include a method of employing employees, training them, continuous evaluation of them, how to determine their salaries, promote them, impose penalties on them, The employees are considered one of the most important aspects of internal control, it's necessary to have qualified, trustworthy employees, availability of appropriate qualification, experience to perform work, and provide appropriate training (Al-Wardat, 2014).

B. Risk Assessment: It is intended to identify risks, identify, and analyze risks related to the achievement of establishment's objectives, identify the possibility of occurrence, try to reduce the severity of their effects to acceptable levels, as all establishments are exposed to risks of the activity, and the risks of activity affect the capacity of each Established to survive, compete successfully within its industry to maintain its financial strength, and positive image in front of public (Ibrahim, 2002). The integrated risk assessment framework includes three main areas (Dived, 2006):

1. *Ownership risk*: It is associated with the maintenance and preservation of all assets except for human assets.
2. *Operations risk*: It is linked to work procedures to achieve goals, managed through an effective system of internal control over operations.
3. *Behavior risk*: It is linked to human assets, employees 'compliance with established rules and standards.

C. The risk assessment process includes the following steps:

1. *Defining objectives*: Objectives are considered as criteria for evaluating the performance of a department, as the administration develops necessary plans to achieve these goals, and the existence of a risk to achieve any particular goal.
2. *Determining the risk and the likelihood of its occurrence*: Management determines the probability of exposure of the company to risks, this risk may occur due to internal factors (competence of employees, nature of activities, characteristics of Operating information system) or external factors (competition conditions, technological developments) (COSO, 2014).
3. *Evaluating risks within the establishment*: It includes determining chances of occurrence of risks within the establishment or determining the size of risks that the establishment may be ready to face before occur (Al-Wardat, 2014).
4. *Development of means of coping*: Where the company has an idea of danger, means by which it can be confronted, through the application of an effective control system within reasonable limits (Al-Mutranha, 2013)

5. *Risk management*: After identifying internal and external risks that the company may be exposed to, appropriate measures should be taken to confront and control these potential risks. (COSO, 2014).

D. Monitoring Activities: Monitoring activities include procedures, policies, and rules that provide a reasonable amount of assurance that objectives of internal control have been achieved; necessary measures are taken to face risks that the company may be exposed to (Arens *et al*. 2014). The control activities used to ensure achievement of objectives can be classified as follows:

1. *Appropriate separation between tasks*: Through separation between the acquisition of assets and control over them, and separation between tasks in the framework of electronic data processing so that separation between the information technology department and departments using information technology.
2. *The appropriate authorization for financial operations and activities*: Through specifying powers of each specific administrative level, tasks assigned to each of them (Al-Dhunaibat, 2010).
3. *Relevant documents and records*: Documents financial transactions are recorded transactions are important matters, which need to be suitable to provide adequate assurance of all financial transactions have been properly recorded for audit (al-Seboua, 2011).
4. *Actual control procedures over assets*: A set of procedures that help provide effective control over assets such as cash protection, that may be vulnerable to theft, designing necessary control measures to protect them. (al -Seboua, 2011).
5. *Independent performance tests*: By providing continuous, effective control procedures on the previous four elements, as individuals may forget or not deliberately follow the procedures, so individuals responsible for performing performance testing procedures should be independent of individuals originally responsible for preparing data (Arens *et al*., 2014).

E. Information & Communication: Determine appropriate information to achieve objectives of the company, reach it, operate it, and connect it to various administrative levels in both directions through open communication channels that allow auditing information, and preparing reports, with the importance of communicating it in the appropriate form, time frame for employees to perform their internal control, and their other responsibilities (Abd Rabbo, 2010). Information and communication systems play a major role in internal control systems because they produce reports, including executive, financial and related information, help management in monitoring. (Badawi, 2011).

F. Control: Focuses on continuous follow-up and periodic evaluation of various components of the internal control system to verify the effectiveness, the efficiency of the internal control structure, to report on its deficiencies, with providing a report on deficiencies in Internal control of critical matters to management, board of directors, also assures that internal control maintains its effectiveness over time (Abdullah, 2012). This process takes place in two ways (COSO, 2014):

1. *Continuous monitoring of activities*: It is built within regular and recurring control activities in the company, it is applied in real-time, has flexibility, and includes continuous monitoring of periodic, administrative, and supervisory activities.
2. *Separate periodic evaluations*: The scope, use, and frequency of these evaluations depend on the assessment of risks, effectiveness of continuous monitoring

procedures, and it is represented in a group of control activities that are performed separately from the course of operational processes.

Concept of risk:

COSO defines risk as "events with negative impacts that prevent an enterprise from realizing value or erode the existing value" (IIA, 2010).

For the banking industry, the risk is meant as "the decrease in the market value of bank due to changes in the business environment" (Hakim and Radi, 2014).

Types of banking risks:

The banking risks are divided into several types, including systemic risks (general) and non-systemic risks (private), there is a divide into financial risks and Operation risks. Belajouz (2013) divides banking risks into two main categories:

- **Systemic risks**: those risks that lead to volatility of expected return of all existing or proposed investments in all institutions. Like changes in the economic, political, and social environment that affects the market.
- **Irregular risks**: it means those risks that are unique to a banking institution or industry. Like workers' strikes, administrative errors, advertising campaigns, changing consumer tastes, and lawsuits.

Other types of banking risks can be divided into:

First: Financial Risks: It refers to those risks that include all risks related to the management of assets and liabilities of the bank, this type of risk requires constant monitoring, supervision by banks' departments, according to direct movement of the market, economic conditions, relationship with other related parties. Among the most important types of financial risks are the following:

1. **Credit risk:** It is the risk related to the customer's inability or commitment to return principal or interest or both at the maturity date, reason for risks in this type is due to internal factors such as customer or his activity or because of the weakness of process for which credit was granted, or as a result general circumstances of the customer, bank, or because of the bank providing credit, as a result of mistakes made by employees in bank's management, either because of their lack of training, lack of their experience, or even as a result of bank's lack of a national credit policy in addition to weak risk follow-up and control procedures (Al-Zubaidi, 2010).
2. **Liquidity risk:** It is a risk that may lead to losses as a result of the bank's inability to fulfill its obligations on maturity date due to the bank's inability to provide necessary financing or liquid assets to meet these liabilities with the least possible losses. Because failure to maintain adequate liquidity levels may lead to the collapse of the bank, its failure as a financial institution (Hammad, 2010). Liquidity is considered one of the main components of managing a bank's assets, liabilities, the Assets and Liabilities Management Committee in large banks is concerned with the issue of liquidity management, takes into account maturities of various assets and liabilities so that a liquidity crisis does not occur, that risk decreases if the bank has salable investments to meet the demand for liquidity. The second source of liquidity is borrowing from others, this is what large banks do when facing increasing demand for liquidity, but in event of failure, it will lead to the downfall of the bank as a financial institution (Abdel-Hafez, 2005).
3. **Market risk:** These risks result due to general change in prices and policies at the level of the economy as a whole, due to a change in prices of certain assets or

traded instruments as a result of their special circumstances (Khan and Habib, 2003), and market risks are divided into:

- **Interest rate risk:** It refers to those risks that arise from changes in the level of interest rates in the market, as market interest rates may rise or fall in long term, interest rate risk is directly related to the processing of transferring loan installments.
- **Risks of exchange rate fluctuations:** It is a risk of fluctuation in prices of buying, selling foreign currencies against national currency, this risk occurs in event that bank owns assets denominated in foreign currencies, which requires the presence of capital required to cover the Exchange rate risk (Badran, 2005).
- **Price risk:** It is the risk that banks may be exposed to as a result of adverse changes in market prices, it arises from fluctuations in bond and stock markets.
- **Reputation risk:** It refers to risks resulting from the availability of a negative public opinion towards a bank, which may lead to an impact on its reputation in the market, as a result of the bank's failure to manage previous risks. (Adel, 2012)

Second: Operational risk: Operational risk in banks is considered one of the great importance because it may cause large direct and indirect losses to bank, these risks result from the possibility of loss that may occur as a result of failure or insufficiency of internal data, employees, regulations, and external events (Hammad, 2007).

Definition of operational risk: Operational risk refers to risks resulting from bank's practice of its various activities that result in different types of errors, including human errors that are due to inefficiency, training in working methods, including technical ones that occur as a result of malfunctions of computers or various communication devices, also defined as risks that arise from work of bank's employees, its internal systems, policies, and decision-making methods (Siddiq, 2009).

Types of operational risks: The following are types of operational risks an interpretation of each of them as mentioned in the good practices paper prepared by Basel Committee (BCBS, 2003):

1. **Human element:** It includes losses that are caused by employees or related to employees (intentionally or unintentionally). It also includes acts whose aim is to cheat, misuse property, or circumvent the law, regulations, or bank policy by officials or employees, as well as losses. Arising from the relationship with clients, shareholders, and regulatory authorities.
2. **Implementation and management of operations:** It includes losses resulting from wrong handling of operations, customer accounts, daily bank operations, weakness in internal control, auditing systems, failure to implement transactions, and process management.
3. **Automated systems and communications:** It includes losses arising from work disruption or failure of systems due to infrastructure, information technology, or unavailability of systems, any malfunction or defect in systems.
4. **Events related to the external environment:** They include external fraud, any damage to property and assets, as well as losses as a result of changes in laws that affect the bank's ability to continue the business.

Concept of risk management:

Risk management is "a rule or system that all financial and banking institutions must adhere to, as it is a system that covers all banking activities, aims to achieve best returns upon entering into business risks, to ensure that the persons who manage the risks have a full understanding of the risks facing the bank and that they are managed effectively and efficiently to prevent the occurrence of potential losses" (Ben Ali, 2011).

Risk management aims to give the board of directors and executives a complete idea of all risks that the bank faces, setting up a system for internal control to manage various types of risks in all the bank's units, to prevent potential losses from occurring, to ensure that bank gets an adequate return for risks it may face, to use risk management as a Competitive Weapon (Ben Amara, 2009).

The COSO Committee defined risk management as "identifying, analyzing, controlling economic risks that threaten assets or revenue capacity of the organization, identifying, analyzing risks that threaten organization's work to reduce negative effects resulting from them" (COSO, 2014).

The Institute of Internal Auditors (IIA) also defined risk management as "a process of identifying, assessing, managing, controlling potential events, existing situations to provide reasonable assurances and guarantees towards achieving organization's objectives" (IIA, 2010).

The board of directors is primarily responsible for managing risks, assigning this role to other risk managers, each according to his activity.

Managing operational risks in the banking industry:

Due to the development of banking and globalization of financial services, banking activities are heading towards more diversity, and complexity, which has led to an increase in degree, types of operational risks facing banks, and it is necessary to follow up on operational risks to which banks are exposed, as the bank cannot avoid risks, but can control, and manage them.

Basel Committee on Banking Supervision defined operational risk management as "the process of identifying, assessing, controlling, controlling, and minimizing operational risks (BCBS, 2003). Based on this definition, the main steps for managing and controlling operational risks can be determined as follows (Fraihat, 2012):

1. Defining operational risks, types, analyzing, and evaluating the main steps thereof.
2. Measuring operational risks, evaluating the probability of occurrence of risks, and their relationship to returns achieved.
3. Monitor operational risks, and determine appropriate means to control them.
4. Control of operational risks by using methods appropriate to risks identified.

The methods that should be followed to deal with operational risks in the banking industry can be summarized as follows:

1. *Establishing the scope of risk management*: There is a set of internal and external considerations that contribute to building an operational risk management policy, where internal considerations are linked to the internal environment of the bank in the way it seeks to achieve its objective (IIA, 2010).
2. *Examination of risks*: This stage includes many points, namely (Hajira, 2014): A. Identifying risks B. Risk analysis C. Risk assessment

3. *Risk treatment*: includes setting appropriate standards to control these risks to avoid them or reduce potential losses that banks may face when practicing their various activities, by avoiding entering into certain markets or products.
4. *Follow-up and review*: where a periodic review of policies the extent of their compatibility with laws, and standards followed in the bank is carried out, changes occurring in it are identified, to ensure that appropriate adjustments are made to these changes reaching better decisions in process of examining, and managing risks for future use (IIA, 2011).
5. *Communication and consultation*: Contact and consultation are made with internal and external stakeholders in all stages of operational risk management to develop a plan that includes reporting on operations, procedures related to them to inform stakeholders of principles that have been adopted. (Hajira, 2014).

Sound principles for managing and controlling operational risks: Basel Committee on Banking Supervision issued a paper containing ten principles to assist banks, supervisory authorities in defining foundations for sound management, and control of operational risks. The following is a summary of these principles:

- **Principle 1:** Role of Board of Directors in terms of public awareness, approval, and review of the general framework for operational risk management.
- **Principle 2:** Role of the board of directors in ensuring that operational risk management framework is subject to effective scrutiny.
- **Principle 3:** The responsibility of senior management in implementing an operational risk management framework and providing necessary resources.
- **Principle 4:** Defining, evaluating, and measuring operational risks. Banks usually use several methods in identifying and assessing operational risks in them: *A - Self-assessment of risks, B - Risks inventory, C - Risk indicators, D - A historical record of operational losses.*
- **Principle 5:** Follow-up to the estimated level of operational risks, potential exposure to material losses, and preparing reports
- **Principle 6:** Availability of Means, Procedures to Control, and Reduce Operational Risks
- **Principle 7:** Availability of contingency plans and business continuity.
- **Principle 8:** Requiring banks to provide an effective framework for managing operational risks.
- **Principle 9:** Evaluating Banks' Policies and Procedures for Operational Risk Management.
- **Principle 10:** Disclosure of operational risks and their management by banks.

4. Methodology

The study adopted a descriptive and analytical approach to achieve its objectives, test hypotheses, verify their validity, analyze, interpret results obtained from the field study, which are based on data collected through preparation and development of study tool.

4.1. Population and sample

The study population consisted of all the (21) commercial banks operating in Jordan, according to the Directory of Banks Operating in Jordan, issued by the Association of Banks in Jordan and until 2020(www.abj.org.jo). Seven banks refused to receive the questionnaire, thus the number of banks that were subjected to the study was 14 banks. The study sample members consisted of managers of the following departments: banking facilities, banking operations, branch operations, risk management, internal auditing, accounting, and financial control.

The number of these persons reached 126, questionnaires were distributed, the number of retrieved questionnaires reached (106) questionnaires, but (4) questionnaires were excluded because the information was not completed, so (102) questionnaires were analyzed, approximately (81%) of the questionnaires distributed, as shown in Table 1.

Table 1. **Distribution of the study sample according to banks**

No.	**Bank name**	Distributed questionnaires	Recovered questionnaires	Questionnaires analysis
1	Arab Bank	10	10	9
2	Jordan Ahli Bank	10	8	8
3	Cairo Amman Bank	10	8	8
4	Jordan Bank	10	8	7
5	Housing Bank for Trade and Finance	10	9	9
6	Jordan Kuwait Bank	10	8	8
7	Jordan Commercial Bank	10	9	7
8	Investment bank	10	8	8
9	A B C Bank	10	8	8
10	Union Bank	10	9	9
11	Rafidain Bank	6	4	4
12	Citibank - Jordan	7	4	4
13	BLOM Bank	8	8	8
14	Abu Dhabi National Bank	5	5	5
	Total	**126**	**106**	**102**

(*Sources:* Association of Banks in Jordan, Available Online: http://www.cbj.gov.jo)

4.2. Data collection methods

In this study, two types of information sources were relied on, namely secondary sources and primary sources. The secondary data was obtained from library sources; it includes books, scientific references, university theses, previous studies published, and resources available through websites in Arabic and English related to the subject of study. The initial (primary) data was obtained through developing a questionnaire specific to the subject of study, based on the theoretical framework and previous studies.

4.3. Study tool

A special questionnaire was developed according to requirements of study variables, the five-point Likert scale was used, where :(Strongly agree (5) degrees, and strongly disagree have (1) degree). The questionnaire was divided into three parts. *The first section* is devoted to identifying the demographic characteristics of the study sample. *Section two* aims to measure variables related to internal control elements according to the (COSO) framework. *Section three* aims to measure operational risk management variable.

Test of validity and reliability of study instrument. The apparent validity of the study tool was tested by presenting it to a group of specialized arbitrators in Jordanian universities, and the questionnaire was modified in light of their observations and opinions. To ensure the validity of the questionnaire, reliability was tested using Cronbach's alpha coefficient, the result for study variables ranged between (0.81 - 0.95), the overall rate of stability was (91.4%).

Table 2. **Stability coefficients for study variables**.

Sequencing of vertebrae	Variable	Cronbach's Alpha
1-9	Control environment	**85.5%**
10-15	Risk assessment	**94%**
16-22	Control activities	**87.7%**
23-29	Information and contact	**89.7%**
30-36	Controlling	**80.6%**
37-51	Managing operational risks	**95.4%**
1-51	The overall rate of persistence	**91.4 %**

Characteristics of the study sample. Frequencies and percentages were extracted to describe characteristics of the study sample, and results are summarized in the following.

A. Job title

Table 3. **Distribution of study sample according to their job title.**

Category	Repetition	Percentage %
Deputy - Assistant General Manager	23	22.5%
Executive Director	33	32.4%
Director of the Department	46	45.1%
Total	**102**	**100%**

Table 3 shows the diversity of job location of the study sample, the largest percentage of them was for departmental directors (45.1%) of the total size of the sample, and the lowest percentage was for assistants to the general director (22.5%) of the total size of the study sample.

B. Academic qualification

Table 4. **Distribution of study sample individuals according to academic qualification**

Category	Repetition	Percentage %
Less than Bachelor	6	**5.9%**
Bachelor	45	**44.1%**
Postgraduate	51	**50%**
Total	**102**	**100%**

Table 4 shows that the majority of sample members are suitably scientifically qualified, the holders of postgraduate degrees were 50%, the lowest percentage was who has less Bachelor's degree of (5.9%).

C. Scientific specialization

Table 5. **Distribution of study sample individuals according to scientific specialization**

Category	Repetition	Percentage %
Accounting	30	29.4%
Banking and Finance	36	35.3%
Business Administration	22	21.6%
Economic	10	9.8%
Other	4	3.9%
Total	**102**	**100%**

Table 5 shows that the highest percentage of scientific specialization was for finance and banking (35.3%) of the total size of the study sample, and the lowest percentage was for others with (3.9%). This indicates the study sample has a certificate where the majors in the accounting and finance field were the highest.

D. Experience in banking

Table 6. **Distribution of study sample individuals according to experience in the field of banking**

Category/ experience	Repetition	Percentage %
Less than 5 years	18	17.6%
5-10 years	42	41.2%
11-15 years	27	26.5%
Over 15 years	15	14.7%
Total	**102**	**100%**

Table 6 shows that the highest percentage of the experience category (from 5 years to less than 10 years), where they constitute (41.2%) of the total study sample size, the lowest percentage of experience (more than 15 years), with (14.7%) Of the total study sample size, that indicates that sample members have good experience in their field of work.

E. Participation in training courses related to internal control systems and operational risk management

Table 7. **Distribution of study sample individuals according to participation in training courses related to internal control systems and operational risk management**

Category	Repetition	Percentage %
Internal control systems	52	51%
Operational risk management	50	49%
Total	**102**	**100%**

Table 7 shows that the highest percentage of study sample individuals participated in training courses of internal control systems constituted 51% of the total study sample size, and then came individuals who participated in training courses related to operational risk management, with a percentage (49%). This indicates that sample members have the necessary knowledge of internal control and operational risk management.

4.4. Descriptive statistics for the questionnaire answers

First: The level of application of internal control elements following the (COSO) framework in the bank study.

1. Control environment component

Table 8. **Descriptive statistics of the responses of the study sample individuals related to the control environment component**

No.	Paragraph	SMA	Standard deviation	Arrangement	Answer level
1	The bank's management reinforces among the employees the principle of considering supervision the responsibility of all individuals.	3.25	1.24	4	Medium
2	The bank has a code of conduct that focuses on integrity, ethical values, and the necessity for employees to adhere to them.	3.22	1.22	5	Medium
3	The bank's employees have the professional competence necessary to perform the tasks required of them.	3.06	1.22	9	Medium
4	The Bank's management establishes codes of conduct and evaluates performance to support internal control and ethical behavior.	3.48	1.27	2	Medium
5	The board of directors operates independently of the management in the bank.	3.50	1.13	1	Medium
6	The audit committee of the bank is made up of directors or non-executive directors.	3.09	1.19	8	Medium
7	There is a clear description of all the jobs in the bank.	3.18	1.16	6	Medium
8	The organizational structure in the bank enables defining the powers, responsibilities, and appropriate communication channels.	3.38	1.25	3	Medium
9	The bank has clear human resources policies (such as recruitment, promotion, bonuses, penalties, etc.).	3.10	1.31	7	Medium
Arithmetic mean and general standard deviation		**3.25**	**1.221**	**-**	**Medium**

Table 8 shows that the levels of application of the clauses of the control environment component ranged within the average level, where their arithmetic averages ranged between (3.06–3.50) The general result here indicates that there is a medium application level for the control environment component in commercial banks in Jordan, the general arithmetic mean of their answers in this regard was (3.25).indicating that the respondents' answers are close and similar to some extent.

2. Estimation of the risk component

Table 9. **Descriptive statistics of the responses of the study sample individuals related to the risk assessment component**

No.	Paragraph	SMA	Standard deviation	Arrangement	Answer level
10	The management of the bank assesses the risks it faces when introducing new banking services.	3.20	1.21	5	Medium
11	The Bank's management is taking sound measures to face the risks.	3.62	1.21	3	Medium
12	The Bank's Internal Control Department participates with the Board of Directors and management in the risk assessment process.	3.72	1.07	1	High
13	The Internal Control Department works to control risk levels in the bank.	3.11	1.19	6	Medium
14	The suitability of the Bank's strategies and the risks it faces is reviewed periodically by the management.	3.24	1.21	4	Medium
15	The bank's employees have the necessary professionalism to manage risk activities.	3.68	1.28	2	High
Arithmetic mean and general standard deviation		**3.43**	**1.195**	**-**	**Medium**

Table 9 shows that levels of application of paragraphs of risk assessment component ranged between high and medium, with their arithmetic averages between (3.72-3.11), the general result here indicates that there is a medium level of applying risk assessment component in commercial banks operating in Jordan. As for standard deviation, it reached (1.195), which indicates that respondents' answers are close and similar to some extent.

3. Control activities component

Table 10 shows that levels of application of clauses of control activities component ranged between high and medium levels, with their arithmetic averages between (3.66-3.50), the general result here indicates that there is a medium level of application of control activities component in commercial banks operating in Jordan. As for standard deviation, it reached (1.137), which indicates that respondents' answers are close, similar to some extent.

Table 10. **Descriptive statistics of the responses of the study sample individuals related to the control activities component**

No.	Paragraph	SMA	Standard deviation	Arrangement	Answer level
16	In a bank, there is a convenient separation of duties by distributing them among different employees.	3.61	1.17	3	Medium
17	In the bank, the powers and tasks assigned to each administrative level are defined.	3.66	1.13	1	High
18	The bank has adequate documents and records that serve the various purposes of control.	3.50	1.14	5	Medium
19	The bank has the necessary procedures to secure the physical protection of the assets.	3.64	1.2	2	Medium
20	Performance is reviewed by persons independent of the people responsible for providing the services.	3.66	1.07	1	High
21	In the bank, policies, and procedures are updated periodically and communicated to all employees.	3.60	1.10	4	Medium
22	Complaints are used as a monitoring tool in the bank.	3.64	1.15	2	Medium
Arithmetic mean and general standard deviation		**3.61**	**1.137**	**-**	**Medium**

4. Information and communication component

Table 11. **Descriptive statistics of the answers of the study sample individuals related to the information and communication component**

No.	Paragraph	SMA	Standard deviation	Arrangement	Answer level
23	The information system in the bank provides sufficient information for the decision-maker.	3.26	1.37	4	Medium
24	There are mechanisms in the bank to obtain information related to the external environment.	3.10	1.26	6	Medium
25	Information is available to the decision-maker in the bank through operational reports, reports on compliance with legal requirements, and financial statements.	3.58	1.30	2	Medium
26	The bank takes measures to limit the penetration of computerized systems and make amendments to them.	3.54	1.19	3	Medium
27	The management ensures clarity of powers and responsibilities through an effective communication system.	3.21	1.27	5	Medium
28	There are appropriate means of communication in the bank that	3.63	1.21	1	Medium

No.	Paragraph	SMA	Standard deviation	Arrangement	Answer level
	contribute to the delivery of information timely.				
29	The bank has a contingency plan to ensure the flow of work and reduce the possibility of system downtime.	2.88	1.32	7	Medium
Arithmetic mean and general standard deviation		**3.31**	**1.274**	**-**	**Medium**

Table 11 shows that levels of application of information and communication variable clauses ranged within the medium level, as their arithmetic averages ranged between (3.63-2.88), the general result here indicates that there is a medium level of application of information and communication component in commercial banks operating in Jordan. As for the standard deviation, it reached (1.274), which indicates that respondents' answers are close and similar to some extent.

5. Controlling component

Table 12. **Descriptive statistics of the answers of the study sample individuals related to the observation component**

No.	Paragraph	SMA	Standard deviation	Arrangement	Answer level
30	There are supervisory standards for monitoring and evaluating the performance of the bank.	3.50	1.24	2	Medium
31	The bank's employees in the field of auditing and oversight enjoy independence.	3.22	1.18	3	Medium
32	The performance of the employees is professionally evaluated in the bank.	3.02	1.19	7	Medium
33	The concerned administrative level in the bank is informed timely of any gaps or problems in the internal control system.	3.04	1.30	6	Medium
34	The results of the bank's performance reports are used to award incentives or penalties.	3.13	1.28	4	Medium
35	Performance reports help in addressing deficiencies and developing performance in the bank.	3.09	1.25	5	Medium
36	The bank's internal auditors evaluate the progress of the operations after they are completed.	3.52	1.31	1	Medium
Arithmetic mean and general standard deviation		**3.21**	**1.25**	**-**	**Medium**

Table 12 shows that levels of application of control component clauses ranged within the average level, as their arithmetic averages ranged between (3.52-3.02), the general result here indicates that there is an average level of application of control component in commercial banks operating in Jordan from point of view. As for standard deviation, it reached (1.25), indicating that respondents' answers are close and similar to some extent.

Based on the foregoing, internal control elements can be arranged according to the level of implementation in banks under study, as shown in Table 13.

Table 13. **Arithmetic means and standard deviations of the levels of application of internal control elements according to (COSO) framework**

Elements of internal control according to the (COSO) framework	SMA	Standard deviation	Arrangement	Answer level
Control environment component	3.25	1.22	4	Medium
Estimation of the risk component	3.43	1.19	2	Medium
Control activities component	3.61	1.14	1	Medium
Information and communication component	3.31	1.25	3	Medium
controlling component	3.21	1.25	5	Medium
Arithmetic mean and general standard deviation	**3.36**	**1.21**	**-**	**Medium**

Table 13 shows that the application of the control activities component achieved the first rank among the levels of application of internal control elements with an arithmetic average (3.61), while the control component came with arithmetic means (3.21) in the end. So individuals of the study sample support application of internal control elements (combined) according to (COSO) framework at an average level in banks under study.

Second: The level of availability of sound practices for managing operational risks in the banks' understudy

Table 14. **Descriptive statistics of the responses of the study sample individuals related to operational risk management**

No.	Paragraph	SMA	Standard deviation	Arrangement	Answer level
37	The Board of Directors understands the basic elements of operational risk facing the Bank's business and deals with them as a separate, monitored category.	3.86	1.25	3	High
38	The Bank's Board of Directors monitors and approves periodically the operational risk management strategy.	3.83	1.21	4	High
39	The Bank's Board of Directors ensures that the operational risk management structure is subject to an effective, comprehensive, and independent internal audit function that is carried out by competent and trained personnel.	3.80	1.21	5	High
40	Top management is responsible for developing policies, processes, and procedures related to managing operational risk in all the Bank's activities, operations, and systems.	3.72	1.22	8	High
41	The bank has a specific methodology for managing	3.74	1.23	7	High

No.	Paragraph	SMA	Standard deviation	Arrangement	Answer level
	operational risks that includes a clear definition of these risks and the means for assessing and controlling them.				
42	The bank endeavors to determine the procedures necessary to measure the operational risks.	3.95	1.18	1	High
43	The Bank’s operational risk management takes into consideration both internal and external factors that greatly affect the achievement of the bank’s objectives.	3.57	1.02	10	Medium
44	There is a special record of losses resulting from the operational risks to which the bank was exposed, showing the size of the loss, the date of its occurrence, its causes, and the mechanism of treatment.	3.58	1.02	9	Medium
45	The bank’s employees, each according to their responsibilities, evaluate their operations and activities against a list of operational risks that the bank may be exposed to.	3.25	1.36	12	Medium
46	The policies, strategies, and business procedures are reviewed and developed regularly basis in the bank.	3.39	1.17	11	Medium
47	The bank’s branches and departments report to the senior management periodically about operational risks and the amount of potential exposure to them.	3.14	0.95	13	Medium
48	All functional levels in the bank are aware of their responsibilities in managing operational risks.	2.87	1.02	15	Medium
49	The bank analyzes and evaluates the self-operational risks related to new products, processes, and systems before offering them or evaluating them.	3.15	1.03	14	Medium
50	The bank has a contingency plan in place to meet any unforeseen operational risks.	3.91	1.17	2	High
51	The bank discloses to dealers in the market (clients and investors) the operational risks and the policies followed in its management.	3.79	1.18	6	High
Arithmetic mean and general standard deviation		**3.57**	**1.148**	**-**	**Medium**

Table 14 shows that levels of availability of paragraphs of good practices for operational risk management variable ranged between high and medium levels, as their arithmetic averages ranged between (3.95-2.87), the general result here indicates that there is an average level of availability of sound practices for managing operational risks in Commercial banks operating in Jordan from viewpoint of the study sample. As for standard deviation, it reached (1.148), which indicates that respondents' answers are close and similar to some extent.

4.5. Test hypotheses of the study

Before starting the application of regression analysis to test study hypotheses, some tests were performed to ensure that data fit assumptions of regression analysis, as it was ascertained that there was no high correlation between independent study variables by using variance inflation factor test, permissible variance test for independent study variables, taking into account that coefficient of variance inflation does not exceed value (10), that value of permissible variance exceeds (.050).

Table 15. **Test of amplification coefficient of variance, permissible covariance, and torsion modulus**

Tolerance independent variables	VIF permissible variance	Contrast amplification factor	Coefficient of torsion
Control environment component	.405	2.467	.944
Estimation of the risk component	.282	3.548	.656
Control activities component	.300	3.330	.968
Information and communication component	.243	4.108	.414
Controlling component	.520	1.922	.235

Table 15 shows that shows results of these tests, that values of variance amplification factor test for each variable are less than (10), values of permissible variance test for all variables are greater than (.050) this is an indication that there is no high correlation between Independent variables.

Main hypothesis *H0: There is no statistically significant effect of applying internal control elements according to the (COSO) framework for internal control (control environment, risk assessment, control activities, information and communication, and control) in managing operational risks in commercial banks operating in Jordan.*

To test this hypothesis, multiple linear regression analysis was used to find out the effect of applying internal control elements according to the COSO framework on managing operational risks in commercial banks operating in Jordan, and the mathematical model that was used for this purpose is:

Y = a + b1x1 + b2x2 + b3x3 + b4x4 + b5x5 + e,

where:
Y = Operational Risk Management,
a = constant term,
b1 to b5 = the regression coefficients,

x1 = Control environment,
x2 = Risk assessment,
x3 = Control activities,
x4 = Information and contact,
x5 = Watch, e = random error)

Table 16. **Results of multiple regression analysis of the impact of applying internal control elements according to the COSO framework on operational risk management**

Dependent variable	**Operational risk management**				
Sig*Indication level	.308	.545	.110	.569	.000
T Calculated	1.026	.608	1.616	.572	3.218
β Regression coefficient	.135	.099	.267	.099	.396
	Control environment component	Estimation of the risk component	Control activities component	Information and communication component	Controlling component
Sig* Indication level			0.000		
DF Degrees of freedom		5 Between totals		96 Residuals	101 Total
F Calculated			8.034		
(R^2)Determination coefficient			.311		
(R)Correlation coefficient			.558		

** Statistically significant at a level ($\alpha \leq 0.05$)

Table 16 shows the existence of a statistically significant effect for all dimensions of independent variable (internal control elements according to COSO framework in managing operational risks as a dependent variable, calculated F value indicates significance of model, as it reached (8.034) at a significant level) coefficient of determination was R2 (.311), meaning that independent variables represented by internal control elements according to (COSO) framework combined explain (31.1%) of changes in operational risk management, which means that regression curve is good to describe relationship between dependent variable, independent variables, as multiple correlation coefficient R of (.558) indicates strength of relationship or correlation between independent variables, dependent variable, accordingly rejects null hypothesis and accepts alternative hypothesis which states that there is a statistically significant effect of applying elements of internal control according to (COSO) (control environment, risk assessment, control activities, information and communication, and monitoring) in managing operational risks in commercial banks operating in Jordan.

As it is clear to us, in case of the existence of all elements of internal control combined, the control element eliminates the effect of remaining elements, because continuous monitoring of activities, periodic evaluation of various components of internal control reduces rates of unintended error, prevents intended error.

To verify the effect of each component of internal control in managing operational risks, the main hypothesis was divided into five sub-hypotheses.

H01: There is no statistically significant effect of applying the control environment component in managing operational risks in commercial banks operating in Jordan.

Simple regression analysis was used to test this hypothesis, a mathematical model that was used for this purpose is:

Y = a + bx + e
where: Y = Operational Risk Management, a = constant term, b = the regression coefficient, x = Control environment, e = random error.

Table 17. **Results of simple regression analysis of the impact of applying the control environment component to operational risk management**

Dependent variable	Operational risk management		
T calculated	.000		
β Regression coefficient	4.230		
Sig * Indication level	0.000		
DF Degrees of freedom	Between totals 1	Residuals 100	Total 101
F Calculated	17.895		
(R^2) Determination coefficient	.161		
(R) Correlation coefficient	.402		

* Statistically significant at a level ($\alpha \leq 0.05$)

Table 17 shows that there is a statistically significant effect of control environment component in managing operational risks, calculated F value indicates the significance of the model as it reached (17.895) at a significance level (0.05), determination factor R2 reached (161). That is, the independent variable represented by the control environment component explains (16.1%) of variance in operational risks in commercial banks operating in Jordan, which means that the regression curve is good for describing the relationship between the dependent variable and independent variable, as indicated by the correlation coefficient R (.402) indicates the strength of the relationship between explained variable, the value of the dependent variable. This means rejecting the null hypothesis and accepting an alternative hypothesis that states that there is a statistically significant effect of applying the control environment component in managing operational risks in commercial banks operating in Jordan.

H02: There is no statistically significant impact of applying risk assessment components in managing operational risks in commercial banks operating in Jordan.

Simple regression analysis was used to test this hypothesis, a mathematical model that was used for this purpose is:

Y = a + bx + e
where: Y = Operational risk management, a = constant term, b = the regression coefficient, x = Risk assessment, e = random error.

Table 18. **Results of simple regression analysis of the impact of applying the risk assessment component in managing operational risks**

Dependent variable	Operational risk management		
(R) Correlation coefficient	.325		
(R^2) Determination coefficient	.106		
F Calculated	11.006		
DF Degrees of freedom	1 Between totals	100 Residuals	101 Residuals
Indication level	0.000		
β Regression coefficient	3.318		
T calculated	.001		

* Statistically significant at a level ($\alpha \leq 0.05$)

Table No. (18) that there is a statistically significant effect of risk assessment element in the management of operational risks, calculated F value indicates the significance of model as it reached (11.006) at a significance level (0.05), determination factor R2 reached (106. (That is, independent variable represented by risk assessment element explains (10.6%) of variance in operational risks in commercial banks operating in Jordan, which means that regression curve is good to describe the relationship between the dependent variable, independent variable, as indicated by correlation coefficient R (. 325) indicates the existence of a relationship between explained variable, the value of the dependent variable. This means rejecting the null hypothesis and accepting an alternative hypothesis that states that there is a statistically significant effect of applying the risk assessment component in managing operational risks in commercial banks operating in Jordan.

H03: There is no statistically significant effect of applying the control activities component in managing operational risks in commercial banks operating in Jordan.

Simple regression analysis was used to test this hypothesis, a mathematical model that was used for this purpose is:

$Y = a + bx + e$
where: Y = Operational Risk Management, a = constant term, b = the regression coefficient, x = Control activities, e = random error.

Table 19. **Results of simple regression analysis of the impact of applying the control activities component in managing operational risks**

Dependent variable	Operational risk management		
(R) Correlation coefficient	.443		
(R^2) Determination coefficient	.197		
F Calculated	22.761		
DF Degrees of freedom	1 Between totals	100 Residuals	101 Total
Sig* Indication level	0.000		
β Regression coefficient	4.771		
T calculated	.000		

* Statistically significant at a level ($\alpha \leq 0.05$)

Table 19 shows that there is a statistically significant effect of control activities component in managing operational risks, calculated F value indicates the significance of the model as it reached (22.761) at a significance level of (0.05), determination coefficient reached R2 (197. That is, the independent variable represented by the control activities component explains (19.7%) of variance in operational risks in commercial banks operating in Jordan, which means that the regression curve is good for describing the relationship between the dependent variable, independent variable, as indicated by the correlation coefficient R (. 443) indicates the strength of the relationship between explained variable, the value of the dependent variable. This means rejecting the null hypothesis and accepting an alternative hypothesis that states that there is a statistically significant effect of applying the control activities component in managing operational risks in commercial banks operating in Jordan.

H04: There is no statistically significant effect of applying information and communication component in managing operational risks in commercial banks operating in Jordan.

Simple regression analysis was used to test this hypothesis, a mathematical model that was used for this purpose is:

Y = a + bx + e
where: Y = Operational risk management, a = constant term, b = the regression coefficient, x = Information and contact, e = random error.

Table 20. **Results of simple regression analysis of the impact of applying the information and communication component on operational risk management**

Dependent variable	Operational risk management		
(R) Correlation coefficient	.383		
(R^2) Determination coefficient	.147		
F Calculated	16.025		
DF Degrees of freedom	1	100	101
	Between totals	Residuals	Total
Sig* Indication level	0.000		
β Regression coefficient	4.003		
T calculated	.000		

* Statistically significant at a level ($\alpha \leq 0.05$)

Table 20 shows that there is a statistically significant effect of information and communication components in managing operational risks in commercial banks operating in Jordan. The calculated F value indicates the significance of the model, as it reached (16.025) at a significant level of (0.05). Determination coefficient R^2 (.147), meaning that independent variable represented by information and communication component explains (14.7%) of variance in operational risks in commercial banks operating in Jordan, which means that regression curve is good for describing the relationship between the dependent variable, independent variable, as it indicates correlation coefficient, R, of (.383), indicates the strength of the relationship between explained variable, the value of the dependent variable. This means rejecting the null hypothesis and accepting an alternative hypothesis that states that there is a statistically significant effect of applying information and communication component in managing operational risks in commercial banks operating in Jordan.

H05: There is no statistically significant effect of applying a control component in managing operational risks in commercial banks operating in Jordan.

Simple regression analysis was used to test this hypothesis, a mathematical model that was used for this purpose is:

Y = a + bx + e
where: Y = Operational Risk Management, a = constant term, b = the regression coefficient, x = Observation, e = random error.

Table 21. **Results of simple regression analysis of the effect of applying the control component in managing operational risks**

Dependent variable	**Operational risk management**		
(R) Correlation coefficient	.527		
(R^2) Determination coefficient	.278		
F Calculated	35.730		
DF Degrees of freedom	1	100	101
	Between totals	Residuals	Total
Sig* Indication level	0.000		
β Regression coefficient	5.977		
T calculated	.000		

* Statistically significant at a level ($\alpha \leq 0.05$)

Table 21 shows that there is a statistically significant effect of control component in managing operational risks, calculated F value indicates the significance of the model, as it reached (35.73) at a significance level (0.05), determination coefficient R2 reached (278). That is, the independent variable represented by the control element explains (27.8%) of variance in operational risk in commercial banks operating in Jordan, which means that the regression curve is good for describing the relationship between the dependent variable, independent variable, as indicated by correlation coefficient R of (.527) To the strength of the relationship between explained variables, the value of the dependent variable. This means rejecting the null hypothesis and accepting an alternative hypothesis that states that there is a statistically significant effect of applying the control component in managing operational risks in commercial banks operating in Jordan.

5. Findings and recommendations

5.1. Conclusion

By analyzing the study data and discussing its hypotheses, its results can be summarized as follows:

1. The results of the study showed that there is an application of internal control elements (collectively) according to the COSO framework at an average level, as the general arithmetic average for the application of all these elements reached (3.36). The internal control applied in the public joint-stock companies in Palestine is in line with the COSO framework, to a high degree.

2. The results of the study showed that there is an average level of application of each of the internal control elements according to the COSO framework, namely the control environment, risk assessment, control activities, information and communication, and control. And 3.61, 3.31, and 3.21), respectively.
3. The study reached a ranking of the levels of application of each of the aforementioned internal control elements, and the application of the control activities component came first, then the risk assessment component, followed by the information and communication component, then the control environment component, and finally the monitoring component.
4. The study revealed the existence of an average level of sound practices for managing operational risks, where the general arithmetic means of the availability of those practices reached (3.57). This result differs from the study (Abdul Karim and Abu Salah 2007), which concluded that there is a decrease in the level of commitment of banks operating in Palestine to the basic principles of sound practices for managing operational risks, as most banks do not have the basic requirements for compliance with these practices.
5. The study confirmed the existence of a statistically significant impact of the application of internal control elements (combined) by the COSO framework in managing operational risks. Together, these elements explained (31.1%) of the variance in operational risk management.
6. The results of the study indicated that operational risk management is affected significantly with every component of internal control according to the COSO framework, which is the control environment, risk assessment, control activities, information and communication, and control (and .106, .197, .147, and .278, respectively).

5.2. Recommendations

Based on the results obtained in this study, the researcher recommends the following:

1. The importance of commercial banks operating in Jordan to enhance the levels of application of internal control elements following the COSO framework, because of the positive impact of the internal control system in managing operational risks.
2. Paying attention to good practices for managing operational risks and providing them to a greater extent, because of their importance in the banks under study due to their work in a rapidly changing and intensely competitive environment, which increases the likelihood of them facing operational risks
3. Working on developing the competence of workers in the fields of internal control systems and managing operational risks by holding more training programs and related workshops.
4. The banks' understudy should work to create a banking culture that emphasizes the importance of effective management of operational risks surrounding banking and limiting their negative effects.
5. The importance of establishing a specialized department for operational risk management by commercial banks operating in Jordan because of the increasing exposure of these banks to many operational risks.
6. Conducting more research on the relationship of operational risk management with other variables, considering it an effective way to reduce the exposure of business organizations to these risks and help them enhance their competitive position in light of the challenges of globalization.

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Internal/ Managerial Control – A Brief History of the Evolution of Internal Control Best Practices from International Inception to Romanian Actuality

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Abstract:

Research question*:* *The current article aims to present the gradual evolution of international to national practices of internal control, from the earliest dates in history to the shape it takes today, as well as the main international landmarks that define this managerial practice.*
Motivation*:* *The topicality of this subject is reflected by recent years' growing interest in in the organizational culture of the leaders of public entities. This interest has increased due to the various changes and obstacles that have occurred in the work carried out, which have disrupted the consolidation of the institution's performance and which have managed to create real imbalances between both managers and employees. In this way, a literature review recalls the early stages of this managerial practice, which were the key moments in its evolution and what has been preserved today for this practice to be successfully applied in all countries.*
Idea*:* *Our aim is to review the main legislative changes that have led to the development of the concept of internal control as we know it today.*
Data*:* *The article was conducted based on information found in audit and internal control books, articles from databases such as Web of Science, Science Direct, etc., reports of the General Secretariat of the Government on Managerial Internal Control, sources that are also presented in the paper's bibliography.*
Contribution*:* *The establishment of this paper is justified by the growing interest regarding the function of managerial internal control. This entails a better knowledge of this field which, although it has mandatory applicability, requires a much greater number of specialists due to the complexity and specificity of the sector that makes use of internal control.*

Keywords: *Internal control, INTOSAI, COSO, Management Internal Control Standards, public internal audit.*

1. Introduction

This paper is a review of the concept of internal control at the international level, with regard to the situation in Romania, to the legislation that defines the specific concepts and to the changes that have occurred with the implementation of these concepts as well.

The topicality of this subject is reflected by the growing interest of recent years in the organizational culture of the leaders of public entities. This interest has increased in

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recent years due to the great changes and obstacles that have occurred in the work carried out. These changes are of an economic nature, as well both of a social and political nature and have disrupted the consolidation of institutional performance. This managed to create real imbalances for managers and employees. There is an urgent need to implement and organize internal management control, as required by the efficient and effective use of budgetary resources.

2. Research methodology

2.1. Research criteria

Taking into account the fact that for this topic, internal control, the legal framework involves both international and national literature, the present research involves the use of the quantitative method. An exploratory method that helps us to see the opinions, attitudes and motivations of certain authors on this topic and the motivations underlying the research.

The data series used were the secondary ones, previously published in specialized literature, books, brochures etc.

2.2. Evaluation of study selection

From the identified articles, we have selected the ones that exactly illustrate the chosen topic. Since the present paper was subject to a literature review, the information regarding the international part is very extensive and thoroughly covers the most important historical events. For the information concerning Romania we have taken into account articles that were published before the latest legislative changes, but also those that appeared after.

2.3. The current state of knowledge

The current state of knowledge is very broad in terms of the chosen topic. Both foreign countries and Romania developed a strong interest in this management practice. Over time, through the need to capitalize on everything concerning capital, assets and profit, large companies have had to adapt to political, economic and social factors, and in this regard all these companies and public institutions have had to integrate principles that are performance-oriented in managerial activity and progress.

2.4. A brief history

Some preliminary work was carried out by Stone (1971) that states the earliest evidence of what is regarded and was to become internal control exists from the time of the Mesopotamian civilization (Sumerians), 3600-3200 B.C. In order to better manage the transactions made at that time, people used different means such as recording them on various stone surfaces using colored chalk or certain colored liquids to mark the surfaces. About 400 years later, these recordings were made using clay, thus the most commonly used tools were wood chips and stones. Markings in the form of circles, cutouts or even underlining can be observed on some samples, indicating that the checks were made in this way.

It is also known that in ancient Egypt, during the time of the pharaoh rulers, they held a great deal of wealth in the form of gold, silver and bronze coins, grain and valuables, and their treasuries were administered by scribes who were in charge of assessing and inventorying goods to assure the ruler that the wealth was well managed. All information was recorded on papyrus paper, and the scribes checked regularly with each other so that the information of one matched the information of others. The result was always submitted to the government scribe, who was superior to the others that were in charge of administration and verification, who in turn gave the necessary assurance to the Pharaoh.

The early twentieth century was significant for the United States as it was the time where greater importance was given to this managerial notion and practice, while providing professional guidance on what it entails and how it should be applied (Hay, 1993, p. 4).

The interest in internal control practices in the US comes against a background of massive development in emerging markets. Between 1850 and 1905, American industries made contact with the largest corporations in the world, fueled by the Industrial Revolution of the time, which allowed new sectors to develop (Hackett and Mobley, 1976, p. 3). Thus, the need for managers to ensure that the entire business of companies was conducted as transparently as possible was crucial, and this led to a growing interest in what was later to become a mandatory practice, that of internal control and audit. Through this practice, managers wanted all internal and external users of accounting information to be satisfied with the quality of the information, and this could only be done with the help of a regular control that gave assurance and transparency to what was reported.

During this time, all these events brought economic, social and political progress on all the existing industries and a financial control that rigorously examined the budget became an essential component in the transparency of public expenditures. In this way we also mention the Supreme Audit Institutions (SAIs) whose primary purpose is to oversee the use of public resources and ensure accountability and, as such, they are very important for public sector reform (Bonollo, 2019).

Ispir (2009) states that the exchange of experience between SAIs and their collaboration extends to the period between the two World Wars. After the Second World War, SAI considers it necessary to debate what related to control, audit and specific issues in its own congresses. In this way, year 1953 marks an important event such as the first congress of SAIs, which had 34 countries participating. From this point, we can say that The International Organization of Supreme Audit Institutions (INTOSAI) was officially born.

Another aspect that outlined a guideline on internal control and that took place within INTOSAI is the Lima Declaration (1977) is "considered the magna carta of government auditing and defines the characteristics and requirements for Supreme Audit Institution (SAI) independence and effective functioning. Forty years later, the Lima Declaration maintains its validity, and the United Nations General Assembly has recognized its eight fundamental principles in two of its resolutions' (www. http://intosaijournal.org/).

Last century was also considered significant in the name of internal control because the year 1985 came with what later became Committee of Sponsoring Organizations (COSO), which is a form of organization, by the major accounting and auditing professional organizations. Later on, in 1987 the Treadway Commission, which had some major responsibilities such as analyzing, inspecting and making recommendation on corporate financial reports which are fraudulent. The risk factors identified by the Treadway Commission provide a variety of issues for internal auditors to take into consideration when evaluating business (Perry and Jeffords, 2003).

Another remarkable event that led to the shaping of the practice of internal control relates to what would later become the biggest audit scandal of the 20th century: The Enron scandal. This corporate scandal in the US was caused by the numerous frauds that took place at the top of the largest American firms such as Enron or WorldCom. It led to their bankruptcy and the dissolution of one of the firms of the "Big Five', namely Arthur Andersen. The conclusion of these fraudulent acts was that not all the irregularities within the firm were detected by the internal controls and audits that were regularly carried out, and this highlighted the lack of professionalism of these professional bodies that were supposed to report the events. This scandal exerted a lot of pressure from the biggest players in the market at the time who wanted much more up-to-date legislation to avoid such allegations of fraud, and in 2002, the Sarbanes-Oxley Act was passed. Through the practices it imposes, the law aimed to increase the accuracy of financial reporting for all publicly traded companies.

A very important aspect in the Sarbanes-Oxley Act relates to "Section 404 - Evaluation of Internal Control', also known as "Famous 404' which requires external auditors to report not only on financial statements but also on internal control. This also means much higher fees from clients because the workload is much bigger due to the expanded reporting obligations.

Essentially, these events, which took place throughout history and were the subject of highly publicized scandals and frauds, paved the way to what was to become a law for many countries. In time and through the power of example, these countries acknowledged the importance of the activity of controlling and auditing and felt the positive effects that such practices have over the years on the entire business environment. Because of the increasing number of deficiencies in areas such as audit and accounting, the internal audit function has received greater attention. Therefore, there has been a much greater interest in corporate governance and financial reporting because qualitative internal control/ audit improves the quality of financial reporting by ensuring compliance with standards (Prawitt *et al*., 2008).

INTOSAI Framework

The International Organization of Supreme Audit Institutions (INTOSAI), an institution founded in 1952 in Havana, Cuba, has members who are supreme audit institutions around the world. They consider internal managerial control to be a "managerial tool used to provide reasonable assurance that management objectives are met'.

COSO Framework

Lawson *et al*. (2017, p. 31) say that COSO is an independent, private sector initiative sponsored jointly by the following organizations: The American Accounting

Association (AAA), the American Institute of Certified Public Accountants (AICPA), Financial Executives International (FEI), The Institute of Internal Auditors (IIA) and the Institute of Management Accountants (IMA). They also state "the 1992 Framework developed by COSO has been used by many firms to evaluate the design and effectiveness of their internal control'.

Martin *et al.* (2014) show in their study that the year 2013 came with a major revision of the COSO Framework where all the components from the 1992 version incorporated significant changes.

COSO defines internal control as "a process, effected by an entity's board of directors, management, and other personnel, designed to provide reasonable assurance regarding the achievement of objectives relating to operations, reporting, and compliance'.

According to the Report for 2019 on the state of implementation of internal managerial control systems at the level of public institutions where the function of chief credit officer of the state budget, the state social insurance budget and the budget of any special fund is exercised, "Basic principle of control internally through the prism of COSO is that it unitarily approaches the permanent objectives of the internal control system, its components and the organizational structure of the public entity, approach known generically and under the name of COSO cube. Thus: The objectives of the internal managerial control system are applied on five components of internal control, respectively Control environment, Performance and risk management, Control activities, Information and communication, Evaluation and audit, at all organizational levels of public entities, through internal managerial control standards.' These objectives were also taken over by the Romanian legislation in force (we will detail them below).

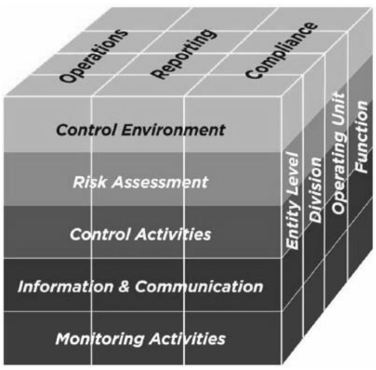

Figure 1. **COSO Cube**

(*Source*: https://i-sight.com/resources/coso-framework-what-it-is-and-how-to-use-it/)

2.5. Empirical and theoretical framework in Romania

At the national level, 1999 is a reference year for Romania because, the concept of Managerial Internal Control is practically first introduced with the publication in the Official Gazette Ordinance No. 119/1999 *on managerial internal control and preventive financial control, which regulates internal control, internal audit and preventive financial control in public institutions and on the use of public funds and the administration of public assets*. The legislative framework mentioned outlines clear objectives that any person/public institution must comply with when considering the implementation of internal control in its activity. These objectives are shown in Figure 1:

> *"1. Achieving, a level of application of the quality, of the public institutional attributions, established in accordance with their own mission, in conditions of regularity, effectiveness, economy and effciency.*
> *2. Protecting public funds against losses due to error, waste, abuse or fraud.*
> *3. Compliance with the law, regulations and decisions of management.*
> *4. Development and maintenance of systems for the collection, storage, processing, updating and dissemination of financial and management information and information, as well as appropriate public information systems and procedures through periodic reports." (General Secretariat of the Government (2020) "2019 REPORT ON THE STAGE OF IMPLEMENTATION OF THE MANAGERIAL INTERNAL CONTROL SYSTEMS AT THE LEVEL OF PUBLIC INSTITUTIONS WHICH EXERCISE THE FUNCTION OF MAIN AUTHORIZING OFFICER OF THE STATE BUDGET CREDIT, THE STATE SOCIAL INSURANCE BUDGET AND THE BUDGET OF ANY SPECIAL FUND")*

Figure 2. **General objectives of internal management control as laid down in Ordinance no 119/1999**

A new law is established in 2002, namely Law no. 672/2002 *on internal public audit* where the role of internal public audit is described as "a functionally independent and objective assurance and advisory activity designed to add value and improve the activities of the public entity; it helps the public entity to achieve its objectives through a systematic and methodical approach, assesses and improves the efficiency and effectiveness of risk management, control and governance processes'.

Constantin (2015, p.158) takes the view that, regardless of the approaches in Ordinance No. 119/1999 and Law No. 672/2002 on the notions of internal control and public internal audit, the two legislative frameworks complement each other by rendering definitions for terms such as "system audit', "performance audit', "regularity audit' and so on. The author also points out that O.G. no. 119/1999 stipulates internal audit as an independently organized activity under the direct supervision of the entity's manager, while Law no. 191/2011 considers public internal audit to be an independent and objective functional activity providing assurance and advice designed to improve the work of the public institution.

Ciuhureanu (2016) recalls specialists Bogdan (2004), Popeangă and Popeangă (2004) who inform the community that the functions of internal control are rendered as follows: "knowledge, evaluation, prevention, documentation, recovery, regulation, education and stimulation, learning and self-learning'.

According to Ispir (2009) Romania has been one of the EU Member States that has been in very tough negotiations with the European Commission regarding the reform process of its fundamental institutions, even in the area of internal control. He states that "as a country that joined the EU in the "second wave', Romania was subject of even more restrictive conditions than the countries that had joined in 2004'. Teodorescu (2015, p. 125) also considers that improving control systems was a major concern of the public administration before Romania joined the European Union.

Another aspect worth mentioning refers to the events from 2005 when the "Internal Control Code' is published by the Order of the Ministry of Public Finance no. 946/2005, which contains the 25 standards of internal/managerial control taken from the COSO model. On account of this model, which is successfully used in many countries, the Ministry of Finance identifies the key elements of internal/managerial control as: control environment, performance and risk management, control activities, information and communication, evaluation and audit.

Garitte and Tomoială (2020, p.301) believe that the Code of Managerial Internal Control of Public Entities can be considered as a qualitative indicator that can show, through an appropriate implementation of each subject area, a good financial management in public entities.

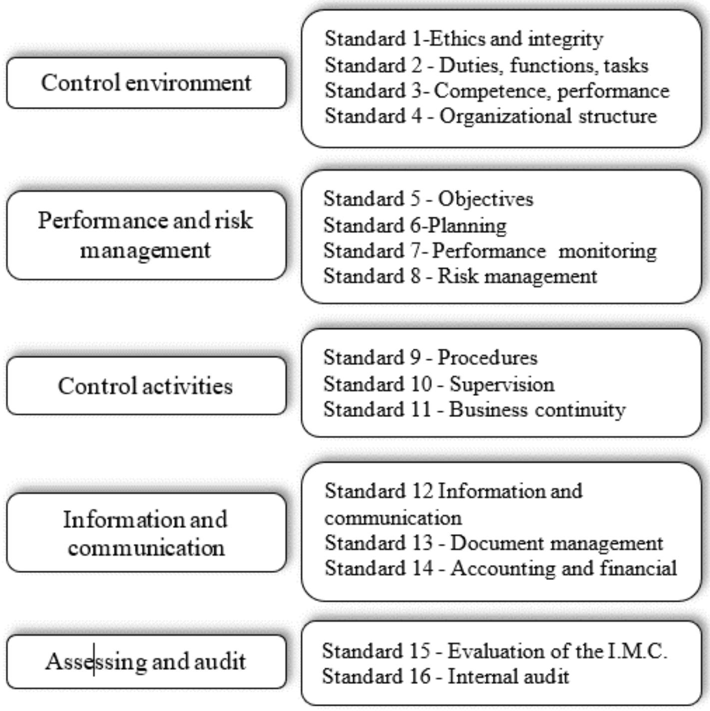

Figure 3. **Architecture of the Code of Managerial Internal Control of Public Entities**

(*Source*: "Handbook of Internal Management Control in the Public Sector', p. 63)

Ispir (2008, p.53) believes that the role of internal control standards is to establish a set of minimum management rules in order to help public entities. He also states "they are intended to create an even and consistent management model for public institutions, but also to constitute a reference system for the evaluation of internal control systems".

From a structural point of view, 2005 brought other changes, with the Ministry of Public Finance setting up the Central Unit for Harmonization of Financial Management and Control Systems (UCASMCF), a specialized directorate designed to ensure a unified framework in the field of public internal audit. In 2014, this directorate was taken over by the Secretary-General of the Government (SGG) within the Directorate for Internal Managerial Control and Inter-Institutional Relations (DIMCIR), based on Government Emergency Ordinance no. 86/2014 on the establishment of certain reorganization measures at central public administration level and for the amendment and completion of certain regulatory acts. The GEO 86/2014 introduces as a task of the DIMCIR to conduct the methodological guidance, coordination and supervision of internal management control systems at the level of public entities.

One year later, Law No.174/2015 approving Government Emergency Ordinance No. 86/2014 on the establishment of certain reorganization measures at the level of central public administration and for the amendment and completion of certain regulatory acts and revising the code of internal managerial control of public entities establishes the following:

✓Policy Development Obligations with respect to Internal Managerial System It is entirely up to the Secretary-General of the Government.
✓The activities related to the implementation, coordination and supervision of the internal managerial control systems belong to the Secretary-General of the Government.
✓The competencies of the Secretary-General of the Government are exercised by the Directorate for Internal Management Control and Interinstitutional Relations.

Figure 4. **Objectives and duties regarding Managerial Internal Control according to Law no. 174/2015**
(*Source*: Website of the Secretariat General of the Government www.sgg.gov.ro)

Currently, the Managerial Internal Control System is implemented in central and local public entities and is required to be updated on a permanent and mandatory annual basis. Particularly, the risk management process requires the updating of the Risk Register at entity level, as well as the updating of formalized procedures, if necessary. On this basis, the SGG considered it necessary to amend and supplement OSGG No. 400/2015 both to outline the organization, functioning and reporting of the Monitoring Commission and the constitution, organization, functioning and reporting of the Risk Management Team at the level of public entities, and to expand on the coordination, supervision and methodological guidance activities of the managerial internal control systems at the level of public entities.

Under these circumstances, in 2016, the DIMCIR of the SGG developed:

- OSGG no. 200/2016 for amending and supplementing PSGG no. 400/2015 on the approval of the Code of Managerial Internal Control of Public Entities;
- OSGG no. 201/2016 for the approval of the Methodological Norms on the coordination, methodological guidance and supervision of the implementation and development of the internal management control system in public entities.
- Updating of OSGG No 600/2018 and OSGG No 1054/2019.

Internal Managerial Control Standards

From an architectural point of view, the Code of Internal Managerial Control of Public Entities presents the 16 Internal Managerial Control Standards in five categories.

According to the prescriptions made by the COSO in 1992 (maintained even in the COSO revision of 2013) and taken over by the Order of the Secretary General of the Government no. 400/2015, the MIC standards are grouped into five categories, namely: control environment, performance and risk management, control activities, information and communication as well as evaluation and audit.

Control environment concerns the driving force of the functioning of a public institution, which encompasses requirements such as ethics and integrity, duties, functions and tasks, where we can talk about the delegation of responsibilities and accountabilities, recruitment and evaluation of employees, analysis of the organizational structure and how the organization operates.

Performance and risk management aims to assess risks as a continuous and dynamic process that public institutions must take into account throughout the implementation of managerial internal control. The iterative nature of this category (out of the 5 existing) covers everything from strategic and annual planning, performance monitoring and risk management.

Control activities ensure that risks related to the achievement of operational policy and internal control objectives are mitigated. They are carried out at all levels of the organization, at different stages of business processes and in the technological environment. They can be preventive or detective and include a range of manual and automated activities as well as segregation of duties.

Information and communication involves information needed for the organization to carry out internal control and support the achievement of objectives. There can be external and internal communication. External communication provides the public and stakeholders with information on the Commission's policy objectives and actions. Internal communication provides staff with the information they need to achieve their objectives and carry out daily controls.

Evaluation and audit are used continuously and specifically to determine whether each of the five categories of internal control is present and functioning. Continuous assessments, integrated into business processes at different levels of the organization, provide in due time information on potential weaknesses. Findings are assessed and deficits are communicated and corrected on time, while serious issues are reported as appropriate. The five categories follow a natural sequence aimed at the practical use of management functions in terms of both the entity and the departments concerned.

3. Conclusions and future research

The paper 'Internal/ Managerial Control - A Brief History of the Evolution of Internal Control Best Practices from International Inception to Romanian Actuality' provides a review of the literature on the notion of Internal Managerial Control, overviewing the specific concepts accepted by the major international audit and accounting bodies.

The present study analyzed a number of approximately 56 publications (1949-2020), including Romanian legislation, international legislation, local authors as well as foreign authors, articles indexed in international databases such as EBSCO, Emerald, ScienceDirect, and Web of Science.

In this paper, a presentation of the concepts of internal control was made. The most important professional bodies in the field of audit and internal control were highlighted, each system coming with its own dynamics and with an ever-wider area on the approach of the present subject.

Internal Managerial Control involves adapting general and specific objectives to economic, political, social, cultural and even pandemic-related changes by implementing specific measures adapted to the new challenges. The shock of the future also comes upon internal control with challenges that are not predictable at a certain point, but for which we must always be prepared. The computerization and standardization of internal control helps public entities, the managers of public entities and all those involved in this field to cope with the increasingly frequent changes that will occur in the current environment. The practice of audit should also be addressed from the perspective of a specialized teacher and coach on the implementation of managerial internal control.

An important aspect that stands as the object of the present research consists in the synthesis of the most important events in history that concern first, the birth of the concept of internal control and then, the professional bodies that issue directives in this direction.

From an international point of view, the presentation of the internal control was made from the perspective of COSO, being mentioned the COSO Cube and the objectives that are presented through its prism. At the national level, all the legislative changes that occurred with the first law together with the 16 standards according to which this concept works are mentioned.

Future research in this area will broaden its scope of knowledge due to the topics to be researched. Risk management, managerial internal control procedures as well as their implementation and integration in a public accounting perspective are some of the research we would like to publish. The motivational basis is provided by the need for knowledge and improvement in these areas, that aims to introduce other publications in the coming years and that will be subject to research.

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How Audit Committees in Companies Improve Internal Audit and Its Reflection on Financial Reports

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Abstract: *Recent years have witnessed great developments in the role of financial markets in developing countries' economies, and the reason was the growth of the international trade movement, But some companies failed to adhere to the norms and methods of controlling their operations, and these collapses led to negative repercussions on commercial and financial life on the local and international economy, then to negative consequences for the administrative bodies and members of boards of directors in these companies in terms of holding them directly responsible for the failure of their institutions. (Dahmash, 2008) Because of this, the focus is being made on the important role that non-executive board members can play in developing and approving preventive controls and systems in the field of control and directing the management of the companies they manage, through the presence of audit committees in these companies. The role of internal audit and audit committee in companies is upgrading directing operations to success by examining and evaluating financial, administrative, and operational activities, providing information to management at all levels to help in implements, this strategy correctly, and Internal auditing is considered as the administrative tool that can be relied upon in organizing business in companies to achieve the required goals. This research aims to clarify the role that the audit committee plays in Jordanian companies and its importance in improving internal audit processes, which is an important matter for both management and stakeholders, from the viewpoint of both internal auditors and members of audit committees.*

Keywords: *Internal audit, audit committee, internal control, corporate governance.*

1. Introduction

In recent times companies have witnessed important changes which required them to pay special attention to internal control systems and internal audits to be on a high degree of efficiency and effectiveness to ensure the protection of their assets and raise the efficiency of their employees, to abide laws and instructions issued by the administration. One of the reasons for interest in control systems was financial collapses, and administrative scandals that the world has witnessed during the past decades, which have bankrupted many of the leading and giant companies at global level, such as Enron and WorldCom in the United States, which led the shareholders in these companies incurring heavy losses, the responsibility fell on the shoulders of Administrative bodies and boards of directors, as it was found that there is a weakness in control and supervision processes, the managers in these companies so they are

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accountable for their mistakes, also the internal and external auditors failed to discover these errors.

Therefore, many international institutions and professional organizations around the world rushed to put a set of laws, controls, and ethical principles, for financial and non-financial control, through corporate governance, to protect investors and related parties from financial manipulation, and to enhance confidence and credibility in the accounting information contained in the financial statements, as the existence of independent audit committees in the organizational structure of companies is one of the basic pillars of corporate governance.

Many studies and researches have been conducted that dealt with causes of the collapse of these companies and concluded that the main reason is due to the absence of mechanisms and procedures of management, organization, control, effective supervision of companies to ensure achievement of set goals, adherence to internal regulations and laws governing the affairs of companies, and the Board of Directors is responsible for Providing the appropriate mechanisms to achieve these matters.

The separation of ownership from management and constant pursuit by management to achieve its interests through its main role in drawing and directing the company's strategy, and resorting to using innovative accounting methods and taking advantage of flexibility in their application were major factors affecting the value of the company and its competitive position in the financial markets, also the lack of proper understanding and implementation of corporate governance, weakness of internal auditing, is the most important feature of which leads to the absence of measures to limit management actions that lead to creating a negative impact on the value of the company, which directly affects on the wealth of owners (represented by the stockholders) and others of Stakeholders.

This needs the existence of the audit committee, composed of non-executive members; they must have experience in financial and accounting affairs and familiarity with the nature of the organization's activities, also the audit committees have been assigned many tasks and a role in improving internal control systems, supporting efficiency, independence of the external auditor, enhancing of financial statements, that will restore confidence, and reassurance to relevant parties in the organization.

As a result of increasing globalization activity of companies in various countries of the world, and increasing and continuous development in financial operations, it has become imperative for members of boards of directors of companies and members of their administrative apparatus to be more careful to control their activities by standards and controls to hold them accountable of results of their good management in these organizations, but financial collapses that occurred due to failure of some companies to adhere the norms and methods of controlling their operations had negative repercussions on commercial and financial life on the local and international economy this led to negative results on administrative bodies and members of boards of directors of Where they hold them directly responsible of failure of their institutions. (Dahmash, 2008).

From here, emphasis was placed on the important role that non-executive board members could play in developing and approving preventive controls and systems in the field of control and directing the management of companies manage, also the idea of audit committees came from the New York Stock Exchange, and Security Exchange Commission (SEC) which requested from public companies form audit committees from the members of the board of directors in it and required them to disclose in their financial statements if they have audit committees, to achieve confidence credibility in the information in financial statements that many users of these lists need, so governance appeared in many countries, especially after financial crises that witnessed (Al-Essawi, 2003).

The internal audit is considered as an important element and plays a prominent role in detecting errors and preventing their occurrence as possible, as well as in identifying weaknesses and working to correct them, which helps to establish a strong control system to achieve a vision, mission, and other competitive advantages for establishments to builds firm rules for the sustainability of their work, to identify and avoid risks facing companies, this necessitates the provision of an appropriate work environment while achieving independence and efficiency necessary for internal audit departments to achieve these goals, also the existence of audit committees emanating from boards of directors to play this role is important to improving the efficiency of internal audit departments.

The concept of internal audit has evolved from being an examination of facility's operations, books, records, and documents by its administration or a department within the establishment, where it has become known as "an independent and objective assurance and advisory activity designed to add value for the establishment to improve its operations, and it helps the facility to achieve its goals by creating a structured, rigorous approach to assessing risk management processes, improving their efficiency, activating oversight and guidance" (Jumaa, 2009) while providing advice to executive departments without influencing or avoiding facts, objectively without special Interests (Al-Wardat, 2006).

Importance of this study. The current research seeks to evaluate the role of audit committees' activities in improving the internal control system in companies from the viewpoint of internal auditors and audit committees, by answering the important question is what role audit committees play on reliability and effectiveness of financial statements, what are their tasks, responsibilities, and how do they work to enhance and add a kind of credibility to the financial statements and enhance disclosure.

2. Emergence of audit committees

The collapse of Penn Central Company in the seventies and the existence of cases of bribes that were provided by public shareholding companies operating in the field of foreign trade to foreign officials had an impact on the enactment of the Foreign Corrupt Practices Act, and this prompted both US Securities Commission and New York Stock Exchange. To recommend the formation of audit committees in public companies to ensure control and direction of companies' management that they manage in most American companies, where it has formed audit committees (Rocco, 1994).

In1977 the New York Stock Exchange called all public shareholding companies listed to establish audit committees, provided that the committee consists of members who are independent of management, since that date, the formation of audit committees has become one of the conditions that must be met for companies to be listed on the New York Stock Exchange (Fitzsimons *et al*., 2000).

Some proposed tasks and functions for audit committees, among them (Rocco, 1994).

1. Recommending the appointment or dismissal of the external auditor.
2. Review the audit plan and audit results with the external auditor.
3. Reviewing the scope and results of the internal audit.
4. Reviewing the independence of the external auditor.
5. Reviewing the adequacy of the internal control system.

In 1999, based on the recommendations made by the (Blue Ribbon Committee) the US Securities Commission adopted new disclosure instructions for audit committees, to improve disclosure in joint-stock companies and enhancing the reliability and credibility of financial statements. Whereas, which became effective from December 31, 2000.

The Treadway Commission which was formed in 1985 (this committee represents the American Institute of Certified Public Accountants, the American Association of Accountants, the American Institute of Financial Managers, the American Institute of Internal Auditors, and the American Institute of Management Accountants) played an important role to study fraudulent (fake) financial reports in US companies, in 1987, this committee issued recommendations aimed at increasing the effectiveness of audit committees were (Bean, 1999):

1. Audit committees should have the financial resources and authority to carry out their responsibilities.
2. Audit committees should review management's assessment of the independence of the external auditor.
3. The Securities Commission shall oblige companies to form audit committees made up of members independent of management.
4. The Securities Commission shall request the audit committees to issue a report describing their responsibilities and activities during the year within the company's annual report.
5. The audit committees must develop a written guide explaining their tasks and objectives.

The Auditing Standards Board (ASB) issued audit circular no. (SAS No. 90) that external auditor of public joint-stock companies must discuss with both management and audit committee his assessments about the quality of accounting principles used by the company and reflected in financial statements and not Just how tolerable it is. This standard became effective at the beginning of the financial year 2000.

In Great Britain, the Financial Audit Committee for British Companies, known as Cadbury in 1992, recommended that joint-stock companies form audit committees and that the committees develop a written guide of their duties and recommended that the committee meets with an external auditor at least once a year without the presence of management, and audit committee responsibilities, are:

1. Presenting recommendations to the Board of Directors regarding the appointment, fees, continuation, and dismissal of the external auditor.
2. Review annual financial statements.
3. Discussing external auditors about the nature and scope of auditing.

4. Review management message.
5. Reviewing the scope of internal control in the company.
6. Reviewing internal audit program.
7. Review any important matters that may arise during the internal audit.

According to the American Securities Commission, audit committees play an important and decisive role in financial reports by monitoring management, external auditor, and increase the disclosure process, which makes the investor more confident about the integrity of the financial reports.

In Jordan, the Central Bank of Jordan obligated banks to form audit committees from among members of boards of directors from the beginning of 1996 so that they would be a monitoring link between internal and external auditors, he set the general framework for this audit committee and leave banks with the mechanism of committee's work according to their requirements. Then, Banking Law No. 28 of 2000 was issued, which banks became obligated to form audit committees from non-executive board members (Jordanian Banking Law No. 28 of 2000).

Jordan Securities Commission issued disclosure instructions and accounting standards no. (1) In 1998, this provides for the formation of audit committees in Jordanian public shareholding companies consisting of three non-executive board members (Disclosure Instructions, Jordan Securities Commission, 2004).

2.1. Research problem

Internal auditing is one of the most important administrative means in controlling companies, it serves the board of directors and helps it in protecting assets, controlling and reviewing financial statements, ensuring their accuracy and extent of reliance on them to achieve production efficiency, predetermined management plans, and ensuring that employees adhere to administrative policies and plans. Therefore, we try to answer this question by this study:

What is the role that the audit committee plays in improving internal audits in Jordanian companies?

Several sub-questions emerge from this question:
- What is the role of the audit committee in enhancing the independence of internal auditors in Jordanian companies?
- What is the role of the audit committee in improving the annual internal audit work plan in Jordanian companies?
- What is the role of the audit committee in improving internal audit function from the viewpoint of internal auditors and members of audit committees?

2.2. Research importance and objectives

The importance of this study to know the reality of internal audit and audit committees in Jordanian companies, as audit committees are safety valve through which companies 'boards of directors can properly implement their policies, instructions, plans, and reach goals and visions they seek to achieve, and the role of audit committees in raising the level of internal auditing in Jordanian companies, in a manner that ensures achieving an element of trust with stakeholders, such as current and potential shareholders, creditors, customers, and society.

This research work on how audit committees must ensure internal audit departments assist executive departments in identifying and analyzing risks that negatively effect on company's objectives, the role of audit committees in improving the efficiency of internal audit in companies, by providing independence means necessary for its required work efficiently, in addition, to do its role in supervising and controlling all work related to accounting, and auditing in companies.

2.3. Research hypothesis

The main hypothesis of the research is:

H0: There are no statistically significant differences in opinions of internal auditors in the Internal Audit Department and members of the companies' audit committees about the contribution of audit committee's activities to improving internal auditing in companies.

The hypotheses of study try to find expected solutions to the problem of study, and there have been prepared two sub-hypotheses, as follows:

- *H01: There is no relationship between the role of audit committees and improving the independence of internal audit in Jordanian companies.*

- *H02: There is no relationship between the audit committee and its role in improving the annual internal audit work plan in Jordanian companies.*

3. Previous studies

Abd and Ibrahim (2019) study aimed to analyze the impact of characteristics of audit committees on voluntary disclosure practices, reached results, the most important characteristics of the audit committee can assess the efficiency of bank's internal control system, which will be reflected in the accuracy of voluntarily disclosed of financial statements.

Hamidi *et al*. (2017) study aimed to find out the role that the audit committee plays in improving internal auditing in Iraqi companies and the most important results reached, is the existence of a role for the audit committee in strengthening the independence of internal audit in companies with an emphasis on the need for internal audit departments to adhere to laws and implement tasks and responsibilities specified according to regulations and instructions Also, there is a role of the audit committee in improving internal audit work plan in companies.

Al-Shawoura and Al-Hamaydeh (2010) study aimed to study and analyze the role of internal audit units in improving the efficiency of audit committees emanating from boards of directors in Jordanian public joint-stock companies, and that an effective and strong internal audit unit would enhance the role of audit committees, protect and immunize various stakeholders of using lists fictitious financial, which may lead them to make wrong investment and financing decisions, and concluded that most elements of reference for internal audit units, if they are managed, implemented effectively, will consequently lead to raising, improving the efficiency of audit committees.

Al-Momani (2010) study showed that boards of directors adhere to a medium degree for each of the controls for forming audit committees, their working mechanisms, and that audit committees still lack independence and full effectiveness.

Tamer (2010) study deals with the nature of audit committees, composition, responsibilities, objectives, and extent for them in commercial banks, as an effective tool in monitoring administrative authorities, strengthening internal audit department, and their reflection on the validity of financial statements. The results of the study, that presence of audit committees in commercial banks works to strengthen the independence of the internal auditor, helps in raising efficiency and effectiveness of the internal audit department, helping management to carry out its legal responsibilities efficiently and effectively, also coordinate work of external and internal auditors, which leads to improved communication between the two teams.

Al-Marai (2009) study found that the audit committee has a role in strengthening the independence of internal audit in Jordanian insurance companies, reviewing internal audit activities, and ensuring that internal audit adheres to policies, administrative decisions, regulations, and contributing to improving internal audit work plan.

Zhang *et al*. (2007) study relied on companies that have a weak control system and compared them with companies that have a strong control system by determining the size of the company, its performance, and the nature of its activities. The study concluded that whenever an audit committee contains some financial experts, this leads to the existence of a weak internal control system, weakness of committees auditing, where the poor performance of audit committees is directly related to the number of financial persons in these committees.

Krishnan (2005) study aimed to examine the relationship between quality of audit committee by several dimensions, namely: the size of the audit committee, independence of the members of the audit committee, and the experience of members of the audit committee, to know the relationship between the quality of internal audit and the effectiveness of internal control system, the study concluded that there is a strong relationship that differs from one company to another, according to the nature of its activities, relationship in industrial companies is stronger than in service companies.

4. Theoretical framework of research

Internal auditing is one of the most important tools that company boards of directors used to help them ensure the commitment of executive departments of these companies in implementing policies and regulations that have been established, to achieve goals, as well as to raise the effectiveness of performance of all company’s activities, to measure the ability of management to preserve available resources, to increase the confidence of stakeholders in them, thorough examination, evaluation, detection of errors, manipulation, and fraud, submission of accurate periodic reports to make appropriate decisions to correct deviations, to assist management of companies in developing plans, where internal auditing is described as the eyes and ears of management (Dahmash, 2008).

4.1. Concept and types of internal auditing

Internal audit was defined as an independent evaluation function established within internal audit function to provide institution's management to study and evaluate its activities as a service to an institution with continuous information that works on the accuracy of internal control systems, actual implementation within each of departments in the institution, efficiency, validity of results of activity and financial position of the institution that reflects effectiveness and efficiency of accounting system used. (Moeller, 2008).

Internal auditing plays a vital role in discovering errors and fraud, in verifying the correctness of records and data, availability of necessary means to preserve resources available to economic establishments, which made it an imperative necessity for modern management to maintain survival, growth, continuity of enterprises, and to help its boards of directors to ensure the safety of procedures and processes that occur inside it, by providing it with accurate periodic reports on various activities; to take appropriate decision, correct deviations, then lay down necessary future policies and plans (Al-Wardat, 2006).

4.1.1. Historical development of internal audit

The professional beginning dates back to the establishment of the Institute of Internal Auditors in the United States of America in 1941, the institute worked to support, develop an internal audit. Various efforts to improve the professional position of the internal audit function, through the issuance of the first guide that includes a list of internal audit responsibilities and development continued until initial standards of professional performance in internal auditing were established.

In 1974, which defined internal auditing at the time, as "an independent evaluation function that is established within economic units to examine and evaluate their various activities, that goal of internal audit is to assist members of economic units in effectively carrying out their responsibilities, by providing them with data, providing appropriate advice and recommendations regarding".

The development in information technology and computerized financial systems has led to further development in the auditing profession, the new definition of internal auditing was formulated Based according to the American Institute of Internal Auditors in 2007 as "an independent, assertive, objective, consulting activity that aims to increase returns, and improve organization's operations, helps it achieves its objectives systematically to evaluate and improve the effectiveness of risk management processes" (Institute Of Internal Auditors, 2007).

According to the modern concept, the internal audit includes two functions, which are:

- **Objective Assurance Service**: It is an objective examination of the evidence for purpose of providing an independent evaluation of the effectiveness, adequacy of risk management, control systems, and governance processes in the department.
- **Consulting services**: It is consultation processes that are provided to organizational units inside or outside the establishment, the nature of the scope of these operations is determined in agreement with those companies, the aim is to add value to the unit, and improve its operations.

This development led to an evolution in objectives of internal audit, which became:

- Increase the value of the company; improve its operations through the participation of management in planning the company's strategy, and providing information that helps it implements that strategy.
- Evaluating and improving the effectiveness of risk management.
- Evaluating and improving the effectiveness of supervision.
- Evaluating and improving the effectiveness of corporate governance processes.

4.1.2. Types of internal auditing

1. **Operational audit**: It is a comprehensive examination of all operational activities, an evaluation of control and performance systems of the entire organization as specified in objectives of administration, this type of audit is concerned with non-financial operations, effectiveness and efficiency of use resources to evaluating performance, providing recommendations, improvements, and necessary development.
2. **Financial audit**: It is a comprehensive examination of all accounting entries for events occurring within the institution, both accounting and documentary, the financial auditing includes verifying the existence of assets ensuring that appropriate protection is provided to prevent embezzlement, negligence, or theft, also examining the accounting system and its effectiveness.
3. **Administrative audit**: It is an examination of important matters related to various management processes that are directed towards objectives of the institution, that includes examining and auditing policies, procedures, plans, systems, control methods, and working methods for purpose of assisting management in taking decisions, proposing solutions to problems facing the institution, as well as evaluating method of managing risks (Al-Shather, 2007).
4. **Compliance audit**: It includes an examination of the institution's operations, and whether its activities are carried out by policies, objectives, and plans declared, as well as the extent of compliance with laws and government instructions and judgment on quality, suitability of the institution (Al-Ghazzawi, 2008).

Among tasks of internal auditing in the COSO Document (committee formed of the Institute of Management Accountants, the Institute of Internal Auditor, the International Financial Executives Association, and the American Association of Accountants), which was developed to evaluate the effectiveness of the role of internal audit system, internal audit must submit its reports to the audit committee, the board of directors and to all higher administrative levels, so that these reports contribute to the continuation of economic unit's work, and confirm the effectiveness of internal audit in showing any gaps in commitment, implementation of plans, policies of boards of directors at any level of management (Jarboa, 2007).

Therefore, internal audit function focuses on protecting assets, auditing financial operations, developing its concept to include financial and administrative auditing, within acceptable standards by appropriate and applicable accounting policies.

4.1.3. Importance of internal auditing

In 2009 the global economy witnessed the worst financial crisis that started from American real estate sector and spread to the insurance sector, banking sector, and soon took place in the American economy, then the crisis spread to all world, this increase the interest of internal auditing systems, and corporate governance (Sweidan and Zureik, 2009).

Also, the importance of internal auditing appeared because of agency problem in companies, which means separation of ownership from management as a result of the increase in the size of companies, which calls for delegating departments to make decisions on behalf of shareholders, in addition to the emergence of multinational companies or multi-branch companies in other countries, which require delegating some central higher management powers to branch managers to carry out their duties.

Boards of directors became responsible for protecting the rights of all stakeholders, this needs tools to help them, the most important is audit committees that set necessary procedures to achieve the goals of boards of directors, ensure that these procedures are adhered to through the internal audit department that verifies the safety of work, provides it with accurate periodic reports for various activities to take appropriate decision, to correct deviations, and to develop plans for these companies.

4.1.4. Internal audit objectives

Internal auditing requires the existence of control tools such as administrative control systems, computerized systems, and internal control systems to ensure smooth flow of work, and to ensure those errors, fraud, manipulation, or embezzlement of assets in economic units or their accounting records. (Dahdouh, 2007).

The objectives of the internal audit include the following:

1. Examine and evaluate financial and administrative activities through an adequate understanding of the company's operations, so that the role of internal audit staff is to discover errors within the company, reduce risks, and ensure the integrity of procedures, data, and financial reports.
2. Providing the audit committee with the necessary information to help achieve control and protection of the company's assets and operations, identify weaknesses or any risks they face department to take appropriate decisions.
3. Ensure optimal and effective use of resources of economic units.
4. Ensure that means are in place to ensure the protection of assets and properties of economic units and their effectiveness.
5. Evaluating regulations, instructions, procedures that regulate the work of economic units, and ensuring their ability to achieve the economic benefit of establishment, their compatibility with laws, regulations, legislation, and general standards to enhance its performance.
6. Assisting economic units in identifying and assessing risks, the means of protection necessary to avoid or eliminate the risk according to capabilities available to the company.

4.1.5. Internal audit quality

The quality of internal audit is based on the good performance of the internal control system, as well as the appropriateness of applied accounting system, to reach appropriate effectiveness, efficiency in operations, restrictions, on an ongoing basis within the organization for purpose of serving its objectives and protecting assets. Auditing quality is also defined as the ability of auditing to discover weaknesses in the internal control system to make recommendations address them or reduce them, the possibility of achieving maximum possible benefit for the organization.

Where internal audit reports are prepared according to scientific foundations, recognized standards, where a good report plays an important role in communicating information to beneficiaries, and it must write reports in an easy, correct, direct language, and with a scientific approach, realistic and accurate, to inform senior management of observations briefly and concisely, and recommendations resulting from audit work.

Therefore, the factors of quality of internal audit function according to standards issued by the Institute of Internal Auditors were represented by independence, objectivity, professionalism, and due diligence (IIA, 2003b).

The performance of internal auditing for its modern functions and improving its performance requires the availability of two sets of standards, namely:

1. Standards for characteristics represented by characteristics of entities that perform internal audit activities, such as individual objectivity, organizational independence, threatening factors, competence and necessary professional care, continuous professional development, qualifications, and experiences.
2. Performance standards that describe the nature of internal audit activities, through which performance of the company is evaluated, such as objectives, the scope of internal audit work, planning, communication, policies, procedures necessary for risk management, control, and corporate control.

In the implementation of requirements of corporate governance, the Institute of Internal Auditors issued an upgrade to internal audit standards “IIA” to keep pace with economic developments in two groups, as follows:

1. **Trail Standards:**

It is a set of four main standards issued by the Institute of Internal Auditors that deal with characteristics of companies and individuals who perform internal audit activities in them, they are as follows:

A. The purpose of responsibilities entrusted to those in charge of internal audit activities, the purpose of powers granted to them, necessity to formally record them in an internal audit list that is approved by the highest authority in the company.
B. Independence regarding internal audit activities, objectivity in performing these activities, and objectivity in expressing the final opinion of internal auditors.
C. The Excellence in performance of the Internal Auditor for Internal Auditing Activities and necessary professional care in their performance.
D. Quality of Internal Auditing, its submission to evaluation, and improvement processes.

2. **Performance Standards:** These are seven main standards issued by the Institute of Internal Auditors that describe internal audit activities, standards by which performance of those activities is measured, which are:

A. The management of internal audit activity, whose control is the responsibility of the director of the audit department in the company. This department should be efficient and effective to enable internal audits to create additional value for the company.

B. The nature of internal audit work, as internal audit activity, must evaluate, contribute to improving risk management, control, and corporate governance.
C. Work task planning
D. Business Task Performance, as internal auditors, must identify, analyze, evaluate, and record sufficient information to achieve the objectives of the task they are undertaking.
E. Communicating Results, as internal auditors must communicate the results of audit work at appropriate time and method.
F. Monitoring progress with the director of the internal audit department, who should establish a system for work; take responsibility for maintaining, monitoring, and communicating results to management.
G. Management's Acceptance of Risks has become part of internal audit work activity, the head of the audit department in the company should make sure of level that management accepts from risks so he must discuss the matter with high management, and then he goes to the Board of Directors to reach an appropriate solution (Khalil: 2005).

4.1.6. Internal audit of Jordanian laws and instructions

The attention of internal auditing in Jordanian laws and instructions after issuance of Securities Law No. (76) / 2002 issued by Securities Commission and Banking Law No. (28) / 2000), the instructions for disclosure of companies, plus accounting standards, and auditing standards which issued 2006.

4.2. Second: The concept of audit committees and their importance

Audit committees are defined as a committee consisting of several non-executive board members, to provide a vision of the extent to which corporate governance is achieved, they must have a direct role with shareholders through a separate report from the annual report, and the committee seeks to ensure that management is qualified and experienced to ensure their ability to effectively manage risks, experienced to ensure their ability to commit to allocating sufficient, a good time of control task, review, accountability, and to follow up on the extent of adherence to ethical values, governance arrangements (Hammad, 2005). Al-Dunaibat (2010) defined it as a "committee that usually consists of non-executive directors in a company, and the main objective of its formation is to increase the effectiveness of audit function plus increase accountability of management".

From previous definitions, it can be said that there are three characteristics of an audit committee, namely:

1. A committee emanating from the company's board of directors.
2. Its membership is only limited to non-executive members who have a high degree of independence and experience in the field of accounting and auditing.
3. The responsibility of the audit committee is related to reviewing financial reporting processes, reviewing internal and external audits, and reviewing compliance with the application of corporate governance rules within the company (Suleiman, 2006).

The importance of audit committees stems from the expected benefits that they can provide to all related parties, such as the board of directors, external auditor, internal auditor, shareholders, and stakeholders. (Suleiman, 2006).

Also, audit committees are one of the requirements and benefits of corporate governance, they aim to achieve a balance between internal and external parties, taking into account responsibility towards stakeholders, as well as carrying out supervision and control process that aims to ensure management is in company operates according to interests of its owners (Suleiman, 2006).

4.2.1. Emergence and importance of audit committees

Audit committees arose after the emergence of fraud, and manipulation cases that led to the collapse of many companies in the USA, so the US Congress passed a law requiring the formation of audit committees in every company; to limit manipulation in managing profits of companies, through which these profits are maximized, the financial position of the company is not shown fairly. Several studies, such as Chen *et al*. (2005) have proven that American companies that have audit committees have achieved greater returns and profits than companies that do not have audit committees.

4.2.2. Independence of the members of the audit committees

Independence is one of the important conditions that must be met by members of audit committees, as a member of the audit committee is considered non-independent according to the NASDAQ listing instructions if he has one of the following:

1. If he is an employee of the company, of which he is a member of an audit committee or one of its subsidiaries in the current year or previous three years.
2. If he accepts compensation from the company of which he is a member of an audit committee or one of its affiliates exceeding (60) thousand US dollars during the previous fiscal year, excluding compensation for being a member of the board of directors or from the retirement system or non-optional compensation.
3. If a member of the immediate family is employed as an executive director of the company or one of its subsidiaries.
4. If he is a partner, controlling shareholder, or executive director of a for-profit business enterprise in which the company, of which he is a member of an audit committee, received or paid amounts over (5%) of the total consolidated revenues for that year or ($200,000), whichever is higher, during the previous three years.
5. If he is an employee in an executive position for another institution and at the same time one of the executives in the company, he is a member of the audit committee of the compensation committee in that institution works. (www.nasdaq-amex.com, 1999).

4.2.3. Characteristics of audit committees

For audit committees to perform their work efficiently and effectively to contribute positively to activating corporate governance mechanism, the work of these committees must be subject to a set of controls and standards as follows:

1. Necessity of having experience and integrated skills among the members of the audit committee
2. Independence of the audit committee
3. Defining the powers and functions of the audit committee (Hamdan and Mushtaha, 2011).

4.2.4. Functions of audit committees

For audit committees to achieve the goals, their work tasks must be precisely defined, to supervise accounting and control works and to ensure compatibility of operations carried out by the company with laws and regulations, to reassure shareholders about the efficiency of work of the board of directors, to improve quality of the performance of economic units, and to increase Shareholder confidence (Al-Sweiti, 2006). Based on the foregoing, the tasks of the audit committees are as follows:

A. Functions of audit committees related to accounting and administrative work.
B. The duties of the audit committee to the control work.
C. The duties of the audit committee to risk management.

4.2.5. The relationship with related parties

A. **Board of directors**: The establishment of the audit committee helps executive members of the board of directors to carry out their duties, responsibilities to accounting, auditing aspects by improving communication between the board of directors and external auditor, by meeting with the external auditor, communicating results of these meetings to the Board of Directors, and assisting solving problems that auditor may face with company's management regarding the preparation of financial statements.
B. **External auditor**: the audit committees play a role in strengthening the independence of external auditor in a manner that leads to him carrying out his duties without pressure or interference from management, and the role of audit committees in appointing the external auditor, determining his fees, solving problems that may arise between management and him, and increasing interaction between the external and internal auditors.
C. **Internal auditor**: The audit committees select the head of the internal audit department, provide the necessary resources for this department, continuous meeting with him to solve any problems that may arise between him with management, which leads to an increase in his independence, activation role of the internal audit department.
D. **Investors, external parties, and employees**: The establishment of audit committees leads to increased reliability and transparency in accounting information and reports issued by institutions, which leads to increased confidence of investors and external parties in these reports. Another interest is customers, especially the permanent ones, about the ability of the facility to continue as a source of the needs of customers and employees, its ability to generate cash flows, the adequacy of these flows, and this requires basic information for investors and lenders (Suleiman, 2006).

4.2.6. Responsibilities of audit committees

Audit committees' responsibilities include carrying out basic activities such as:

1. Evaluating management's procedures in identifying and reducing fraud risks, as administration implements procedures to assist in detection and reduction of fraud.
2. Overseeing internal control applied to management when preparing financial reports, and searching for the possibility of abuses from administration or inappropriate use.
3. A reasonable comparison of current financial results with previous or expected.
4. Evaluating and documenting department's operations regarding the handling of daily restrictions that were introduced manually and closing process of reporting cycle Financial.
5. Evaluating and documenting the department's operations, procedures for totally important estimates used in the financial reporting process.

6. Establishing a program for employees to motivate them to report fraud and unethical behavior.
7. Provide other insights and guidance on implementing or enhancing fraud mitigation measures (Dahdouh and Mohammed, 2013).

By looking at Article No. (7) Of Instructions on Corporate Governance No. (2) of 2006, it is noted that the audit committee should have certain key elements such as:

A. **Independence:** Independence requires that the committee includes members from the non-executive board of directors, so the audit committee consisting of independent non-executive board members better position to assess the quality of financial disclosure, the adequacy of internal control, and evaluating Administrative and company performance (Center for International Private Enterprise, 2003)
B. **Financial experience:** Due to the complexity of corporate capital structures, and application of accounting standards, the importance of having qualified audit committee members who are financially knowledgeable, can read and understand financial statements including the company's balance sheet, income statement, and cash flow statement (Center for International Private Enterprise, 2003)
C. **Efficiency:** The audit committee should have experience and competence so that he has sufficient training and the necessary skills to help him access pertinent information, reports, so each member of the audit committee must have a high degree of understanding of the company's business (Hammad, 2005).

4.2.7. Audit committees in Jordan

Jordanian legislation has affirmed the necessity for the audit committee to consist of three non-executive members, for at least two of them to have scientific qualifications or practical experiences in the field of auditing, or financial experiences commensurate with nature of companies 'activities, that the number of independent members is not less than two An independent member means, according to the definition of Corporate Governance Manual for the year 2007, as "the member who has no relationship with the company, with a senior executive management employee, with an allied company, or with the company's external auditor or anything that affects his decisions or his exploitation of his position in the company" (Corporate Governance Guide 2007).

Many bodies are interested in the existence of audit committees in Jordanian companies, including:

1. **The Central Bank of Jordan:** Which obligated banks that "companies' boards of directors must form audit committees from among their members", according to Banking Law No. 11, which obliges banks to form audit committees of non-members. Executives (Banking Law, 2000).
2. **The Jordan Securities Commission (JSC):** In 2004, (JSC)issued instructions regarding the disclosure of companies, accounting standards, auditing standards, which obligated boards of directors in companies to form an audit committee consisting of three members who are not Executives members, it assigned them many tasks, powers, and responsibilities to enhance disclosure and transparency in the financial statements, and support the independence of the internal and external auditor, which is reflected in integrity, accuracy of the financial statements announced in companies (The Securities Commission, 2004).
3. **The Corporate Governance Manual**: It was issued by the Arab Society of Certified Accountants as a result of the increased interest in forming audit

committees in Jordanian companies, as it stressed that "within the organizational structure of every company there shall be an audit committee that provides support to the management of the company whose activities have become more complex or to financial institutions that are diversified concerned parties" (Arab Society of Certified Accountants, 2007).

5. Methodology

The research in preparing this study relied on a descriptive and analytical approach that is based on collecting data from two sources**:**

A. **Secondary sources:** These are summarized in reviewing accounting literature related to the concept of internal auditing, internal auditing standards, and procedures that auditors must implement to perform their duties, in addition to the concept of audit committees, and instructions that concerned audit committees, then clarifying the relationship between internal audit and audit committees by reviewing books, previous studies**.**

B. **Primary sources:** These are summarized in designing a questionnaire addressed to internal auditors, internal audit managers, members of audit committees in Jordanian companies, to know the role of audit committees in improving internal audit function in Jordanian companies from the point of view of both internal auditors and members of audit committees.

5.1. Population and sample

The practical study was applied to Jordanian companies where the research relied on the descriptive and analytical approach, to reach logical results that support the hypothesis of the study, with a sample of internal auditors and audit committees' members, where 133 questionnaires were distributed, and 86 questionnaires were retrieved with a response rate of 65%.

5.2. Tool

The questionnaire was relied upon as the main primary source to collect the data necessary for the study, and it was divided into two parts. Section one contains personal information about the respondent, such as job, academic qualification, scientific specialization, work experience, and whether he holds professional certificates to describe the study sample.

Section 2 contains a set of questions to identify the following variables:

1. Special questions to clarify the role of the audit committee in enhancing the independence of internal audit in Jordanian companies
2. Special questions to clarify the role of the audit committee in improving the internal audit work plan in Jordanian companies

The five-point Likert scale was adopted to determine the degree of agreement of the sample on each paragraph of the questionnaire and then use the Statistical Social Sciences Package for (SPSS) program was relied upon to analyze the results and test the hypotheses of the study. Moreover, these methods can be summarized as:

A. **Descriptive statistics methods:** By presenting results of the study and describing answers from which questionnaire questions emerged. It is one of the most important indicators for measuring Arithmetic Mean * the central tendency and it is widely used in studies. We used to measure the average answers to study questions and to rank the importance of items and the degrees of approval or rejection of the items included in the questionnaire.

B. **One Sample T tests (Hypothesis):** The criterion of acceptance, which is the middle category of Likert's five-point scale adopted in the study tool to verify the validity of the hypotheses.

6. Results and discussion

Based on the results of the questionnaire, the following shows the role of the audit committee's activities in improving the internal audit from the point of view of the internal auditors in the internal audit departments and the audit committees in the companies and their activities.

6.1. Results of descriptive statistics of the study variables

The role of the audit committee in enhancing the internal audit function in Jordanian companies was examined, and for that, it used descriptive statistical methods of the questionnaire, by analyzing the answers of questions, to identify the relationship between the roles of audit committees in improving the efficiency of internal audit role in Jordanian companies.

6.1.1. Characteristics of the sample

Table 1: **Distribution of the study sample according to demographic characteristics**

Variable	Categories and designations	Duplicates for internal auditors	Duplication of audit committee members	% of internal auditors	% of audit committee members
Scientific specialization	Accounting	28	10	43.1	47.6
	Finance and Banking	17	5	26.2	23.8
	Business Administration	12	3	18.5	14.3
	Economic	5	1	7.7	4.8
	Different specialties	3	2	4.5	9.6
Academic qualification and professional certificates	Without a bachelor's	2	0	3.1	0
	Bachelor	43	10	66.2	47.6
	M.A.	15	9	23.1	42.9
	PhD	5	2	7.6	9.5
	Professional certification	25	7	38.5	33.3
	Lack of professional certification	40	14	61.5	66.7
Years of job experience	5 years or less	7	0	10.8	0
	6-10 years	35	4	53.8	19
	11-15 years old	16	10	24.6	47.7
	16-20 years old	5	4	7.7	19
	21 years and over	2	3	3.1	14.3
	Total	**65**	**21**	**100%**	**100%**

Table 1 shows that internal auditors that the highest percentage of specialization was (43.1%), which is for accounting, then finance & banking with a rate of (26.2%). This indicates that the study sample individuals are qualified to work in the accounting and financial fields. Table 1 also shows that members of the audit committees that the highest percentage is (47.6%), was accounting, then finance and banking with a rate of (23.8%), This indicates that the study sample individuals are qualified to work in the accounting and financial fields. Additionally, it shows that internal auditors have (66.2%) of the study sample have a bachelor's degree then a master's degree is (23.1%), so we notice an increase in the educational attainment level of the study sample due to increased interest in education and the percentage of who hold a professional certificate reached (38.5%) of the sample. Also, Table 1 shows for internal auditors that the highest percentage of the study sample is concentrated in the experience category (6-10 years) with (53.8%) of the total sample members, then experience category (11-15 years) is (24.6%), finally, the category (21 years and over) constituted (3.1%). The members of the audit committee that the highest percentage of study sample individuals are concentrated in the experience category (6-10 years), with the percentage of (47.7%) of the total sample members, finally, experience category (21 years and over) constituted (14.3%).

This is an indication that the study sample is good and sufficient to carry out the tasks assigned to them, it gives them an additional positive advantage that enables them to deal with the accounting matters related to their work in a great professional manner.

Table 2 shows that members of the audit committee also have (47.6%) of who has a bachelor's degree, and the percentage of a master's degree is (42.9%), so we notice an increase in the educational attainment level of the study sample due to increase in education. The percentage of holders of professional certificates reached (33.3%) of the sample.

Table 2. **Arithmetic averages and standard deviations and (t) for the answers of the study sample members, members of the audit committee (AC) to identify the relationship between the role of audit committees and improving the efficiency of internal audit in Jordanian companies**

Question	SMA	Std	T value	Denotation of t	Degree of impact ability
1. AC works on the existence of an organizational structure for the internal audit department in the company that guarantees independence, impartiality, and objectivity by placing it at the top of the organization	4.35	0.955	9.712	0.000	high
2. AC informs the Board of Directors (BD) on the observations and recommendations of the Internal Audit Department (IAD)	4.26	0.923	8.672	0.000	High
3. AC ensures that there is a clear work guide that outlines the instructions, policies, and procedures necessary to guide internal auditors	4.12	0.867	9.001	0.000	High
4. AC follows up on the executive management's response to the remarks of the IAD and the corrective actions taken by it	4.10	0.915	8.774	0.000	High

Question	SMA	Std	T value	Denotation of t	Degree of impact ability
5. AC defines the conditions that must be met by the Director of the Audit Department and determines the method of his appointment	4.01	0.816	9.182	0.000	High
6. AC supports the internal auditor's opinion if it is correct and contrary to the management opinion	3.99	0.657	10.951	0.000	High
7. AC discusses with the internal auditor the level of risks identified during the audit process and how to address them	3.95	0.881	7.248	0.000	High
8. AC reviews the plans, programs, and timetable work policies of the IAD, and their compliance with the applicable laws, regulations, and administrative decisions.	3.93	0.891	7.540	0.000	High
9. AC requests the IAD to provide justifications for the delay in implementing its work programs or plans	3.88	0.945	6.891	0.000	High
10. AC affirms that management is responsible for concealing any information necessary to perform the functions of the internal audit department	3.85	0.915	6.665	0.000	High
11. AC works to provide a cadre in the IAD with high scientific and practical skills	3.77	0.975	5.760	0.000	Medium
12. AC contributes to providing the necessary needs, means and facilities, to enable the internal auditor to carry out his work	3.69	0.904	5.398	0.005	Medium
13. AC ensures that there is a specialized training program in risk assessment, and management for internal auditors, to improve their professional capabilities	3.54	0.971	3.757	0.015	Medium
14. AC ensures that the employees of the IAD adhere to professional ethics and business conduct	3.48	0.915	3.585	0.032	Medium
15. AC regularly evaluates the capabilities of the employees of the IAD	3.25	1.415	1.525	0.049	Medium
16. AC works to develop the effectiveness of computerized audit systems	3.12	1.105	0.995	0.075	Medium
The overall average	**3.83**	**0.9406**	**6.6035**	**0.011**	**High**

Table 2 shows that arithmetic averages ranged between (4.35-3.12), where the overall average of respondents' answers was (3.83) with a high degree of appreciation, and the value of(t) on the paragraphs of the field as a whole amounted to (6.60) and the average of (t) values is of 0.011, so the value of the statistically calculated function (t) reached α at the level of (significance t) calculated (0.075) which is not significant at the level of Indication 0.05.

In general, the arithmetic averages of the respondents' answers for all the paragraphs were higher than the hypothetical average (Test Value = 3), indicating that the respondents' evaluation was positive and that there is a relationship between the role of audit committees and improving the efficiency of internal auditing in Jordanian companies. Therefore, we accept the alternative hypothesis that states "The existence of a relationship between the role of audit committees and improving the efficiency of internal audit in Jordanian companies", and that the degree of evaluation of this relationship is high according to the results of the analysis for this hypothesis.

Table 3. **Arithmetic averages and standard deviations and (t) for the responses of the study sample individuals for internal auditors in companies to identify the relationship between the role of AC and improving internal audit efficiency in Jordanian companies**

Question	**SMA**	**Std**	**T value**	**Denotation of T**	**Degree of impact ability**
1. AC ensures that there is a clear work guide that outlines the instructions, policies, and procedures necessary to guide internal auditors	4.35	0.954	9.745	0.000	High
2. AC works on the existence of an organizational structure for the internal audit department in the company that guarantees independence, impartiality, and objectivity by placing it at the top of the organization	4.28	0.946	9.643	0.000	High
3. AC determines the conditions that must be met by the Director of the Audit Department and determines the method of his appointment	4.08	0.861	9.050	0.000	High
4. AC supports the internal auditor's opinion if it is correct and contrary to the management opinion	4.01	0.697	9.126	0.000	High
5. AC follows up on the executive management's response to the remarks of the IAD and the corrective actions taken by the AC. The audit committee discusses with the internal auditor the level of risks that are identified during the audit process and how to address them.	3.99	0.658	8.954	0.000	High
6. AC requests the IAD to provide justifications for the delay in implementing its work programs or plans	3.88	0.887	8.522	0.000	High
7. AC affirms that management is responsible for concealing any information necessary to perform the functions of the IAD	3.71	0.910	6.631	0.000	Medium
8. AC informs the Board of Directors on the observations and recommendations of the Internal Audit Department	3.66	0.947	4.977	0.000	Medium
9. The Audit Committee reviews the plans, programs, and timetable work policies of the IAD and their compatibility with applicable laws,	3.57	0.997	4.187	0.000	Medium

Question	SMA	Std	T value	Denotation of T	Degree of impact ability
regulations, and administrative decisions.					
10. AC works to provide a cadre in the IAD with high scientific and practical skills	3.49	0.938	3.976	0.000	Medium
11. AC ensures that there is a specialized training program in risk assessment and management for internal auditors, to improve their professional capabilities	3.42	0.974	4.276	0.000	Medium
12. AC ensures that the employees of the IAD adhere to professional ethics and business conduct	3.38	0.935	2.559	0.005	Medium
13. AC contributes to providing the necessary needs, means, and facilities, to enable the internal auditor to carry out his work	3.34	0.890	2.442	0.025	Medium
14. AC regularly evaluates the capabilities of the employees of the IAD	3.22	1.090	1.592	0.034	Medium
15. AC works to develop the effectiveness of computerized audit systems	3.15	0.958	1.215	0.055	Medium
16. AC ensures that there is a clear work guide that outlines the instructions, policies, and procedures necessary to guide internal auditors	3.10	1.210	0.425	0.072	Medium
The average for the answers	**3.66**	**0.928**	**5.4575**	**0.0119**	**Medium**

Table 3 shows that arithmetic averages ranged between (4.35-3.10), where the general average of respondents' answers was (3.66) with a moderate degree of appreciation, and the value of (t) on all the paragraphs of questions as a whole amounted to (5.457), and the average of all (t) values is 0.012, and The value of computed function ≤α was statistically at the level of significance (t) (computed) (0.72 and 0.055) and it is not significant at the level of significance 0.05. Generally, arithmetic averages of the respondents' answers for all the paragraphs were higher than the hypothetical average (Test Value = 3), indicating that the respondents 'evaluation of these paragraphs was positive and that there is a relationship between the role of audit committees and improving the efficiency of internal auditing in Jordanian companies.

From the above, we accept the alternative hypothesis that states that there is a relationship between the role of audit committees and improving the efficiency of internal audit in Jordanian companies and that the degree of evaluation of this relationship is moderate according to the results of the analysis.

Table 4. **To identify the relationship between the role of audit committees and improving the efficiency of internal audit in Jordanian companies for each of the internal auditors (IA) compared to the members of the audit committee (MAC) in companies according to the following table**

Question	SMA		Standard deviation		Significance for t		Differences in:		
	IA	MAC	IA	MAC	IA	MAC	SMA	STD	SIGt
1. AC ensures that there is a clear work guide that outlines the instructions, policies, and procedures necessary to guide internal auditors	4.35	4.12	0.954	0.867	0.000	0.000	0.23	0.087	0.000
2. AC works on the existence of an organizational structure for the internal audit department in the company that guarantees independence, impartiality, and objectivity by placing it at the top of the organization	4.28	4.35	0.946	0.955	0.000	0.000	0.07-	0.009-	0.000
3. AC determines the conditions that must be met by the Director of the Audit Department and determines the method of his appointment	4.08	4.01	0.861	0.816	0.000	0.000	0.07	0.045	0.000
4. AC supports the internal auditor's opinion if it is correct and contrary to the management opinion	4.01	3.99	0.697	0.657	0.000	0.000	0.02	0.040	0.000
5. AC follows up on the executive management's response to the remarks of the IAD and the corrective actions taken by the AC. The audit committee discusses with the internal auditor the level of risks that are identified during the audit process and how to address them.	3.99	4.10	0.658	0.915	0.000	0.000	0.11-	0.257-	0.000
6. AC requests the IAD to provide justifications for the delay in implementing its work programs or plans	3.88	3.95	0.887	0.881	0.000	0.000	0.07-	0.006	0.000
7. AC affirms that management is responsible for concealing any information necessary to perform the functions of the IAD	3.71	3.88	0.910	0.945	0.000	0.000	0.17-	0.035-	0.000
8. AC informs the BD on the observations and recommendations of the IAD	3.66	3.85	0.947	0.915	0.000	0.000	0.19-	0.032	0.000
9. AC reviews the plans, programs, and timetable work policies of the IAD and their compatibility with applicable laws, regulations, and administrative decisions.	3.57	4.26	0.997	0.923	0.000	0.000	0.69-	0.074	0.000
10. AC works to provide a cadre in the IAD with high scientific and practical skills	3.49	3.93	0.938	0.891	0.000	0.000	0.44-	0.047	0.000
11. AC ensures that there is a specialized training program in risk assessment and management for internal	3.42	3.77	0.974	0.975	0.000	0.000	0.35-	0.001-	0.000

Question	SMA		Standard deviation		Significance for t		Differences in:		
	IA	MAC	IA	MAC	IA	MAC	SMA	STD	SIGt
auditors, to improve their professional capabilities									
12. AC ensures that the employees of the IAD adhere to professional ethics and business conduct	3.38	3.54	0.935	0.971	0.005	0.015	0.16-	0.036-	0.010-
13. AC contributes to providing the needs, means, and facilities, to enable the internal auditor to carry out his work	3.34	3.48	0.890	0.915	0.015	0.032	0.14-	0.025-	0.017-
14. AC regularly evaluates the capabilities of the employees of the IAD	3.22	3.69	1.090	0.904	0.032	0.005	0.47-	0.186	0.027
15. AC works to develop the effectiveness of computerized audit systems	3.15	3.25	0.958	1.415	0.049	0.049	0.10-	0.457-	0.000
16. AC ensures that there is a clear work guide that outlines the instructions, policies, and procedures necessary to guide internal auditors	3.10	3.12	1.210	1.105	0.075	0.075	0.02-	0.105	0.000
Average	**3.66**	**3.83**	**0.928**	**0.9406**	**0.011**	**0.0119**	**0.166-**	**0.01238-**	**0.000**

Table 4 shows where it is noticed that the general average of arithmetic means of the first group of audit committees was (3.66), and for the second group of internal auditors, it reached (3.83), meaning a general difference between the two averages amounted to (-0.166) only, as well as the general average of standard deviation for the first group of audit committees reached (0.928), and for the second group of internal auditors (0.9406), that is, a general difference between the two rates was (-0.01238) only, and mean difference of significance t was zero, and this indicates that answers of respondents from both categories are close, and this indicates the neutrality in respondents' answers to each Paragraphs for study data.

This hypothesizes was tested from viewpoint of both internal auditors and members of audit committees, in addition to views of both. The points that have been paid attention to and have achieved high degrees of importance, as their arithmetic mean was higher than 4, are as follows:

1. **From the viewpoint of audit committee members:**

A. The audit committee works on the existence of an organizational structure for the internal audit department in the company that guarantees independence, impartiality, and objectivity by placing it at the top of the organization
B. The Audit Committee informs the Board of Directors on observations and recommendations of the Internal Audit Department
C. The audit committee ensures that there is a clear work guide that shows instructions, policies, and procedures necessary to guide internal auditors
D. The Audit Committee follows up on executive management's response to remarks of the Internal Audit Department and corrective actions it made
E. The Audit Committee determines conditions that must be met by the Director of the Audit Department and determines the method of his appointment.
F. This indicates the interest of members of audit committees in previous points, as the arithmetic mean of answers was high and it is higher than 4 and thus it is high.

2. **From the internal auditors' point of view**

A. The audit committee ensures that there is a clear work guide that shows the instructions, policies, and procedures necessary to guide internal auditors

B. The audit committee works on the existence of an organizational structure for the internal audit department in the company that guarantees independence, impartiality, and objectivity by placing it at the top of the organization

C. The Audit Committee determines conditions that must be met by the Director of the Audit Department and determines the method of his appointment

D. The audit committee supports the internal auditor's opinion if it is correct and contrary to the management's opinion

E. This indicates the interest of internal auditors in previous points, as the arithmetic mean of answers was high and it is higher than 4 and thus it is high.

3. **The viewpoint of internal auditors and members of audit committees together.** Both internal auditors and members of audit committees agree on the importance of each

A. The audit committee works on the existence of an organizational structure for the internal audit department in the company that guarantees independence, impartiality, and objectivity by placing it at top of the organization

B. The Audit Committee ensures that there is a clear work guide that shows the instructions, policies, and significance for t

C. Procedures necessary to guide internal auditors

D. The Audit Committee determines conditions that must be met by the Director of the Audit Department and determines the method of his appointment

E. This is evidence of the agreement of the two parties on the importance of the above points. As for the remaining points, there is a difference between the two parties regarding their importance from their point of view together.

7. Conclusion

The results showed that the presence of audit committee in Jordanian companies led to improvement and strengthening of internal audit processes, which is an important matter for both management and stakeholders, from point of view of internal auditors and members of audit committees in companies as the existence of audit committee had an important role in improving the internal control system, its effectiveness when these activities are exercised and have a role in enhancing the independence of internal audit in Jordanian companies, audit committee makes sure that location of internal audit department is located in an appropriate place in organizational structure, which enhances the independence that allows it to carry out its duties.

The audit committee also played a role in reviewing internal audit activities in Jordanian companies, ensures that the internal audit department adheres to policies, administrative decisions, regulations, and laws, and improves internal audit work plans in Jordanian companies. So they work together to improve the internal audit function in Jordanian companies.

The results of the study also showed that there is agreement on the importance between internal auditors and members of corporate audit committees on a set of points, including the existence of a role for the audit committee on the existence of an organizational structure for the internal audit department in the company that guarantees independence, impartiality, and objectivity by placing it at the top of the organization as it makes sure that there is evidence clear work that shows the instructions, policies, and procedures necessary to guide internal auditors, and it works on defining conditions that must be met by audit department manager and determines the method of his appointment.

However, there is a difference in opinion of both internal auditors and members audit committees about the importance of a set of points, including:

- The audit committee informs the board of directors of observations and recommendations of the internal audit department and the extent of its follow-up to extent of executive management's response to remarks of the internal audit department.
- On other hand, results of the study showed agreement on low importance between them on a set of points, including audit committee makes sure that employees of the internal audit department adhere to ethics of profession and work behavior, as well as evaluating capabilities of employees in audit department regularly, and it is working to develop the effectiveness of computerized auditing systems.
- Finally, internal auditing is a control tool that companies avoid cases of default and bankruptcy, it is one of the mechanisms of corporate governance, due to the development of the concept of corporate governance, internal auditors have been obligated to work on evaluating internal control systems, risk management while adhering to local and international auditing standards, to ensure adequate disclosure of contents Financial and non-financial, mentioned in the annual report of the joint-stock company, in a way that helps shareholders and other stakeholders to make a good investment decision.

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A Bibliometric Analysis of the Audit Quality at Global Level

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Abstract: *The paper aims to highlight the main topics debated in the literature regarding the financial audit quality, that were indexed Web of Science, focusing on articles published between 2001 and 2020. Based on the literature review, the purpose of the article is to highlight the most important concepts that can influence the quality of services provided by financial auditors, but also to provide a framework for future research on the financial audit quality area, using bibliometric analysis. The paper pointed out which are the most relevant keywords that were correlated with audit quality, but also which are the most important authors who debated this topic in their research, and who were the most cited authors in the articles analyzed, as well as the countries with the highest number of publications. The data were analyses with VOSviewer software based on the topic of the audit quality on keywords, authors, citations and geographical distribution. It was obtained 3173 articles that are indexed by Web of Science, of which the most relevant keywords were: audit quality, audit fees, independence, auditor tenure, corporate governance and earnings management. The largest number of articles have been published in countries such as USA, Australia, and Canada, and the best-known authors have been Gul F., Francis J., and Li C. In addition, Gul F., Knedel R., and Lobo G.J. were the most cited authors for articles relating to audit quality.*

Keywords: *Audit quality, Web of Science, VOSviewer, bibliometric mapping, analysis.*

1. Introduction

In the last years, especially after the major financial scandals (in which the role of auditors has not always been neutral), there is a growing concern to study the indicators that influence the audit quality, maybe as a result of questioning the social utility of the audit engagement. Gunn and Michas (2017) specified that in recent decades, the field of audit quality has become increasingly at the global level, which has led to concerns about the ability of audit firms to conduct high-quality audits in foreign geographical operations.

In his wish list in the top ten for audit research, Nusbaun (2007) identified "the meaning of improving audit quality" as an important area for future research. He added that we need to start by addressing fundamental questions: What is quality? What does it mean to bring an audit quality?

In order to better understand these starting points, I believe that we need to look at the effect of audit quality on the credibility that audited financial statements have for both stakeholders and financial audit quality control entities.

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The aim of this paper is represented by the bibliometric analysis of the existing literature in this area. To obtain the most viable results, have been selected the articles that have debate the topic of the financial audit quality, that is indexed Web of Science in the period 2001-2020.

For the bibliometric analysis was opted for the VOSviewer software, which were analysed the relationships between the keywords used in the selected articles, the most representative authors, the geographical dispersion of the publication of articles that debated the topic of the audit quality, but also the most cited authors in this area.

This paper is a starting point for future quantitative research, based on an econometric model, that include the dependent variable "audit quality" and as independent variables the most relevant keywords obtained from the bibliometric analysis.

The article is structured as follows: the following section contains a summary of the relevant literature on audit quality, while the next sections describe the research methodology and the results of the bibliometric analysis. The last section includes the conclusions and the reference.

2. Literature review

Xhensila (2016) considered that the domain of audit quality has been a blockbuster topic in recent years. According to the authors Pizzini *et al*. (2015), audit failures since the early 2000s have raised concerns about the timeliness and reliability of accounting reports.

The perception of the audit quality may depend very much on the perspective from which it is viewed. Users, auditors, regulators, the companies, all stakeholders may have very different views on what constitutes audit quality, which will influence the type of indicators used to evaluate the quality of the auditor services. Users of financial reporting may associate a high quality audit with the absence of significant misstatement. The auditor that performing the audit can define the high quality of an audit as the satisfactory performance of all tasks required by the firm’s audit methodology. The audit firm may evaluate a high audit quality as one against which work can be supported and demonstrated in an inspection. Regulators may see a high quality as one in which professional standards have been met and applied. Finally, society may consider a high-quality audit to be one that avoids economic problems for a company or even for the market (Knechel *et al*., 2013).

The quality of the audit is also influenced by the audit standards applicable in each country based on the legal system applied and whether the oversight authority has adhered to international standards (Simunic *et al*., 2014).

To measurement the audit quality is a difficult process because is not a direct measurement of the audit quality, so audit users have to use various indicators, such as audit fees or even the reputation of the audit firm, to evaluate the audit quality and the trust level of the financial reports (Diem, 2016).

In this approach, Lim and Tan (2007) researched the relationship between the non - audit services and the quality of audit services, conditioned by the auditor's specialization. The author opted for a sample of 1692 companies, from 2000 to 2001 and concluded that audit services have a higher quality when customers purchase non-audited services from industry specialists.

Ayadi (2013) examined the impact of the corporate governance on the quality of external audit services, taking into account quality indicators such as audit fee, company size and international dimension. The research results show that the presence of a significant proportion of independent directors on the Board of Directors affects positively the quality of audit services.

Eshleman and Guo (2013) suggests that high audit fees indicate that the auditor has made greater efforts, but at the same time, can consider it a threat of auditor independence.

The auditor's independence significantly influences the quality of the audit services, which in turn is affected by audit fees. Measures to improve the audit quality can be taken by developing independent attitudes and setting sufficient audit fees (Suseno, 2013).

In addition to the quality of financial reporting, the quality of the audit also depends on the characteristics of the companies and the financial reporting systems (DeFond and Zhang, 2014). Firms in countries with low audit quality regulations call for higher quality to increase investor protection (Francis, 2011).

Because of the global financial crisis, audit clients were able to negotiate lower audit fees during the recession. Thus, an inverse relationship was found between the pressure of reducing audit fees and the quality of the audit (Ettredge, 2014). This situation has not been confirmed in the case of US banks (Krishnan and Zhang, 2014).

In the literature, there are opinions for and against the mandatory rotation of auditors. A study of Chinese companies suggested that mandatory rotation of engagement partners resulted in high-quality audits in the years leading up to the rotation date (Lennox *et al.*, 2014).

Hackenbrack *et al*. (2014) specifies that negotiated audit fees contain significant information for investors and that, if were disclosed immediately after the signing the engagement letter, the information asymmetry between managers and investors would be reduced.

Cameran *et al.* (2015) conducted a study on the audit market from Italy, finding that in the first three years after auditor rotation, the quality of audit services and audit revenue is lower compared to subsequent audit years.

Grosh *et al*. (2016) considered that the auditor independence is also reflected in the debt to obtain sufficient and adequate audit evidence, based on which to issue his opinion. Even in this respect, obtaining audit problems represent a challenge in the case of items such as goodwill or accounting estimates, because their verification is more difficult.

Chen and Hassan (2017) argue that companies that have a collaboration culture can improve the quality of information available within the organization, this high-quality information environment being examined and analyzed by auditors, which leads to a lower audit risk and lower audit fees.

Haak *et al*. (2018) specified that a high allocation balanced of audit activity between audit firms, reduces the audit quality and increases audit fees compared to an unbalanced level of work allocation.

Sule *et al*. (2019) found that a qualitative level of an audit engagement could also increase the auditor’s continuing education.

According to the authors Pittman *et al*. (2019), the characteristics of the individual auditor have an important role in the audit quality. Examining the implications for audit quality on partners’ risk tolerance is a common test for their risk profiles that affect their performance and is reflected in the audit results.

In India, the government has introduced the need for mandatory rotation of audit firms following calls to improve audit quality and auditor independence. However, the case study conducted by Narayanaswam and Raghunandan (2019) suggested that mandatory rotation of audit firms does not lead to improved audit quality, reduced audit fees or increased competition in the market.

Haţegan (2019) presents in her study case the importance of the audit quality both for investors and for professional accountants and auditors. Variables (auditor’s opinion, auditor’s rotation, auditor’s size, audit fee, audit report and corporate governance) were tested based on a sample of seven companies listed on the BSE in 2013-2018. An important conclusion from the case study is that the auditor’s opinion is based on professional skepticism, but in practice can be influenced by several indicators such as the audit firm size, auditors’ experience, audit fees and many others.

Crucean and Haţegan (2019) developed a qualitative study about the factors that influence the quality of audit services. The results of the study show that audit quality is influenced by several factors, starting from the professional training of the auditor, the experience and skills that he has, the allocation of tasks fairly for the entire audit team, the time spent effectively within the audit commitment (audit hours), but also by the audit fees charged. Also, the independence of the audit firms of the individual auditor, the type of auditor (refer to the affiliation to the Big4 group), and the auditor rotation represent important aspects in evaluating the quality of audit services.

The auditor size, the industry specialization and the audit fees influence the quality of audit services, especially when firms are more financially constrained and external monitoring by institutional investors and financial analysts is weaker (Lim *et al*., 2020).

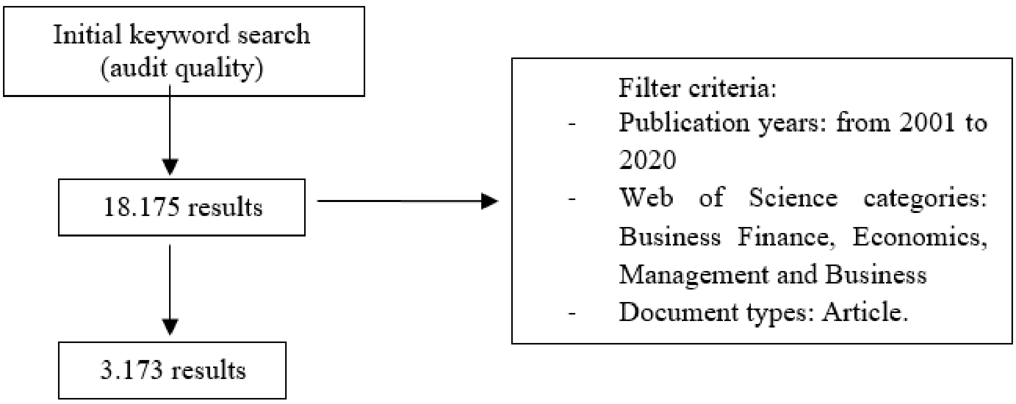
The characteristics of the auditor that influence the audit quality are based more on the members of the audit team, their experience, knowledge of the client’s industry, responsiveness and compliance with audit standards (Carcello *et al.*, 1992). Auditor characteristics such as educational experience, experience of Big4 audit firms, audit firm reputation and political affiliation can influence audit quality (Gul *et al*., 2013). Also, other important auditor characteristics are partner variation (Cameran *et al*., 2020). Choi *et al*. (2010) found that the size of the auditor's office has significantly positive relationships with both audit quality and audit fees, large local offices provided higher quality audits compared to small local offices.

Taqi *et al*. (2021) performed a bibliometric analysis based on the R Biblioshiny software. The data were collected from the Scopus database, respectively the articles that contained the phrase "audit quality" and were published in the period 1981-2020, obtained 499 articles. Based on the general results of the research, the topic of the audit quality research is identical to the accounting area. This is supported by research results which show that the word accounting is the most relevant word after the word audit and quality. The audit quality is evidence of performance reports on management, especially in corporate accounting and corporate governance. Audit quality can be considered a corporate governance mechanism that reduces the agency's problems, information asymmetries between company stakeholders and protects against losses resulting from audit report errors.

In addition, Ciger (2020) developed a bibliometric analysis of the articles published in the field of social sciences in the Scopus database on audit quality. This analysis included 1419 articles, published from 1981 to March 2020. For this research was used R software. The main results revealed the orientation of the studies to this topic and the increased number of articles published after the year 2000, more precisely after the great scandal in the USA.

3. Methodology

The data were collected from the Web of Science database on April 6, 2021. Initially, there were selected only papers that contained the expression "audit quality", obtained an initial number of 18.175 results. To select the most relevant articles for this topic, was applied three filters, respectively was selected a period of 20 years (2001-2020), a period that represents two decades of significant changes and challenges in the audit area, especially after the period of major scandals in the USA. Another selection factor was the Web of Science Category, selected four areas: Business Finance, Management, Business and Economics, and the type of documents was "article". After applied these filters, was obtained a total number of 3173 relevant articles.



The bibliometric analysis was performed by including in the sample the last result, the most relevant 3173 articles.

The distribution of articles by years is represented in Figure 1, based on data obtained from the Web of Science database.

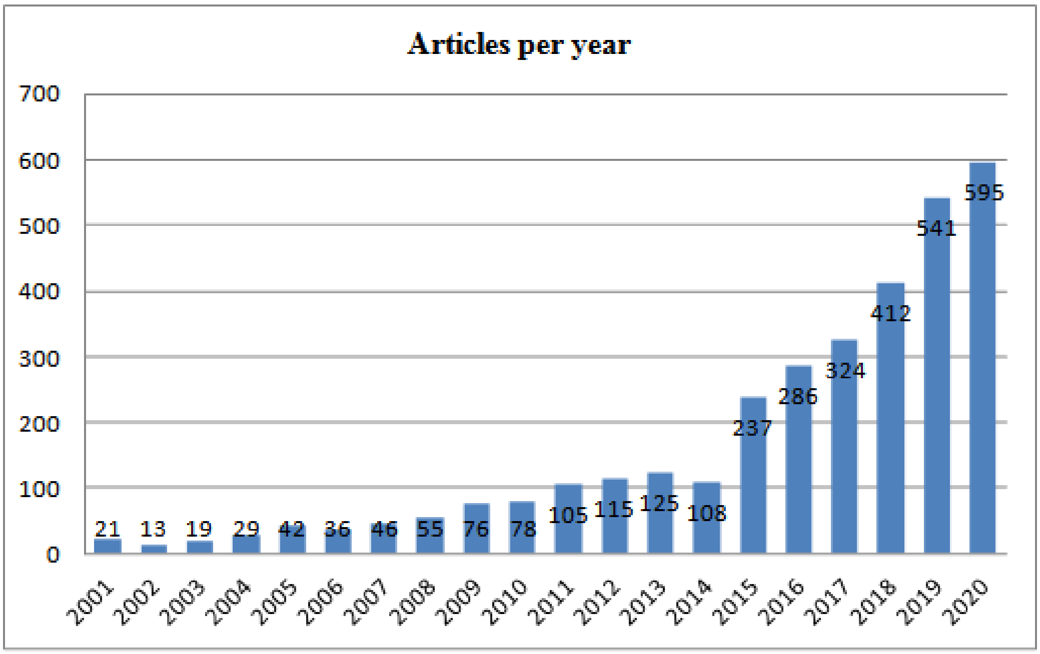


Figure 1. **Number of articles published per year**
(*Source*: Author's projection through Web of Science results)

It can be seen in Figure 1 that the authors' interest about the topic of audit quality has increased; from 21 articles published in 2001, to 595 articles published in 2020 and is currently expanding. The interest has grown a lot since 2015 because of the new regulations appeared on the capital markets.

The bibliometric analysis was done with the VOSviewer software, and the mapping of the results was performed according to the keywords, authors and citations.

4. Results

4.1. Keywords analysis

Was analyzed the relationship between keywords in order to highlight the distribution of the most common keywords that appear in the selected papers. To highlight which are the most relevant, out of 3,173 articles considered from the Web of Science, the VOSviewer softer highlighted 7,764 keywords. It was opted for a "bibliographic map" because the analysis was based on a file that contained all the selected articles from the Web of Science.

To highlight the link between the most important keywords, was opted for a "co-occurrence" analysis, selecting all words with a minimum occurrence number of 45, the number based on which were highlighted 82 keywords that meet the criteria mentioned before.

From the selected keywords were obtained 48,408 strong links. The most relevant are the following 20 keywords:

Table 1. **Keywords analysis results**

Keyword	Occurrences	Total link strength
Audit quality	1862	9228
Corporate governance	900	5419
Earnings management	751	4698
Audit fees	659	4120
Financial performance	603	3313
Independence	465	3038
Audit committee	448	2946
Impact	455	2470
Firms	423	2477
Ownership	394	2485
Earnings quality	393	2366
Determinants	374	2184
Management	363	1897
Discretionary accruals	316	2187
Non audit services	315	2142
Risk	315	1768
Information	303	1776
Auditor tenure	293	1807
Boards	255	1760
Association	233	1635

(*Source*: Author's projection through Web of Science results)

From the selected keyword list, the strongest keywords are: audit quality (with 1862 appearances), corporate governance (with 900 appearances), earnings management (with 751 appearances), audit fees (with 659 appearances), financial performance (with 603 appearances), independence (465 appearances), impact (with 455 appearances), firms (423 appearances).

Figure 2 shows the analysis results and the links between keywords. The figures returned for the keyword network are based on the following characteristics: the larger points and concepts highlight that the keywords were mentioned more often, the thicker lines represent that those keywords were together in the same work, a smaller distance between points highlight a stronger link between concepts.

From the analysis, there were identified four clusters, highlighted in different colors: red, green, blue and yellow. The composition of these four clusters is detailed in Table 2, and the keyword network is highlighted by the mentioned colors.

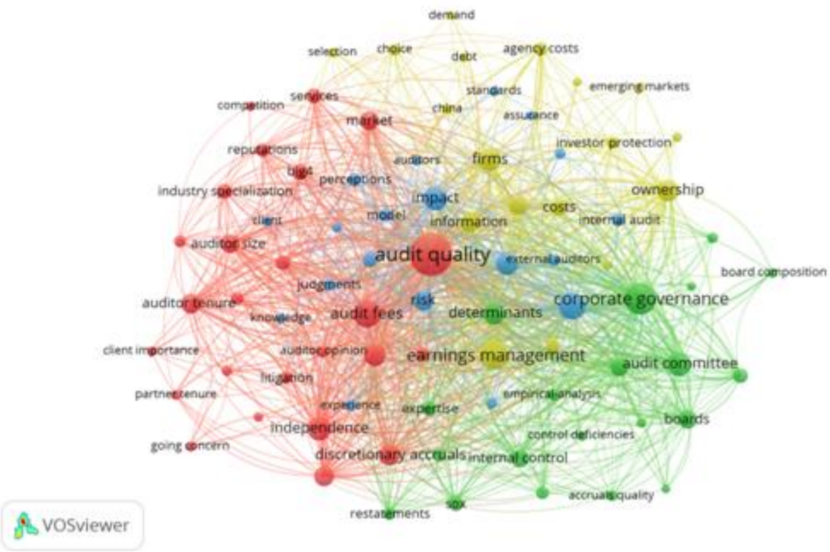


Figure 2. **The keywords network visualisation**

(*Source:* Author's computation through VOSviewer)

Table 2. **Clusters of keywords**

Cluster 1 (red)	**Cluster 2 (green)**	**Cluster 3 (blue)**	**Cluster 4 (yellow)**
Audit fees	Accruals quality	Accountability	Agency costs
Audit quality	Association	Assurance	China
Auditor opinion	Audit committee	Auditor gender	Choice
Auditor size	Board characteristics	Auditors	Costs
Auditor specialization	Board composition	Behavior	Debt
Auditor tenure	Boards	Client	Demand
Big4	Compensation	Decisions	Disclosure
Client importance	Consequences	Experience	Earnings management
Competition	Control deficiencies	External auditors	Emerging markets
Conservatism	Corporate governance	Financial performance	Equity
Discretionary accruals	Determinants	Impact	Firms
Earnings quality	Directors	Internal audit	Incentives
Going concern	Empirical – analysis	Judgments	Information
Independence	Expertise	Knowledge	Information asymmetry
Industry expertise	Financial expertise	Management	Investor protection
Industry specialization	Financial reporting	Model	Ownership
Litigation	Quality	Perceptions	Selection
Litigation risk	Internal control	Risk	Value relevance
Market	Restatements	Standards	
Non audit fees	Sox		
Non audit services	Voluntary disclosure		
Partner tenure			
Pcaob			
Reputations			
Services			

As can be seen, cluster 1, highlighted in red, brings together the most keywords (25 items) and also the strongest links with the phrase “audit quality”, represented a part of the measurement indicators of the financial audit quality. The strongest keyword related to the selected articles was “audit quality”, followed by “audit fees”, “independence”, “auditor tenure”, “auditor size”, “market”, “big4”. This fact is also noticed in the specialized literature in this field, the audit fees being a main indicator that can influence the quality of the financial audit. Keywords that refer to auditors are also justified, both the auditor rotation and the size of the audit firm, but above all the auditor independence are indicators that prevail when is evaluated the quality of financial audit services. Another influencing factor was the market in which the financial audit engagement is carried out.

Cluster 2, highlighted in green (20 items), represent the key words that refer to the management structures, which belong to both the auditor and client. The strongest link is represented by the corporate governance, but also by the audit committee or the management of the audited companies. “Quality accruals” and “internal control” are also two keywords with strong links.

Cluster 3, highlighted in blue (19 items), highlights the impact of audit quality on users of financial statements perceptions, in this category were found three keywords with strong links, these being: “impact”, “external auditors” and “risk”.

Cluster 4, highlighted in yellow (18 items), highlights the result of an audit quality on the client, but also on the investors. In this category, the strongest links were found between the words: “earnings”, “management”, “firms”, “ownership”, “information” and “cost”. This aspect was also supported in the literature; most papers published in this field argue that an audit quality can favor the decision of investors to invest, as well as increasing external financing sources for companies.

4.2. Author analysis

In order to highlight the links between the authors of the articles included in the sample, I chose to make the maps according to two criteria: the author’s names and the countries in which were published the articles.

4.2.1. Author analysis by name

To highlight the links between authors, there was opted for a “co-authorship” map based on authors; the minimum number of appearances in a document was 10. Thus, there were obtained 556 authors, of which VOSviewer highlighted 40 authors who met the selection criteria.

From the authors list, the top ones were Gul (30 appearances), Francis (17), Li (14), Choi (13), Kim (13), Hoitash (13), Carcello (12), Krishnan (10), Lennoy (10) and Simunic (10).

The link between the authors is graphically represented in figure 3, from the analysis of this type of links was obtained a distribution of the authors in three clusters, as follows:

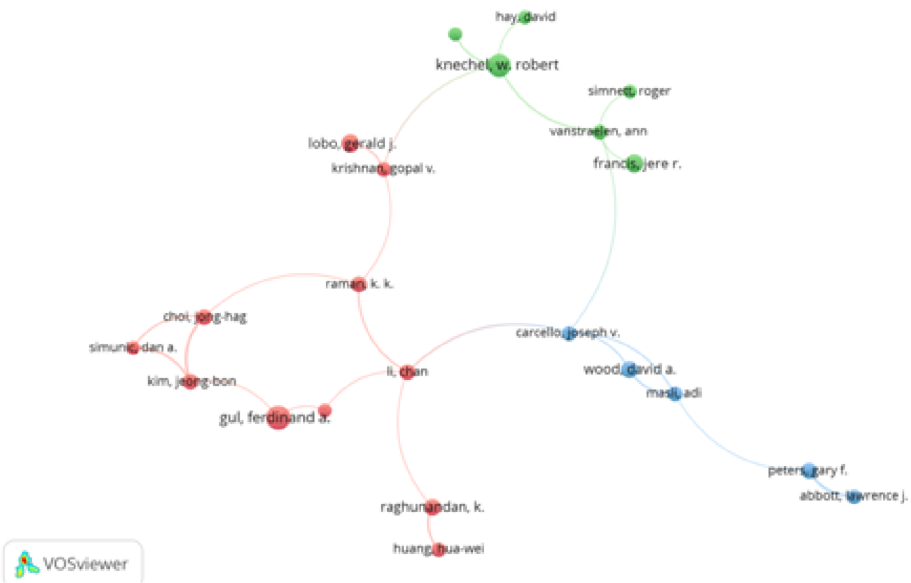


Figure 3 **Authors analysis visualization**
(*Source:* Author's computation through VOSviewer)

The three identified clusters reflect the network of authors highlighted by three distinct colors, cluster 1 in red, cluster 2 in blue and cluster 3 in green.

The allocation of authors is represented in Table 3.

Table 3. **Clusters of authors**

Cluster 1 (red)	**Cluster 2 (green)**	**Cluster 3 (blue)**
Choi, Jong -Hag	Francis, Jere R.	Aabbott, Lawrencej.
Gul, Ferdinand A.	Hay, David	Carcello, Joseph V.
Huang, Hua-wei	Knechel, W. Robert	Masli, Adi
Kim, Jeong-Bon	Sharma, Divesh S.	Peters, Gary F.
Krishnan, Gopalv.	Simnett, Roger	Wood, David A.
Krishnan, Jagan	Vanstra, Elen Ann	
Li, Chan		
Lobe, Gerald J.		
Raghunandan, K.		
Raman, K.K.		
Simunic, Dan		

(*Source:* Author's computation through VOSviewer)

The strongest links between authors was obtained in cluster 1, which contains 11 top authors, Gul Ferdinand being the most significant author who debated the subject of audit quality. Cluster 2 contains 6 authors, the most significant link being with the authors Knechel Robert and Francis Jere, and cluster 3 contains 5 authors, the strongest link being with the author Carcello Joseph.

4.2.2. Author analysis based on countries

In order to analyze more detailed the links between the authors, I also opted for a "co-authorship" map based on the countries in which the selected articles were published on the Web of Science, there were obtained 97 countries. Was followed a consistency in choosing the minimum number of documents of 10, after which were obtained 49 countries that met this selection.

The ten most representative countries in which the topic of audit quality was debated were USA (1287 appearances), Australia (347), China (308), Canada (200), England (192), Spain (122), Malaysia (118), Taiwan (118), South Korea (99) and Germany (83).

There were obtained a total number of 1320 links, distributed as follows:

Table 4. **Author analysis based on countries results**

Country	Documents	Citations	Total link strength
USA	1287	39056	489
Australia	347	6602	248
China	308	7495	260
Canada	200	5064	170
England	192	3726	172
Spain	122	1222	40
Malaysia	118	1088	96
Taiwan	118	1157	66
South Korea	99	2142	86
Germany	83	850	51

(*Source:* Author's computation through VOSviewer)

It can be seen that most authors have published articles that debated the topic of audit quality in the USA, the country that has the strongest link in this area. Australia and China have also made significant connections with the subject under discussion.

The geographical dispersion in the form of clusters is represented in Figure 4.

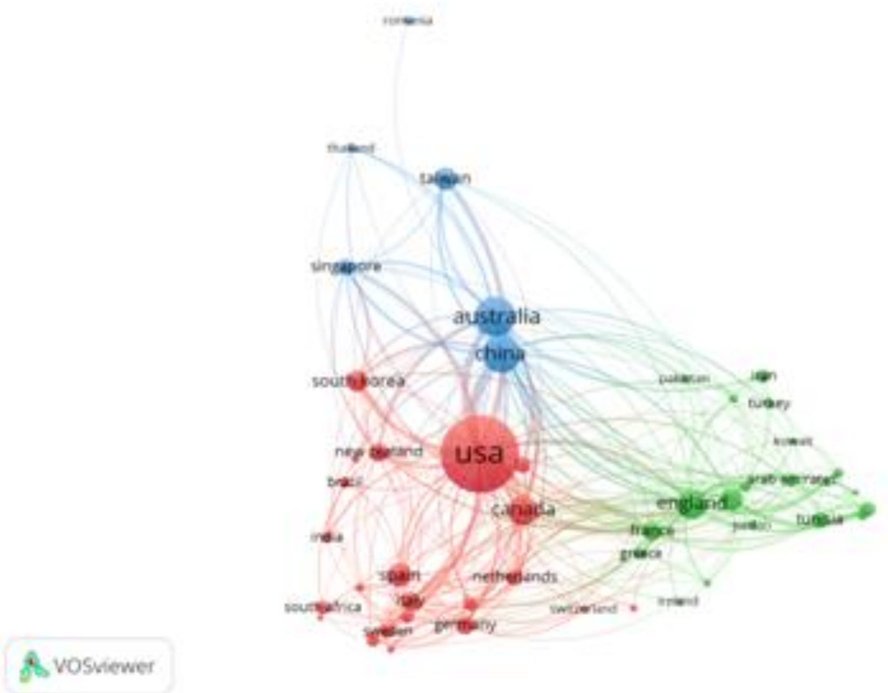


Figure 4 **Authors based on countries visualization**
(*Source:* Author's computation through VOSviewer)

Even from the graphic representation, the USA is the country where was published the most articles, as well as the relations with the other countries. There were obtained three clusters, based on the following links between countries:

Table 5. **Clusters of authors based on countries**

Cluster 1 (red)	**Cluster 2 (green)**	**Cluster 3 (blue)**
Belgium	Arab Emirates	Australia
Brazil	Bahrain	China
Canada	Egypt	Romania
Denmark	England	Singapore
Finland	France	Taiwan
Germany	Greece	Thailand
India	Iran	
Indonesia	Ireland	
Italy	Jordan	
Japan	Kuwait	
Netherlands	Lebanon	
New Zealand	Malaysia	
Nigeria	Pakistan	
Norway	Saudi Arabia	
Poland	Scotland	
Portugal	Tunisia	
Russia	Turkey	
South Korea	Vietnam	
Spain	Wales	
Sweden	Yemen	
Switzerland		
USA		

(*Source:* Author's computation through VOSviewer)

The first cluster, highlighted in red, contains 23 countries, of which the USA, Canada, Spain and Korea was the most nuanced, which showed the interest of the authors from these countries for researching the audit quality. The second cluster, highlighted in green, includes 20 countries, England and France was the countries with the strongest links between the authors. The last cluster, highlighted in blue, brings together the difference of 6 countries, including Romania, but the most significant was Australia and China.

4.3. Citations analysis based on authors

The citation analysis based on author highlights the authors who have been cited most often in articles about the audit quality, that was indexed Web of Science. Based on the required filters: "citation" map based on "authors", at least 10 articles per author and least 10 citations for each article, VOSviewer returned a total of 5,560 citations, of which only 40 was viable with applied filters. According to the results, were obtained 2,353 strong links, the most cited authors being: Gul F. (with 1693 citations and 233 links), Knedel R. (with 1,053 citations and 306 links), Francis J.R. (with 1,670 citations and 321 links), and Lobo G.J. (with 656 citations and 129 links). There is also a large number of links to citations related to the audit quality, but the corresponding links are fewer. Table 10 lists the most representative ten citations.

Table 6. **Citation analysis results**

Author	Documents	Citations	Total link strength
Gul F.	30	1,693	233
Knedel R.	28	1,053	306
Francis J.R.	17	1,670	321
Lobo G.J.	17	656	129
Omer T.C.	16	339	130
Raghunandan K.	15	406	119
Wood D.A.	15	449	119
Li C.	14	681	156
Raman K.	14	284	112
Choi I.	13	1,125	215
Hoitash U.	13	578	146

(*Source:* Author's computation through VOSviewer)

Were highlighted three clusters based on the citations analysis based on authors, the links were detailed in figure 5.

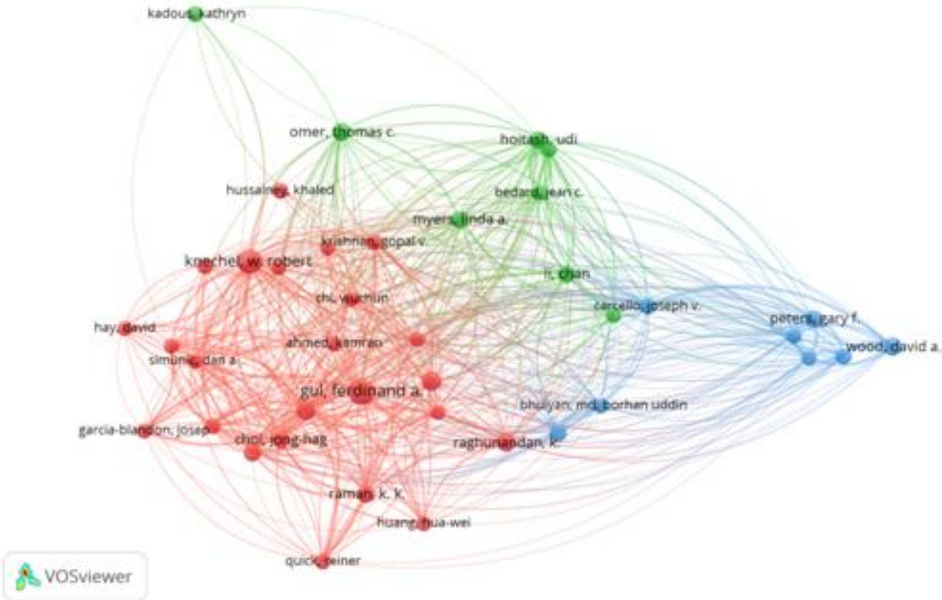


Figure 5. **Citation analysis network visualization**
(*Source:* Author's computation through VOSviewer)

The content of each cluster is presented in Table 7.

Table 7. **Clusters of citations**

Cluster 1 (red)	Cluster 2 (green)	Cluster 3 (blue)
Ahmed, Kamran	Bedard, Jean C.	Abbott, Lawrencej.
Chi, Wuchum	Hoitash, Rani	Alzeban, Abdulaziz
Choi, Jong-Hag	Hoitash, Udi	Bhuiyan, Md. Borhan Uc
Francis, Jere R.	Kadous, Kathryn	Habib, Ahsan
Garcia-Blandon, Josep	Krishnan, Jagan	Masli, Adi

Cluster 1 (red)	Cluster 2 (green)	Cluster 3 (blue)
Gul, Ferdinand A.	Li, Chan	Peters, Garry F.
Hay, David	Myers, Linda A.	Wood, David A
Huang, Hua-Wei	Omer, Themas Cc.	
Hussaine, Khaled		
Jarboui, Anis		
Kim, Jeong-Bon		
Knechel, W. Robert		
Krishnan, Gopal V.		
Lennox, Clive		
Lobe Gerald J.		
Monroe, GaryS.		
Quick. Reiner		
Raghunandan, K.		
Raman,K.K		
Salehi, Mahdi		
Sharma, Divesh S.		
Simnett, Roger		
Simunic, Dan A.		
Vanstraelen, Ann		

(*Source:* Author's computation through VOSviewer)

From the network view, the first cluster of 24 citations shows a strong connection between Gul Ferninand, Knechel W. Robert and Choi, Jong-Hag. The second cluster, with 8 citations, illustrates a strong connection between Hoitash Udi and Omer Thomas, and the last cluster that also contains 8 citations reflects a strong connection between Peters Gary and Wood David.

5. Conclusions

Based on keyword analysis, the articles that debated the topic of financial audit quality, often discuss the following concepts: audit quality, audit fees, independence, auditor tenure, auditor size, market, big4, earning managements, risk and corporate governance. Therefore, can be considered, based on this study, that audit quality research should be related to indicators that can change the audit quality, the most significant of which are audit fees, client performance, corporate governance and management system, but also by the risks and audit market rules.

Of the 3173 analyzed articles, most of them were published in American journals and were highly cited, which reveals an interest in publishing this topic. Other articles on audit quality were frequently published in Australian and Canadian journals, but also Chinese journals.

The most representative authors who published articles on this topic were Gul F., Francis J., Li C., but also Choi J.H., Kim J.B. and Hoitash U. They gained a strong relationship in the author network.

Finally, for citations on the authors, Gul F., Knedal R., Francis J.R. and Lobo G.J. were the most cited authors for articles that debate the audit quality topic.

Similar results were obtained by the Ciger (2020) and Taqi *et al*. (2021), which after the bibliometric analyses specified that the number of published articles increased after 2000, due to accounting scandals and the financial crisis and, as can be seen, the concern for the audit quality topic continues to be an attractive topic at the scientifically and research level.

The limit of the paper consists in the fact that was used just a single database, and the items from the sample are published just in this database. Future research directions can be concretized in the extension of the analysis at econometric level, by building an econometric model that contains the dependent variable "audit quality", and the independent variables will be the most significant keywords obtained based on the bibliometric analysis performed in this paper.

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SECTION 8

Inherent Conflict On Implementation of Strategic Tools Enterprise Resource Planning (ERP)
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Inherent Conflict on Implementation of Strategic Tools Enterprise Resource Planning (ERP)

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Abstract: *Since 1990s companies around the world have been implementing software, and most of them enterprise resource planning (ERP) to have a uniform data information in their system respective organizations, practically they rebuild their business performance and all the processes. ERP implementation involve many organizational changes who can create inherent conflict due to processes and technology. The findings from the qualitative study and the conclusion were found to be equivalent, supports the validity of implementing this type of ERP. This study has in background a research of country market contains different perspective of clients and providers of ERP and two companies from the Romanian country with openness at different European countries or just inside the country. Research was made on business analysis and system applicability on this two Romanian companies, how enterprise resource planning increased the performance companies and finding the existence of conflicts using interviews with both team of each company.*

Keywords: *Enterprise resource planning (ERP), inherent conflict, manufacturing implementation focus, performance, complexity.*

1. Introduction

When the companies met with high levels of competition and pressure from many industries, most of them invariably turn the information systems department to help them obtain advantages by performing better internally and become the best in the market. Many organizations and other manufacturing usage a lot of various IT tools to archive performance and because of this, their organizational routine was changed.

In "IT agenda 2000", Venkatraman mentioned that "We are at an interesting turning point in our business history: the industrial age is giving way to the information age and the digital infrastructure is fast replacing the physical infrastructure". All this are similar with the transition from Agrarian to Industrial Economy, where the industrial machinery and tools were used.

Currently if we talk about technical side of IT, the primary reasons for the inability of many organizations to obtain the full potential of using IT tools, is the incompatibility among the vast computer software and hardware systems. Ives and Jarvenpaa (1993) found this during their case study. Practically many individual divisions were started implementing various hardware and software system in their functions during the last years, which have like a results many organizations characterized by multitude of different systems who could not be integrated with one another. The system was incompatibility even the individual functions were able to realize a good performance

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and high efficiency because the available information at the organizational level was not in a good relationship one with another.

Ives and Jarvenpaa (1993) mentioned that such incompatibility among the various computer hardware and software systems in a global context only encumbered their performance. Similar to the growth of organizations through acquisitions and mergers and transcendence of those beyond their national boundaries, appear here the disparity among their computer software and hardware systems still increasing.

Many IT professionals have the opinion that only a half of the available information is used by organizations in their decision and the other remaining latent.

In the paper with new industrial engineering, Davenport and Short (1990) explained that the information technology and the business process re-sign, are the two vital tools "which by working together have the potential to create a new type of industrial engineering". The Enterprise Resources Planning system just do that, besides being IT innovations, it is also a high (BPR) business process reengineering mechanism and it enables organizations to put in practice new forms of industrial engineering, hence, a change from the traditional forms where IT worked independent of the business objectives (Severin and Leech, 2009).

To defeat the problem linked to the incompatibility, many organizations around the world have been implementing ERP systems, and we can see that the demand for those implementations systems is growing quickly. During the implementation of enterprise resource planning, companies are able to achieve an "end to end" connectivity, attended to bring diverse functions and divisions together. Many of the inherent drawbacks associated with the materials requirement planning (MRP) and manufacturing resources planning (MRP II) systems have been overcome through implementation of ERP systems, since ERP systems integrate manufacturing function with most or all of the functions in an organization (Rajagopal, 2002). The manufacturing resources planning systems were used most of the time at individual facilities in manufacturing or manufacturing facilities in isolation of one to another, becoming not so successful when a company had multiple productions facilities. During times of increasing through mergers and acquisitions, the problems become more pronounced, resulting in desperate research systems. After making computer hardware and software platforms compatible, we can see connected from the shops floor activities to the performance and efficiency monitoring in the headquarters. No other innovation in IT systems had such a deep effect across an entire company, as did enterprise resource planning, as sow during this case study. However, an inherent conflict exists between the focus of a software company that implement ERP and their manufacturing client. Software Company have their goals to be success and this come by selling more software, because is where their high margins are, and to do that is to adding rich functionality. Focus on adding those are to cover many manufacturing. On the other part, organization want results utilize the functionality of software, getting this with focus on implementation process itself. That create an inherent conflict that exist between this focuses.

By adding more functionalities, the software company can solve any issue from any manufacturing, but from manufacturing viewpoint those are unique organizations, and they need to focus on that functionality that make them effective. Their needs sum up to someone who understand what they should do, to have a good focus and more simplicity.

With more functionality that they adding the more types of manufacturing that they can solve for, the more complex their system becomes that comes down to an issue of complexity versus simplicity, and the organizations reason that they bought the software is to do more with less.

Many organizations have to take an inherently complex product simplify it to be successful. Since there were a few studies about inherent conflict and implementation about ERP systems, the need to have an empirical study in this area become necessary. Any implementation is better understood by analysing the various factors both from within and from the external environment that can be resulted in implementation process, or from many issues involved before and after implementation and of course the resulting performance (Premkumar *et al*., 1994). To have a clearly understand about the factors of influence, barriers, issue and performance, this studies was found to be necessary and stage model a useful tool.

With some background set up about the changes in the business, taking into consideration the details of ERP systems, inherent conflict and usage of the stage model to study implementation, this paper aims to:

1. Explain role of ERP in companies live;
2. Explain the conflict that appear during the implementation;
3. Organization requirements for consultants – manufacturing needs;
4. Develop a research using the case study findings based on literature about inherent conflict and resolution offered in an implementation process.

As a first step, an exploratory research was conducted in two manufacturing organization. This paper is part of an ongoing research project that have to explore many business processes and their ability to adopt the innovation of enterprise resource planning (ERP) and what kind of software is better and useful for their business.

2. Literature review

2.1. Enterprise resource planning (ERP) systems

R. Addo-Tenkorang and P. Helo explain that an ERP "system enables on organization to integrate all the primary business process in order to enhance efficient and maintain a competitive position". Slater (1999) defines ERP as "ERP integrates key business and management processes to provide a sky-level view of much of what is going on in the organization. The idea behind ERP is that the software needs to communicate across functions" and that ERP systems permit efficient exchange of relevant data regarding the production processes and their associated administrative tasks.

Also Addo-Tenkorang and Helo (2011) add that the "ERP system is an enterprise information system designed to integrate and optimize the business processes and transactions in organizations The Enterprise Resource planning is an industrial-driven concept and systems, and is universally accepted by business and manufacturing as such practical solutions to archive an integrated enterprise information system solution". In today's competitive business environment ERP become viral strategic tools more than innovation.

Osnes explained: "Adopting ERP systems is, however, a complex organizational and technical undertaking. Technically, the systems are challenging to implement in terms of configuration, adaptation, and data conversion from legacy systems". Hence, the system adopts changes in business processes, role employees and into working routines. On the other hand, due to complexity, ERP systems can be difficult to understand, and comprehensive training programs is necessary (Robey *et al.*, 2002).

Arcus Universe made a brief introduction about ERP software in a public video on Youtube Cannel where said that ERP is a managing information, is the organized collection, storage and use of information for benefit of enterprise. Also Glen Moffatt (Director North America, SAP) explains what is ERP during his lessons from his Youtube Channel, "a system that optimizes the flow of information, materials and cash in an organization" (Slater, 1999).

2.2. Inherent Conflict

The literature conflict represents clashes of interdependent people who perceive different interest of goals, aim and values (Putnam and Poole, 1987). There is practically an increasing phenomenon, which affects processes and outcomes of many companies.

Smith and McKeen (1992) identified conflict as a real part of development during implementing organization and a heavy barrier, which affects computerization.

Thus, looking at Software Company and manufacturing what makes them successfully create an inherent conflict.

2.3. Needs of implementations manufacturing

Manufacturing needs someone who can come and quickly understand his or her business and have a detailed operational process.

Software Company have to apply their software for those manufacturing. Thus, help them to simplify that whole myriad of functionality and the complexity that comes with it and apply the software directly to what they need to apply to.

Manufacturing also need someone to be able to look at it from a systemic view, because there is several of set up parameters and many variables that they need to set. Manufacturing organizations should be able to understand how those set up eventually rolls down and affects the accounting and financial part.

Software Company may have the ability to simplify life customers and to address the fear of changes. Often some of employees manufacturing, are little hesitant when change happens, being something new to them, there is going to be a fear that exists among the team, and someone form software company have to address that.

To overcome the problems associated with fears manufacturing, those needs to be taught by using their language. It will be some training for their group team, and should talk in words that they will understand, and to apply that on those businesses, that is a primary key.

For a successful implementation company software needs to take into consideration all the requests, avoiding inherent conflict but still keep their objectives to sell their software and bring more customers.

2.4. ERP in Romania

At the Romanian level, almost all ERP software providers talk about a mature market, which understand the importance of these systems in the current business environment. On the other hand, the managers of many organizations do not even know the proper meaning of the concept of ERP.

In 2019, following an analysis published in the Financial Journal based on data collected from the Ministry of Public Finance, the largest software companies in Romania recorded a combined turnover of 668 million euros, with a margin of gain of 10% of revenues. Giants like Oracle, SAP, Endava and NTT Data dominate the ranking.

The adaptability and understanding of ERP systems by organizations in Romania can be observed both through the eyes of suppliers and through the opinions of companies that have already implemented this system.

Ioana Pană (SAP Romania) considered that the Romanian market grows consistently from year to year, saying at the same time that local organizations have begun to notice the importance of an integrated it system and the benefits it can bring.

More than that, Costin Fodor and Mihaela Moga (S&T Romania) discuss the existence of two directions of market development of ERP, one given by private companies, and the second through the prism of state-owned companies: “started a few steps before, private companies have taken a step forward gaining a consistent experience in using IT tools to harness the data and information generated in the day-to-day business. That’s why many of them are moving further towards developing their own systems, adding new modules that help expand capabilities and vision of the company’s performance”.

On the other hand, ***potential customers*** want to know exactly the benefits of purchasing and implementing an ERP system within their business.

Following the management of resources in the organization in which it is implemented, the ERP provides accurate, relevant and easy-to-access data, which is a suitable support for making management decisions in real time. Thus, an ERP system also ensures consistency with the reports required by the legislative provisions, as well as the documents related to internal procedures, eliminating redundancies within the organizations, thus also amortizing the business.

Camelia Chirtu (Turbon Group Financial Director) mentions in the testimonial made to their partners at Elian Solutions in 2019, the dedication they have shown. In addition to implementing the ERP system, Turbon Grup was helped to reconfigure production flows and obtain reporting in the format required by the German parent company.

A few years ago, Roberto Busollini (General Director Riso Scotti), another customer fully satisfied by Elian's team, carried out the implementation and managed to meet the requirements imposed by Italian law, building reports and economic indicators with the help of the system, thus adding increased control over their business and added-value at group level.

Marius Chiorean (Property Manager Lactate Torockoi) mentions in the testimonial made to their partners Senior ERP. "It has helped us to optimize the amount of sales a lot, in the sense that we watch a lot more closely how the product performs to the customer". The company, which processes 15,000 liters of milk daily in the factory in Colțești has achieved these results and many others with Senior ERP systems.

Does Enterprise Resource Planning equal satisfied customers?

Yes and no. It is necessary to understand that the ERP is not the magic tool that helps transform things overnight. At the same time, "ERP does not sell with the guarantee of success" says Link Magazin. As a result, purchasing ERP software does not mean that it will take care of an organization's customers on its own.

On the other hand, it is equally true that having this system, resource management, especially from the perspective of trade relations, is becoming easier and easier.

3. Research methodology

3.1. Conflict scenarios

Over the years have been recognized the issues of ERP systems conflicts. Many conflicts are encountered in time of implementation ERP and change process and involve because of varied interests of most of them technical but also processes conflicts.

We proceed to find a way to facilitate ERP implementation process success by categorize ERP change process conflicts and working on sources of conflicts knowing notion of sources and those types of conflicts. The results it will help manufacturing and software companies to have a better communication by decreasing conflicts, a good implementation process that have focus on manufacturing needs.

The first results are presented in two scenarios conflict with characteristics of each scenario.

Type of conflicts	Source of Conflicts
Technical	External and internal technical conflicts inside and also outside the organization
	Internal/External business requirements and ERP Packages
Process	External and internal process conflicts
	Between software company and how internal business process should be implemented and supported

Figure 1. **ERP conflict scenarios**
(*Sources adapted* Musleh Alsulami, Umm Al-Qura University, Computer Science and Information Systems Faculty)

- **Technical type of conflicts -** Organization that are in this scenario have internal technical issues, which are related to their software or ERP systems misfits with internal requirements. That leads the team of management organization who manage the implementation to be more involved and support the team from Software Company to reduce the risk and of course to avoid ERP failure. Still, managers can improve their internal business processes instead of implementing a new system or modifying the actual ERP. On the other hand, organizations encountering with this type of conflict can expect to have also external technical conflicts, which take into consideration ERP system misfits with outside partners. The support should be from both side to avoid ERP risks. Managers can make more suitable and compatible their internal processes with external partners like customers, vendors, supplier etc. Avoiding these conflicts will create more trust between organizations and partners and authenticity (Musleh Alsulami).
- **Process conflicts** – Organization that are in this scenario, have internal process conflicts manifested between internal teams and project team from software company, creating a clash of interest about how internal business processes need to be implemented and also supported by the ERP (Nordheim, 2011). The team from stakeholders ERP Company should have a good negotiation with any conflict that might face.

3.2. ERP implementation in Romanian companies - issues and resolutions

The information about the organization studied were obtained from their business analyses and responses from interviews. Meetings was at their head office during several days on analyses and several on go-live.

The study is made on two organizations from Romania with openness at different European countries and inside the country, who take into consideration acquisition on ERP software. Companies operate in different fields of activity. One of those is the main producers of cables and electrical conductors in Romania. Main sectors are industry, railway, energy and others. The second is one of the main zonal distributors of inputs (seeds, pesticides and chemical fertilizers). Their partners benefit from professionally technological packages to cover the needs for products to bring the agricultural productions to maturity.

First begun with business analyses and after with go live implementation. The interviews were conducted with their project managers, accountants and consultants by the software company team. During the parts of adaptation stage and implementation, we chose some relevant requests and resolution that the client team felt there was no problem in being published.

The customer provides access to all types of quantitative and qualitative data, if the software company complies with the confidentiality conditions mentioned by the client in the implementation contract. For me the conditions were the same being part of the software company implementation team.

Data collection steps:

- Kick-off: being the first meeting with the potential client in which the implementation teams from both sides are known. In this meeting, we learned things about business and its story.
- The analysis stage: In which the business analysis is actually carried out, what are the flows, how it works and what is desired, following key points from each department: financial, operational, production, etc.
- Diagnostic stage: Where the ERP Partner Team presents the program and adapts the functionality to the customer's needs. Data is collected about the necessary changes in the system for better operation and adaptability on the business. Developments are designed together with the client so that he knows the implications to come, to analyze the risks and benefits.
- Training and Go Live: Represents the stage where data can be collected on problems that were not taken into account in the first meetings, where you can observe the adaptability of the employees as well as the system on the business. It is the stage of commissioning the new system, this time users being close to the system and observing the way it works.

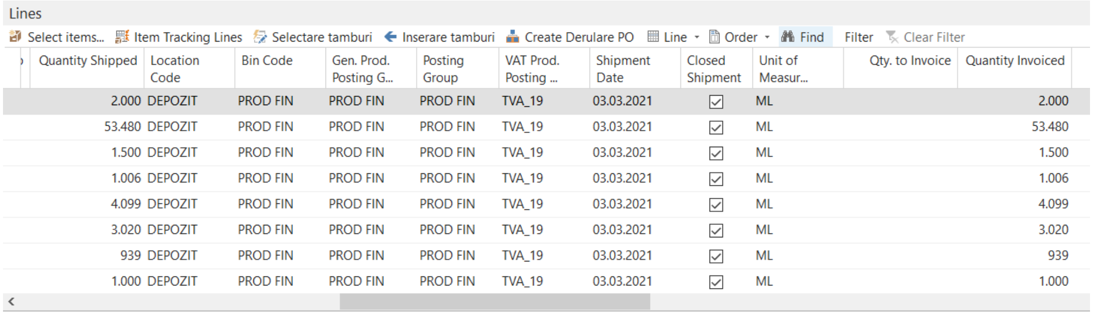
a) Requests and resolutions Company 1.

Company 1 needs that sales order to be archived, even if the sales was done with an invoice sales or the customer had changed his mind. On one sales order can be more items to be sold and others not present still an interest for the customer, so the order sales need to be closed after they agreed with the customer about the situation.

Resolution comes quickly to them, but have also some restriction, to prevent risks to archive a good sales order.

At each line of the items was added an indicative that can be mentioned „Closed" and if each line contains this indicative the sales order will be marked on the header order to be a closed one and it will be archived.

Another query was to have the equal quantities between shipments and quantity invoiced.



Lines

Select items... | Item Tracking Lines | Selectare tamburi | Inserare tamburi | Create Derulare PO | Line | Order | Find | Filter | Clear Filter

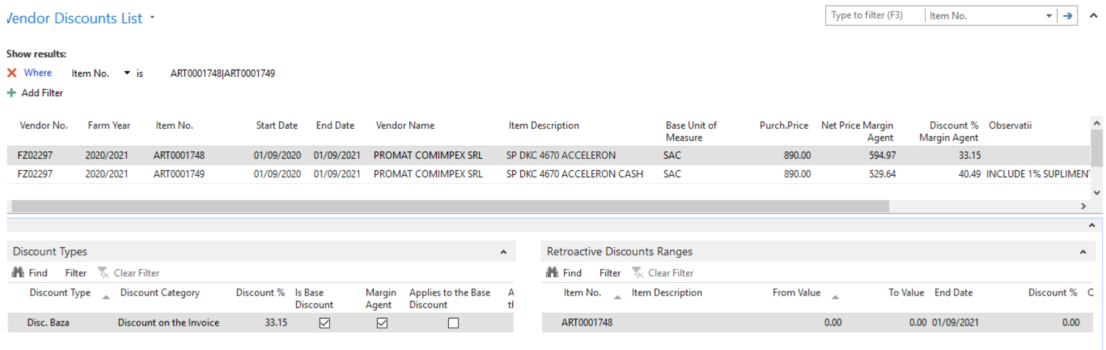
Quantity Shipped	Location Code	Bin Code	Gen. Prod. Posting G...	Posting Group	VAT Prod. Posting ...	Shipment Date	Closed Shipment	Unit of Measur...	Qty. to Invoice	Quantity Invoiced
2.000	DEPOZIT	PROD FIN	PROD FIN	PROD FIN	TVA_19	03.03.2021	☑	ML		2.000
53.480	DEPOZIT	PROD FIN	PROD FIN	PROD FIN	TVA_19	03.03.2021	☑	ML		53.480
1.500	DEPOZIT	PROD FIN	PROD FIN	PROD FIN	TVA_19	03.03.2021	☑	ML		1.500
1.006	DEPOZIT	PROD FIN	PROD FIN	PROD FIN	TVA_19	03.03.2021	☑	ML		1.006
4.099	DEPOZIT	PROD FIN	PROD FIN	PROD FIN	TVA_19	03.03.2021	☑	ML		4.099
3.020	DEPOZIT	PROD FIN	PROD FIN	PROD FIN	TVA_19	03.03.2021	☑	ML		3.020
939	DEPOZIT	PROD FIN	PROD FIN	PROD FIN	TVA_19	03.03.2021	☑	ML		939
1.000	DEPOZIT	PROD FIN	PROD FIN	PROD FIN	TVA_19	03.03.2021	☑	ML		1.000

Figure 1. **Quantities shipped and invoiced**
(*Source*: Dynamic Business Centre 365 License Company 1)

After the resolution, organization people give a feedback about new functionality, and the permission was received by email to put in live application. Training was given on video call with the department sales.

Asked about efficiency of resolution, project manager from company one mentioned that it is a good functionality that make them a step easy and give some control.

b) Requests and resolutions - Company 2.
The second company has a request as a result of the fact that they do acquisition on one cod item and for them aren't generated the afferent accruals but at selling the vendor it will give a discount for the selling quantity. Practical we have to items with different politics. Item ART0001748 have a discount applied on invoice 33, 15%.



/endor Discounts List

Type to filter (F3) | Item No.

Show results:
Where Item No. is ART0001748|ART0001749
Add Filter

Vendor No.	Farm Year	Item No.	Start Date	End Date	Vendor Name	Item Description	Base Unit of Measure	Purch.Price	Net Price Margin Agent	Discount % Margin Agent	Observatii
FZ02297	2020/2021	ART0001748	01/09/2020	01/09/2021	PROMAT COMIMPEX SRL	SP DKC 4670 ACCELERON	SAC	890.00	594.97	33.15	
FZ02297	2020/2021	ART0001749	01/09/2020	01/09/2021	PROMAT COMIMPEX SRL	SP DKC 4670 ACCELERON CASH	SAC	890.00	529.64	40.49	INCLUDE 1% SUPLIMEN

Discount Types

Find | Filter | Clear Filter

Discount Type	Discount Category	Discount %	Is Base Discount	Margin Agent	Applies to the Base Discount
Disc. Baza	Discount on the Invoice	33.15	☑	☑	☐

Retroactive Discounts Ranges

Find | Filter | Clear Filter

Item No.	Item Description	From Value	To Value	End Date	Discount %
ART0001748		0.00	0.00	01/09/2021	0.00

Figure 2. **Discounts**
(*Sources*: Dynamic Business Centre 365 License Company 2)

Item ART0001749 have another policy discount, represented in Image 2, where have three different types of discount: on invoice, on invoice payment but for promotion and discount on invoice payment.

lear Filter

Discount Category	Discount %	Is Base Discount	Margin Agent	Applies to the Base Discount	A t
Discount on the Invoice	33.15	☑	☑	☐	
Discount on Invoice Pa...	0.60	☐	☑	☐	
Discount on Invoice Pa...	6.74	☐	☑	☐	

Figure 3. **Discounts**
(*Sources*: Dynamic Business Centre 365 License Company 2)

The problem was on selling, because purchase and invoice acquisition is done all the time by using ART0001748, but selling it will be with ART0001749. The second product have in back assembly policy pack that contain the first one items, hence, when we sell the second product discharge the inventory stock on the first one. By taking a look on ART0001748 policy, this one should not generate accrual. Instead, ART0001749 have in policy two additional discounts. This fact helping to margin calculation on agent sale. Without acquisition on this item means no accrual, therefore also no need accrual for selling.

Team from Software Company prepare the technical specification development for Company 2, and they found the next consequence „at the sale the system will summarize margin agent as discount policy" and if we look on accounting note the selling it was made in loss. In this image, miss the accrual note, because there was not found the necessary elements for configuration. The manager of Company 2 confirmed trade policy information correctly.

Posting Date	Document Type	Document No.	External Document No.	Source Type	Source No.	G/L Account No.	Bal. Account No.	Debit Amount	Credit Amount
22/01/2021		RDF1287770				371.01			3,570.00
22/01/2021		RDF1287770				6071		3,570.00	
22/01/2021	Invoice	RDF1287770		Customer	CL02860	707			3,555.37
22/01/2021	Invoice	RDF1287770		Customer	CL02860	667.69		267.00	
22/01/2021	Invoice	RDF1287770		Customer	CL02860	4111.01		3,288.37	

Figure 4. **Trading policy**
(*Sources*: Dynamic Business Centre 365 License Company 2)

Problems found are related to:

- Unknowing starts with acquisition how much quantity they will sell, hence, we do not know the amount that with should have on accrual at acquisition.
- The payment term on invoice are related to month September, and they have the possibility to pay half of amount on May. That situation was not take into consideration from the first step, by the software team.
- Because at acquisition we do not have accrual also in selling the system, do not know to make it.

After many meetings on this situation, the resolution was take together with both sides of teams. Company developer will mark the items with indicative "special product" and in discount policy was developed another one “additional discount”. All the sales for items marked like *special product* that are found with the new policy it will create accruals note.

After the implementation of the new functionality, training was given to the employees and we observed the user resistance in some areas at the beginning.

During the acceptance stage, the systems became widely used in the organization and people were able to see the transactions and information in real time that goes for good feedback to the software implementation teams.

Communication affects several areas related to implementation. There was not an inherent conflict between the company software and customers (organizations). All the problems were centralized and solved systematically and communicated together.

4. Conclusion and implications

From the results of this paper, it is obviously that all the companies that have different organizational characteristics benefits more than they anticipated from implementation ERP systems, and is clear without such an integrated system they could not gain performances and competitive advantages in coming years.

The providers of integrated systems argue that Romanian organizations are quite aware of the need to implement an ERP solution. Proximity to the European competitive market is one of the defining reasons why they wish to adopt an ERP as soon as possible.

At the level of this industry, 2019 launched new directions and laid the foundations for recent developments: automation, personalization, mobility and data security. More than 70% of organization’s aim to adapt their business model to digital transformation, and ERP solutions will continue to be the main investment area.

All the literature review shows the need for more research on ERP implementation issues. We claim to do a better contribution to practice and theory. This paper helps improve people for understanding about inherent conflict during ERP implementation or post implementation process. Other aspects proposed by Kwon and Zmud called „six-stages theory” create an interesting point to research in future because technology not live in a vacuum, we need to take into consideration the culture, the leadership, the processes, the goals and all the strategies and align them to get results.

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https://www.seniorerp.ro

Financing Pre-University Inclusive Education

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Abstract: *The study was about the financing of inclusive education in EU states. Issues concerning the challenges relating to the development of inclusive education, its funding, and appropriate measures to achieve optimal performance in financing inclusive education were discussed. It involved primary data collected from 25 EU countries through a quantitative research among inclusive school administrators. Inclusive education is essential in discovering every talent in students irrespective of their physical or mental abilities. It became clear that implementing inclusive education in EU states greatly depends on governments' financial allocation. The misinterpretation of the ideology behind inclusive education was discovered as a barrier to its development. In addition, the lower performance of students with special needs in mainstream education and the increasing enrollment of special students in segregated schools were among the challenges in financing inclusive education. Decentralization, per-capita model, resource-based, and output-based models were discovered to be influential in financing inclusive education.*

Keywords: *Inclusive education, pre-university education, financing, knowledge.*

1. Introduction

Common regulations bind Member States of the European Union to offer their citizens access to inclusive education without discrimination (Moriña, 2017). According to Garben (2019), the European Pillar of Social Rights that the European Council adopted, the European Parliament, and Commission declared that every individual should be entitled to constitutional rights to enjoy inclusive education of the highest quality. Beneficiaries are to receive skills training that would make them gainfully employed and contribute to their country's economic progress and the European Union.

Watkins (2017) published that implementing the inclusive educational system in the European Union was to ensure that no one is denied the opportunity to identify and develop their potentials. Schwab (2020) agrees that member states of the European Union are therefore obliged to sponsor inclusive education by providing a yearly budget that caters to all students' educational needs through the provision of educational aids and transportation.

However, Ebersold *et al*. (2019) pointed out that member states have different ways of funding inclusive education in their economies. Due to differences in approach to financial accounting among schools, the overall outlook of inclusive education often differs from one country to another. This discourse highlights the accounting challenges associated with inclusive education in terms of allocation of resources and measures to address the challenges in EU states.

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The overall aim of the study is to find the current state of inclusive education financing in the EU. As part of this aim, the following specific objectives were set:

1. To identify the sources and extent of funding for inclusive education in the EU region.
2. To identify the challenges in developments towards inclusive education in the EU region.
3. To determine the challenges in financing towards inclusive education.
4. To identify modalities that can be used to address the challenges with financing inclusive education.

2. Challenges in developments towards inclusive education

Ramberg and Watkins (2020) expressed a concern that people misinterpret the ideology behind inclusive education. This has resulted in disparities in the development of inclusive education among many EU states. Meijer and Watkins (2019) explained that students' availability, placement, active involvement, and acquisition of shared knowledge among all learners are indicators of inclusive education. Any condition that hinders the realization of these indicators makes the implementation ineffective. The European Agency for Special Needs and Inclusive Education (2018) argued that many EU states concentrate on students' availability and their placement in nearby schools as the key indicators of inclusive education. The inequalities among these indicators make some states invest more into inclusive education than others since certain aspects are ignored by existing policies. Ainscow (2020) argued that the consistent increase in research works and publications concerning inclusive education had affected its development. The author pointed out that many publications have interchanged equity education with inclusion education. This has affected the expectations of the latter through the misunderstanding.

3. Funding and resourcing of inclusive education

According to Meijer and Watkins (2019), the full implementation and realization of inclusive education depend on stakeholders' ability to allocate all resources needed to satisfy all students' needs. For this reason, any accounting disturbances on the micro-practices on schools can limit the effectiveness of inclusive education (Green and Ferry, 2021). Schuman (2017) agrees that funding inclusive education must provide a friendly and conducive teaching, learning, and physical environment that supports every student's needs without discrimination. According to Zundans-Fraser and Bain (2016), an ineffective educational budget is a type that neglects the needs of special or normal students in the name of inclusive education. Meijer and Watkins (2019) argue that funding of inclusive education directly affects the frequency of school dropouts and learners' educational performance. Following English and Carlsen (2019), the world education forum associated the achievement of the target set for inclusive education by 2030 with governments and other stakeholders' ability to provide resources and funds. This indicates that funding and resourcing is a critical success factor towards the outcome of the inclusive education. The forum added to governments' responsibilities to finance the recruitment, training, support, and motivation of qualified teachers for the successful implementation of inclusive education.

4. Challenges in financing inclusive education

Ebersold and Meijer (2016) discovered that governments in the EU are increasingly financing inclusive education, yet their investment is discouraging. McConkey *et al*. (2016) indicated that the number of students enrolled in special segregated schools is on the rise irrespective of governments' attractive packages and incentives through financing inclusive education. In a study conducted by Szumski *et al*. (2017), students with special needs and disabilities enrolled in mainstream schools through inclusive education are not improving. This results in an increased rate of dropouts of students in that category. Lašáková *et al*. (2017) attributed some governments' centralized policy concerning their financing of inclusive education as a barrier. Brusca *et al*. (2018) also pointed to international public sector accounting standard challenges faced by schools as part of public sector institutions. The authors stressed that in such economies, allocation of funds from the government goes through block funding to the authorities at the local level before a reallocation is made based on the state's inclusive education needs. The allocation and distribution of the funds for inclusive education also create many disparities. A lot of concentration is given to urban areas than less developed parts of the states.

5. Addressing the challenges of effectively financing inclusive education

Lašáková *et al*. (2017) stressed the need to decentralize funds allocated to inclusive education. The authors believed that when governments implement a community-based funding scheme to finance inclusive education, the specific needs of a locality in terms of inclusive education would be met. This will promote a great sense of accountability in resource and financial allocations. Johnstone *et al*. (2019) stressed the need to deploy models to disburse funds in inclusive education. The authors agreed that the use of the per-capita model would ensure that financial allocation is made for inclusive education based on the number of students with special needs and disabilities in a particular jurisdiction per each academic year. This approach will present a fair distribution and allocation of funding for inclusive education. According to Florian (2019), the resource-based model would ensure that inclusive education financing is made based on the services rendered in a particular jurisdiction. This policy will ensure that each school is provided with at least one special education teacher. Ebersold and Meijer (2016) mentioned an output-based model that allocates inclusive education finance with students' performance as a metric.

6. Methodology

6.1. Research method and design

In order to collect primary data to address the research objectives, the researcher embarked on a quantitative research method using the descriptive design. The main characteristic of the quantitative descriptive research was to use mathematical and numeric indices in collecting, presenting, analyzing, and interpreting data (Diriwächter and Valsiner, 2016). Quantitative descriptive research has the advantage of ensuring that researchers can collect data from large sample size to give fair representation of a population within which a study is being conducted (Gerrish and Lacey, 2013). It would be noted that the research setting for this study is the EU region. Using the quantitative descriptive design thus ensured that a reasonable number of respondents from different EU countries could be included in the study. The use of mathematical and other statistical indices in quantitative studies promote objective analysis and interpretation of data rather than subjective one (Blaxter, Hughes, and Tight, 2016). This makes it possible to generalize the findings from quantitative studies when compared to qualitative ones.

6.2. Population and sampling

The population of the study was EU schools with inclusive education system. As part of the quantitative method, the researcher sampled respondents from 25 different EU countries including Malta, Sweden, Denmark, Finland, Cyprus, Austria, Netherlands, Slovenia, Greece, Germany, Luxemburg, Belgium, Latvia, France, Estonia, Lithuania, Poland, Romania, Portugal, Italy, Slovakia, Hungary, Bulgaria, Czech Republic, and Spain. The inclusion criteria for selecting a country was the percentage of English speaking population. A minimum of 11.7% of the selected countries' population speak English. This way, it was relatively easier getting respondents who would understand the purpose of the study and the content of the research instrument. The researcher did not need to visit all these countries but contacted them through public emails published on their websites. With the two administrators from 25 countries, a total of 50 respondents were sampled from different backgrounds for the study.

6.3. Instrumentation and data collection procedure

The data collection procedure was in the form of a survey. The researcher prepared a questionnaire that was posted online using the Survey Monkey program. The questionnaire was written in the English language and contained close-ended questions that were capped from the specific objectives of the study. The questionnaire was accompanied with a brief note explaining certain key terms and concepts necessary to answer the questions. An example of this is the explanation of the financing models for the context of this study rather than its generalized meaning.

It was agreed that the questionnaire would be live online for 20 working days within which each respondent was to complete it and submit. Two reminders were sent to ensure high participation that resulted in 100% return rate for the questionnaire. The respondents were assured of anonymity and confidentiality during the analysis and presentation of findings.

6.4. Data analysis plan

After the 20 working days, the researcher gathered all the data collected from the online survey. The researcher used a combination of descriptive and inferential statistics in analyzing the data to interpret the research objectives.

The findings from the data analysis have been presented in the next section, which contains the findings. Because of the quantitative nature of the study, the findings have been presented through the use of tables, figures and correlational analysis that tests a hypothesis to determine the impact of financing challenges on inclusive education output.

7. Findings

In the previous chapter, the researcher presented approaches and methods for collecting data to conduct the quantitative research. The data collected are presented in this section as findings of the study. The findings are presented in thematic format to align with the specific objectives that were set earlier.

7.1. Sources and extent of funding for inclusive education in the EU region

Data were collected from the 50 respondents to determine the main sources of funding inclusive education in their institutions. The extent to which the respondents consider the current state of funding as adequate was also assessed. Table 1 below shows the main sources of funding as identified by the 50 respondents. The respondents were made to categorize or rate the percentage of funding they get from five (5) main sources. After this, the researcher computed the average percentage based on all 50 responses.

Table 1. **Major sources of financing inclusive education**

Funding source	Percentage
Government	40%
NGOs	20%
Family	14%
Internally generated funds (IGF)	8%
Charity and donations	18%
Total	100%

From Table 1, it can be noted that the financing of inclusive education is a multi-level responsibility shared among a number of stakeholders. The basis for this claim is that the table shows that among all five major sources of financing identified, there were significant representation of them within the institutions researched.

While the government dominants as the major source of funding, the institutions seem to rely less on IGF in financing inclusive education. These results are in line with Meijer and Watkins (2019) who indicated that government is the major stakeholder for financing inclusive education at all levels of learning and among public and private schools alike.

Also under this theme, the researcher collected data to determine from the respondents if the extent of funding they receive for inclusive education is enough for their administrative roles. The table below indicates the adequacy of the funding as perceived by the respondents.

Table 2. **Adequacy of funding received**

	Adequacy of funding received
Woefully inadequate	16
Inadequate	52
Adequate	20
Very adequate	10
Abundant	2

Based on table 2, it would be noted that the respondents perceived the current funding they receive for inclusive education as not adequate. This is because the modal score was among 26 respondents representing 52% of the sample size who said the funding is inadequate. Another 8 respondents representing 16% said it was woefully inadequate. There was only 1 respondent representing 2% that said the funding is abundant as 20% of respondent measured the funding as adequate and 10% said it was very adequate. From literature, Meijer and Watkins (2019) had criticized current funding as inadequate for schools to meet the core responsibilities of inclusive education that includes the provision of conducive teaching, learning and physical environment for special needs students.

7.2 Challenges in financing inclusive education

The earlier data confirmed the current amount of funding received from all major sources is inadequate. This means there are some core challenges that impede the successful financing of inclusive education. The respondents were therefore asked to contribute ideas towards what they believed were the core challenges in financing inclusive education. The researcher based on evidence from available literature to present the five (5) commonly reported challenges to respondents. They were then asked to select the ones that applied most in their institutions. Table 2 shows the responses gathered.

Table 3. **Challenges with inclusive education financing**

Financing challenge	**Number of respondents**	**Percentage**
Increased student enrolment	6	12%
Government's centralized policy	20	40%
Financing disparity against less-developed schools	6	12%
Complexity of modern financing models	8	16%
Complexity of modern inclusive interventions and programs	10	20%
Total	**50**	**100%**

From table 3, it would be noted that there is a multiplicity of issues that account for the current challenges with inclusive education financing. Each of the five issues identified and presented to respondents were selected by a sizeable number of people, indicating how they all matter to the school administrators. While the challenges are diverse, it was very evident that the most significant of them is the issue of government's centralized policy. That is, while government remains the major financier of inclusive education in the EU, most governments use a centralized funding system whereby all schools have to go through strict bureaucratic process to receive funds (Ebersold *et al.*, 2019). Loreman, Forlin and Sharma (2014) posited that the centralized system is inefficient as it causes undue delay in getting funds to the schools. The centralized system also exposes the whole financing regime to lack of transparency and sabotage given that authority to disburse funds is left in the hands of few people (Ramberg and Watkins, 2020).

Another issue that 20% of the respondents pointed to was the complexity of modern inclusive educational program and interventions. That is, with sophistication in teaching and learning within the inclusive environment, the same quantity of modern that could adequately cater for a school some years back can longer achieve its intended purpose (Berhanu, 2011). Ebersold *et al*. (2019) cited examples of schools procuring more technological tools and training more human resource to make inclusive education better. All these efforts have come to mean schools requiring more funds to run programs successfully. This is a reason that the schools currently face challenges with the financing of inclusive education. Similarly, some respondents were concerned about the complexity of financing models, disparity in the allocation of funds whereby priority is given to urban schools, and the issue of increased student enrolment for inclusive education.

7.3. Impact of financing challenges on in inclusive education output

From the earlier review, it was found that there are some challenges with the development of inclusive education as a whole. During the data collection process, the researcher determined whether the identified challenges with inclusive education output is statistically related to the challenges with financing as identified already. To do this, a linear correlation analysis was performed. The researcher used Pearson correlation with significance level of $p < 0.05$ to test the following hypotheses:

H1: *There is statistically significant relationship between financing challenges and inclusive education output*

H0: *There is statistically no significant relationship between financing challenges and inclusive education output*

In order to test the hypotheses above, the researcher used t-test statistic involving the 2x2 contingency table. To use the researcher categorized the respondents into two groups. These were those that generally rated their funding good funding (adequate, very adequate or abundant), and those that rated theirs as poor funding (woefully inadequate or inadequate). Next, the respondents were made to rate their inclusive education outcome into either satisfactory or non-satisfactory. This categorization was necessary for the two rows and two columns in the 2x2 contingency table as depicted below.

Table 4. **Categorization for 2x2 contingency table**

Inclusive outcome	**Good funding**		**Poor funding**	
	Number of respondents	**Percentage (%)**	**Number of respondents**	**Percentage (%)**
Satisfactory	12	75.00%	11	32.35
Non-satisfactory	4	25.00%	23	67.65
Total	16	100%	34	100%

Table 4 shows that among the 16 respondents who said they had good funding, 75% of them identified their inclusive education outcome as satisfactory while 25% said it was unsatisfactory. Conversely, among the 34 respondents who said they experienced poor funding, 32.35% of them said their inclusive education outcome was satisfactory while 67.65% said it was unsatisfactory. The next step in the correlation analysis was to find the marginal row totals and marginal column totals as indicated below.

Table 5. **Marginal and column row totals**

	Good funding	**Poor funding**	**Marginal row totals**
Satisfactory outcome	12	11	23
Non-satisfactory outcome	4	23	27
Marginal column totals	**16**	**34**	**50**

Next, the chi-square for the data was computed using the expected cell totals were computed and put in round bracket while the chi-square statistic was computed and put in block brackets. The computations were done with the online 2x2 contingency table software from Social Statistics (2021). The results have been presented in Table 6.

Table 6. **Expected totals and chi-square**

	Good funding	**Poor funding**	**Marginal row totals**
Satisfactory outcome	12 (7.36) [2.93]	11 (15.64) [1.38]	23
Non-satisfactory outcome	4 (8.64) [2.49]	23 (18.36) [1.17]	27
Marginal column totals	**16**	**34**	**50**

Based on Table 6, the chi-square statistic was computed as 7.9663 with p-value of 0.004766. This means the result is statistically significant at $p < 0.05$. For this reason, the null hypothesis will be rejected. By inference, there is statistically significant relationship between financing challenges and inclusive education output. Referring back to the earlier review, it would be noted that a good number of researchers agree with this outcome as Gubbels, Coppens and de Wolf (2018) highlighted that with inadequate funding, schools always face difficulty in achieving academic success.

7.4. Addressing the challenges with financing inclusive education

Based on earlier data about the challenges confronting financing, it was found the centralized nature of disbursement is the main problem that most schools faced. With that in mind, the researcher assumed that decentralizing funds allocation to inclusive education would be the best way to address the challenges with funding. However, in order to ensure effective decentralization of funds allocation using community-based funding scheme, it is important to have a model of disbursement that will deal with other related challenges such as equity, disparity and efficient resource allocation. To this end, the researcher presented three main models to the respondents based on earlier explanation of these models in literature. They three models are per-capita model, resource-based model and output-based model. Based on the advantages of each of the purposes that the researcher discussed with the respondents, the following are the answers they gave in terms of the best model to address the challenges with financing inclusive education in the EU.

Table 7. **Best model to address financing challenge**

	Decentralization funding model
Per-capita	26
Resource-based	18
Output-based	6

From table 7, it would be noted that the per-capita model and resource-based model are the two most effective models the respondents believe hold the key to addressing challenges with financing of inclusive education in EU. 26 respondents representing 52% of the sample opted for the per-capita model.

As noted in the literature section, such respondents were of the view that funding should be allocated to schools based on the number of special needs students that each school had (Marginson, 2018). Johnstone *et al*. (2019) was optimistic of the fact that the per-capita model is the most efficient way of ensuring fairness and equity given that each special needs student will be considered as a unit entity that required funding for the promotion of inclusive education. There were also 18 respondents representing 36% that held the view that the resource-based model is the desirable. Such respondents agreed with Kholmuminov, Kholmuminov and Wright (2019) who shared the view that emphasis should rather be based on the resource needs of the schools such as the special needs equipment and personnel they require. To those who support the resource-based model, their main argument is that the model helps in eliminating waste through the optimization of resources (Florian, 2019). For example, when more funding is sent to a particular school due to the number of special needs students, such schools may not have the right resources to fully utilize the funds. This way, there could be waste and lapses eventually deprives another school that is more competent in using the excess funding. Regardless of this advantage, the fact that more respondents selected the per-capita model means the administrators are optimistic that once they received the resources, they had the right expertize to effectively and efficiently utilized them.

Lastly, very few respondents believed that the output-based model is the best to address the financing challenges. The reason that can be assigned to this is that the output-based model fails to address some of the core challenges such as disparity and lack of equity in the allocation of funds. For example, a school may currently have better output because it is privileged to be receiving more funding from other sources than the government. Should the government also decentralized its funding policy by prioritizing such schools; it would mean the already deprived schools would continue to be at a disadvantage.

Meanwhile, the hypothesis tested earlier has confirmed there is statistically significant relationship between funding and output. By inference, schools that currently have good outputs have fewer funding issues compared to those with poorer outputs. This situation explains why few respondents supported the use of output-based model.

6. Conclusion

It has been established that member states of the EU have been obligated to provide quality education to all school-going-age students. The success of this educational requirement largely depends on finance. Financing and resource allocation is a critical factor in the implementation of inclusive education.

Therefore, governments must deploy proper structures and models that would ensure that inclusive education receives the best of finance and that no student is left out. Every student's potential could be fully identified, developed, and utilized when their educational needs are met. Therefore, governments in the EU must ensure that they channel the required resources for inclusive education to be successfully implemented.

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