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- Convergence of Romanian accounting regulations with IFRS

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Convergence of Romanian accounting regulations with IFRS. A longitudinal analysis

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Abstract

In this paper we analyse the evolution in the level of convergence of the Romanian accounting regulations with IFRS in the last decade. We focus our study on the accounting topics covered by IAS16, IAS17, IAS41 and SIC15. We find that in 2005 the regulations exhibit a good level of convergence for property, plant and equipment, a medium level of convergence for lease accounting and divergence for accounting for the agricultural activity. The overall convergence level improved over time for all the topics analysed. These results indicate that the companies with dual reporting may incur lower costs in applying IFRS. Moreover, the national regulations offer the opportunity for a higher level of comparability in Romania of the financial statements prepared under IFRS with those prepared under national regulations. However, we underline that the institutional factors (such as the tax influence over accounting) might negatively affect the convergence of practices.

Keywords: *Convergence, IFRS, Romanian accounting regulations, longitudinal analysis.*

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Introduction

The accounting profession faced in the last two decades an increase in the spread of the International Accounting Reporting Standards (IFRS) worldwide, with consequences for preparers and auditors. More and more countries require or allow IFRS application, generally for some companies (in most cases the listed ones). Another signal of the increasing acceptance of IFRS is the convergence of many local (national or regional) accounting regulations and standards[1] with IFRS. National regulators and standard-setters might choose to converge the national accounting principles and rules with IFRS for various reasons: to signal the acceptance of IFRS, to reduce the costs of companies using both national rules and IFRS[2], to increase the comparability between the financial statements issued by companies in the same country, to help preparers and users get accustomed to IFRS or to utilize the expertize in standard-setting of the IASB[3].

The Romanian regulators followed a convergence plan with IAS/IFRS in Romania, visible in the accounting regulations issued after 1999 (King et al., 2001). We investigate the development of the Romanian accounting regulations over the past ten years in order to comment on the convergence level achieved with IFRS. We focus our study on the accounting topics covered by IAS 16 *Property, plant and equipment*, IAS 17 *Leases*, IAS 41 *Agriculture* and SIC 15 *Operating leases – Incentives*.

Understanding the evolution of the convergence process is useful for accountants and auditors. The differences between the Romanian accounting regulations and IFRS signal the difficulties in working with two sets of requirements in the case of some companies. The subsidiaries of many multinationals utilize national regulations in their statutory financial statements, but also prepare a second set on IFRS for consolidation by the parent company. Preparers have an interest in using as much as possible the same accounting policies in both sets of financial statements (Albu, Albu and Alexander, 2014). The level of convergence also signals the impediments and cost of adopting IFRS (in the case of new listings or voluntary adoption of IFRS) (Larson and Street, 2004). Moreover, the process of convergence allows the profession to evolve in an accounting environment closer to IFRS.

1. Literature review

1.1. The evolution of the Romanian accounting regulations

The recent history of the Romanian accounting regulations is characterized by several rapid changes, following in most cases foreign models and influence. This process of regulatory change in Romania has been extensively investigated in the accounting literature (for example, by Albu and Albu, 2012; Feleagă and Feleagă, 2006; Ionaşcu et al., 2007; 2014; Mustață, 2008 among others).

Prior research in this area suggests that while initial reforms in the 1990s were inspired by the French model, the influence of the then IAS arose around 2000. Starting in 1999, IAS were included, with some carve-outs, in the national regulations. These regulations were applicable to all large companies. However, the level of compliance with IAS in financial statements prepared in accordance with national regulations was low (World Bank, 2003). Prior studies identified the following institutional factors as creating difficulties in the adoption of IFRS and being associated with the reduced level of compliance: tax influence, reduced level of pressure from users, unprepared accounting profession and reduced level of enforcement (Larson and Street, 2004; Ionaşcu, Ionaşcu and Munteanu, 2011; Albu and Albu, 2012).

New regulations (The Order of the Minister of Public Finance number 1752/2005) were issued in 2005 in order to prepare for EU accession. While these regulations enacted the European directives, many IFRS

[1] We refer to "regulations" as being accounting principles and rules issued by a State-dominated institution (called regulator), and "standards" as being accounting principles and rules issued by a private institution (called standard-setter). Under this distinction, we use the terminology "accounting regulations" to refer to the Romanian rules included in Ministerial Orders and "accounting standards" to refer to IFRS.

[2] For example, some Member States of the European Union require for listed companies the use of national rules in the separate financial statements and IFRS in the consolidated financial statements.

[3] Assuming that IFRS represent high quality accounting standards, the convergence process allows the improvement at a low cost of the national accounting principles and rules.

influences remained. Order 3055/2009 replaced Order 1752 and came into force in 2012 providing further clarification to regulatory text and stipulating additional rules. Most of these changes were also in line with IFRS. Therefore, Romania follows a process of convergence with IFRS in its national accounting regulations. This process is still ongoing, since OMFP 1802/2014 was issued along the same line – conformity with the European Directives, but also with influences from IFRS. OMFP 1802/2014 (with subsequent changes) is applicable to all entities not listed on a regulated capital market. Listed entities on a regulated market are required to apply IFRS in accordance with OMFP 1286/2012.

1.2. Convergence measurement and analysis – an international and national perspective

Convergence of national regulations with IFRS represents a reality of international accounting during the last decades. For the countries with fewer resources for standard setting IFRS represent a good benchmark to update national regulations. Moreover, countries intending the development of local markets see in IFRS the international language of accounting. This regulatory reality is accompanied in accounting research by the investigation of the level of convergence. While the tendency is easily observable by the overview of regulations[1], only specific measures and rigorous research are able to provide the full picture of the convergence process.

Consequently, literature on accounting convergence is emerging, and various methods to measure convergence are developed and employed. Qu and Zhang (2010) identified relevant studies on methods to measure formal harmonization, including the use of Euclidian distances, Jaccard's coefficient and Spearman's coefficient. Convergence is analysed as complete convergence, substantial convergence, substantial difference and complete difference (Qu and Zhang, 2010), absence and divergence (Ding et al., 2007) or as full convergence, substantial convergence or non-convergence with IFRS (Peng and Van der Laan Smith, 2010).

[1] For example, big auditing firms and professional bodies issued reports based on comparisons between national accounting principles and rules and IFRS.

A few recent studies investigate and measure the convergence of Romanian regulations with IFRS. General analyses are realized by professional bodies or big auditing firms, but in most cases present similarities and differences and are not based on specific convergence measures. For example, CECCAR (2010) compare IFRS for SMEs and national regulations to identify similarities and differences.

Research papers employ specific methodologies to determine the level of convergence. Mustață (2008) employs Jaccard's coefficient in order to estimate the evolution of the formal convergence of Romanian regulations with IFRS until 2007. Results show that the level of convergence increases over time, and is situated at 40.2% for the period 2003-2007. In order to compute this convergence score, accounting policies for 19 elements of the financial statements are analysed. Other studies are focused on particular elements of the financial statements. Coste and Fekete (2013) analyse the convergence level of the accounting policies for intangible and property, plant and equipment under the OMFP 3055 with IAS 16 and IAS 38. The convergence level obtained using Jaccard coefficient is of 76.47% for property, plant and equipment and of 68.75% for intangible assets.

Buculescu and Velicescu (2014) and Albu, Gîrbină and Cuzdriorean-Vladu (2011) examine the level of convergence of national regulations (OMFP 3055) with the IFRS for SMEs. Buculescu and Velicescu (2014) focus on property, plant and equipment and find a convergence level of 54.6%, with higher values of convergence for definition and recognition policies and lower values for the requirements regarding the scope and components of this category of elements. Albu, Gîrbină and Cuzdriorean-Vladu (2011) focus on inventories and find a convergence level of 51%.

Concluding, the studies investigating the convergence of Romanian regulations with IFRS indicate a good and increasing level of convergence. Differences might exist between the results of various studies because of the period covered and methodology followed to measure convergence. Existing research is usually focused on specific items and is based on the existing Romanian accounting regulations at a moment in time. A notable exception is Mustață (2008), following a longitudinal approach in analysing the convergence process. Studies investigating the convergence level, especially in a longitudinal manner, are still needed. These types of

studies might be of interest for practitioners and also regulators, in order to better understand the evolution of the Romanian accounting regulations.

2. Research methodology

We conduct an in-depth ten-year longitudinal study in order to analyse the level of convergence between Romanian accounting regulations and IFRS. The ten-year frame chosen is useful to show the development over time and to establish how the Romanian accounting model changed. The analysis is conducted for the accounting policies covered by IAS 16, IAS 17, IAS 41 and SIC 15. The selection of these standards is justified by the following reasons. We focus on two of the most common and used standards (IAS 16 and IAS 17), which eventually affect all the companies. We select a standard that covers more specialised activities (IAS 41), applicable to fewer companies. Moreover, we also select an interpretation of IAS 17 – SIC 15, which analyses the treatment that has to be applied by both the lessor and the lessee for an operating leasing when incentives are encountered.

The ten-year time frame could not be followed for all the chosen standards and regulations due to the fact that for some no equivalent or similar legislation was found in Romania. The requirements included in IAS 16 and IAS 17 are analysed for the entire time frame. The accounting policies covered by IAS 41 and SIC 15 have no equivalents in OMFP 1752 and OMFP 3055, the first Order mentioning them being OMFP 1802 issued in 2014.

The first step of the analysis consists in the identification of a list of accounting policies for each standard to be matched with the requirements in the national regulations. For IAS 16 the items of comparison chosen within the study are grouped in the following way: definitions, recognition, measurement and costs, depreciation and derecognition requirements. For IAS 17 and SIC 15, we grouped the content as follows: definitions, classification, accounting treatments, sale and leaseback transactions, and SIC 15 requirements. The IAS 41 was split into: definitions, recognition, earnings and losses.

We then determine the methodology to assess convergence. We follow prior research (Albu, Gîrbină and Cuzdriorean-Vladu, 2011; Buculescu and Velicescu, 2014) and derive the following scores to be analysed:

1. Full convergence – same treatments and specifications are included in IFRS and the Romanian regulations (marked with 1)
2. Complete absence – no specifications about the treatment described within IFRS can be found within Romanian regulations (marked with 0)
3. Differences that can be found such as:
   - c.1. less detailed leading to convergence – the Romanian regulations provide less details than IFRS but the general treatment is the same (marked with 0.8)
   - c.2. over detailed leading to convergence – the Romanian regulations provide more details than IFRS but the treatment is the same (marked with 1)
   - c.3. over detailed or less detailed leading to partial divergence (marked with 0.3)
   - c.4. over detailed or less detailed leading to complete divergence (marked with 0)

The score is selected considering the implications for the national regulations. The maximum score is granted either when the regulations were the same or more detailed, assuming that even further details could help in the convergence process. The score of 0.8 is attached to the incomplete regulations by taking into account that the lack of details can create difficulty in interpreting the regulations in line with the spirit of IFRS. No points are given when national regulations do not provide any information in line with IFRS or provide guidance that leads to divergence.

There are cases where the Romanian regulations were changed after the standard was issued. We compute the score by using the average over time. Also, when partial convergence matters arise, we compute the total value by dividing the total score that could have been obtained with the number of options presented by the Romanian regulations and multiplied the result with the number of options similar to the ones presented in IFRS. Case c.3. is used only when a certain degree of divergence occurred and important differences were generated. Moreover, in cases where the Romanian regulations did not present a direct indication about the accounting treatment and the treatment applied was the one used for another

group of assets but it was equivalent to the one described within IFRS, the attributed score is 0.8.

Finally, we compute the overall convergence score. The score obtained for all the items analysed is divided by the total score that would have been allocated in case of complete convergence.

3. Research results

We perform content analysis of the accounting policies included in the Romanian regulations and IFRS, following the methodology described above. We obtain the following results:

Table 1. The convergence level between the Romanian accounting regulations and IFRS

IFRS	OMFP 1752	OMFP 3055	OMFP 1802
IAS 16:			
Definitions	1.00	1.00	1.00
Recognition	0.58	0.68	0.95
Measurement and costs	0.61	0.66(6)	0.85
Depreciation	0.61	0.61	0.61
Derecognition	0.95	0.95	0.95
Convergence level	**75%**	**78.13%**	**87.2%**
IAS 17 and SIC 15:			
Definitions	0.6	0.6	0.6
Classification of leases	0.45	0.65	0.65
Accounting for leases	0.29	0.76	0.76
Sale and lease-back transactions	0.93	0.93	0.93
SIC15	0	0	1
Convergence level	**45.4%**	**58.8%**	**78.8%**
IAS 41:			
Definitions	0	0	1
Recognition and measurement	0	0	0.8
Earnings and losses	0	0	0
Convergence level	**0%**	**0%**	**60%**

Source: Authors' compilation

Table 1 illustrates a trend in increasing the convergence between the Romanian accounting regulations and IFRS for all the analysed items. The requirements for property, plant and equipment have a good level of convergence from 2005 (75%). This might be justified by the applicability of these requirements to all companies and also by the lack of impediments in achieving good convergence (such as predominantly fair value measurement or uncommon accounting treatments). Even if the *de jure* convergence becomes more and more clear, *de facto* convergence is less obvious in practice (Istrate, 2012).

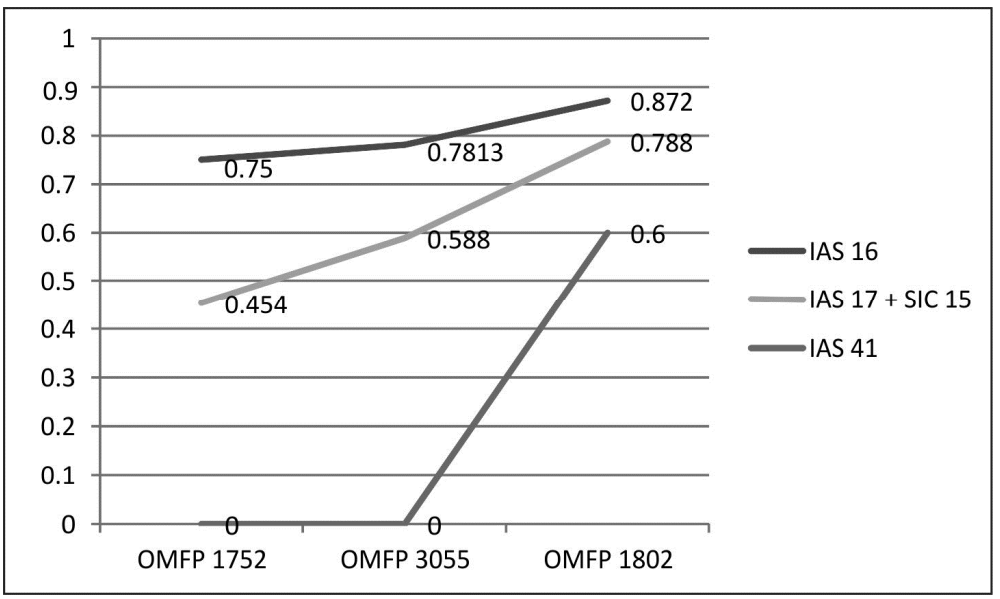
The results indicate a good level of convergence for the lease requirements. This might be explained by the introduction of substance over form and lease accounting in Romania around 2000. The level of convergence increases over time, but after a careful analysis, we notice that the increase in the latest years is generated by the introduction of SIC15 into the national regulations. For the other lease requirements, the increase in convergence occurred when OMFP 3055 was issued. Moreover, although lease accounting is an example of another set of policies frequently used, we notice that the level of convergence is smaller than in the case of property, plant and equipment.

We can also notice that for IAS 41, which is a specialized standard, the Romanian regulations made a big step in the latest period, going from no specifications to an almost full incorporation of IFRS policies within its content. We speculate that besides the habit of a lack of specific requirements for the agricultural activity in the Romanian accounting regulations, the extended use of

fair value measurement in IAS 41 represented a reason for the late convergence in this area. The profession and users needed time to adjust to fair value measurements.

Figure 1 presents the trend in the convergence of the national regulations with IFRS.

Figure 1. The trend in the convergence of the national regulations with IFRS



Source: Author's compilation

The increase in the convergence level with IFRS is obvious. However, we stress that these results capture the *de jure* convergence. This might have implications for the practices under the national regulations. However, given the rule-based approach, the strong linkage to taxation, the reduced experience with using fair value and also less active markets, accounting practices might not reflect the increasing level of convergence found in regulations. Additional research is needed in this area.

Conclusion

In this paper we analyse the evolution in the level of convergence of the Romanian accounting regulations with IFRS in the last decade. We focus our study on the accounting topics covered by IAS 16, IAS 17, IAS 41 and SIC 15. We find that in 2005 the regulations exhibit a good level of convergence for property, plant and equipment, a medium level of convergence for lease accounting, and divergence for accounting for the agricultural activity. The level of convergence improved over time, with values of about 80% or higher for the analysed topics, indicating that regulatory efforts have been made in order to improve convergence, but also that there is still room for improvements.

These results indicate that the companies with dual reporting might incur lower costs in applying IFRS. A high level of convergence has the potential not just to minimize the costs of companies with dual reporting, but also at this stage to encourage the development and opening of such companies and subsidiaries of multinationals, therefore influencing positively the Romanian economy and tax collections. Moreover, the national regulations offer the opportunity for a higher level of comparability in Romania of the financial statements prepared under IFRS and those prepared under the national regulations. However, we underline that the institutional factors (such as the tax influence over accounting) might negatively affect the convergence of practices.

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Factors supporting an adequate sizing of internal audit departments in the public sector

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Abstract

This article addresses the issue of determining the appropriate size for the internal audit compartments in the public sector. Public internal control in Romania in undergoing a broad transformation: moving from a standardized management and control (usually through regulations) to an objectives-based management and to a dual control, based on self-management (managerial control), as well as on separate evaluations by independent bodies (public external audit and public internal audit).

Within the article default factors are identified for sizing the audit structures: the risks of the organization and the expectations regarding the manner in which the activity can bring value, which is the basis for the allocation of resources. The dimensioning of the internal audit compartment is analysed in terms of seven critical factors, and a comparative analysis of the proposed models (determinants, strengths/weaknesses, applicability criteria) is presented. For the improvement of the internal audit in the public sector, the Model of the Internal Audit Capacity in the Public Sector is proposed, advanced by The Institute of Internal Auditors. According to it the evolution of the internal audit activity is structured around a number of levels to be attained in succession.

By identifying the factors considered critical for the sizing of the internal audit departments, which have no equivalent (counterpart) in the factors provided for in the current normative framework in Romania, the article contributes to the clarification of issues related to sizing models and procedures in the field.

***Keywords**: Internal audit; sizing of audit departments; critical factors in dimensioning; models for sizing the audit departments in the public sector.*

***JEL Classification**: M42; M48.*

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Introduction

Internal public control in Romania is undergoing an ample transformation process, which marks the transition from *standardised management and control* (generally, through normative acts), to *an objective-based management* and *a dual control*, based on *management self-control (managerial control)*, as well as on *separate assessments* made by independent bodies (*external public audit* and *internal public audit*).

The new type of management entails, *ex-ante*, undertaking clear and feasible objectives on setting the direction to follow in order to fulfil the needs of a society or of a target group, the allocation of resources (financial, human, material) to fulfil these objectives, *decision-making autonomy* in resources use, as well as the implementation of a *managerial accountability mechanism* for the results obtained.

The *managerial accountability* concept is not used just to "*make managers accountable for their financial decisions, but also to obtain the assurance that these decisions are adequate and implemented in the public interest"* (de Koning, 2007). Therefore, de Konig (2007) considers that "*managers need to be monitored in keeping with well-known rules and with quality norms able to foresee waste, fraud and irregularities"*.

Consequently, *managerial accountability* is in fact the final act of a management cycle, through which the head of a public entity is accountable for the decisions made, and for the results obtained by the entity, during a certain period, following the use of available resources, respectively.

Internal public audit plays a special part in ensuring the functionality of the managerial accountability mechanism. In keeping with law, the general objective of internal public audit is to enhance the quality of public entities' management, through an independent assessment of control processes, risk management and governance (*Law no. 672/2002*). In this respect, *Law no. 672/2002* provides that internal public audit needs to be conducted in relation to all activities within a public entity and there is a legal requirement that over ten activities, domains or systems, such as activities having a financial impact, payments, patrimony management, accounting systems, management systems and information systems etc. be audited at least once every three years, but it is not limited to that (*Law no. 672/2002*, Art. 15).

The mandatory requirements on the periodical conduct of internal audit entail an adequate sizing of the internal public audit department, to ensure the resources necessary to this activity.

1. Literature review

Referring to the organization of a public entity internal audit, de Koning (2007) considers that the responsibility to set up the internal audit department lays with its manager. This responsibility also includes the adequate sizing of the internal audit structure, for it to have the capacity to cover the sum of the public entity activities.

Furthermore, an adequate sizing involves identifying the answer to the following question: *What percent of the organization's resources should be allotted to the internal audit function?* (Anderson et al., 2010a).

In keeping with the study on the internal audit activity conducted by Ernst &Young at global level, in 2013, over 30% of respondents (internal audit executive managers) mentioned an increase of the audit function the previous year, while 37% expected an increase in the subsequent 24 months (Ernst &Young, 2013).

In keeping with the *Report on internal audit activity in the public sector for 2013,* issued by the Ministry of Public Finance (*Ministerul Finanţelor Publice* – MFP), one of the problems of internal public audit is the *under sizing of internal audit departments,* as well as the lack of independence, the inefficiency of the staff recruiting and training systems and a reduced implementation degree of the internal audit function on the local plan.

As to the sizing of the organizations' own internal public audit departments, the above mentioned report (MFP, 2013) shows:

- Approximately 73% of internal audit departments have only one internal auditor position, which is against the provisions of art. 2 letter f) of *law no. 672/2002 on internal public audit*, where there is provided the obligation to hire at least two full-time internal auditors;
- On sizing internal public audit departments, consideration was given exclusively to the legal obligation to ensure the internal audit function, the number of positions exceeding two persons in only 14% of the public entities;

- In the central public administration, in nine public entities whose managers have the capacity as main authorising officers, the size of internal audit departments does not ensure the observance of the periodicity in auditing or the coverage of the auditable scope;
- In the local public administration, no internal audit structure sizing was performed, so that 72 departments each have two internal auditor positions, while 580 departments each have just one internal auditor position.

Consequently, one problem of internal audit in the public sector is the absence of proper internal audit departments sizing, which would ensure the required number of auditors to carry out internal audit in keeping with the legal requirements. That is why, in order to perform an adequate sizing of internal audit departments in the public sector, it is important to study the factors that influence the *sizing of the internal audit departments in public entities.*

2. Research methodology

The objective of the research is to study the factors that influence the sizing of internal audit capabilities (audit departments) in public entities, to identify adequate solutions concerning the justification of the number of internal auditors.

The research methodology was based on studying the literature on the sizing of compartments for internal audit. Factors considered as determinant were analysed, and models used for sizing the departments of internal audit were studied.

3. Sizing of the internal audit departments. Factors proposed in the specialised literature

The International Standards for the Professional Practice of Internal Audit, issued by the Institute of Internal Auditors (IIA), do not provide specific requirements regarding the necessary number of internal auditors to ensure compliance with these standards (Anderson et al., 2010a).

Nevertheless, *Standard 2030 – Resources Administration* (IIA, 2013), provides the obligation of the audit executive manager to make sure that the internal audit department has adequate, sufficient and effectively allocated resources to fulfil the approved plan (Anderson et al., 2010a). The phrase "sufficient resources" involves, in fact, the adequate sizing of the internal audit department, an aspect clarified in the *Interpretation* of the standard, which provides that *"The word sufficient refers to the quantity of resources required to fulfil the plan"*.

Anderson and Dahle (2009) identify as inherent sizing factors: *the organisation's specific risks*, as well as *the expectation of the way the activity may add value*, which, in their opinion, are at the core of the decision basis (criteria) for the audit resources allotment process.

Referring to the planning process, Anderson and Dahle (2009) consider that it includes developing personnel plans, indicating thus an important factor underlying the sizing of the number of internal auditors: *the internal audit plans*.

In term of sizing of the internal audit department, the specialised literature identifies three traditional approaches implemented within organisations (Anderson et al., 2010a, b):

- *The static approach*, which starts from the existing sizing of the internal audit department and involves incremental modifications triggered by the emergence of changes within the organisation. The weakness of this approach is that there is no certainty that the initial sizing was adequate.
- *Risk analysis-based approach*, which involves that the audit department submits various audit plans to the management or to the audit committee, respectively the variant with existing resources, with a fixed percent increase, or with a fixed percent decrease. The weakness of this approach is the subjectivism or perception of risk by the audit committee or by the management.
- *Comparison-based approach*, which involves a sizing based on the comparison with the number of auditors in other organisations, using surveys on internal audit conducted at global level or in certain domains. The weakness of this approach is the failure to consider the effectiveness of the internal audit department with which the comparison is made or the country-level differences in legislation, culture etc.

Anderson et al. (2010a) drafted a conceptual model, adopted by the IIA of the U.S.A. to establish the *optimal size of an internal audit department*, based on seven critical, inter-related factors, respectively:

1. *Specific character of the organisation*. It refers to issues such as: whether the organisation is a public entity or a private company, the activity field, the size of the organisation, the location, the complexity, the financial situation, the risk involved by the field of activity etc.
2. *Particular characteristics of the organisation management structure*. This factor considers the way in which the organisation management is provided, whether there is a management board, audit committee or a risk management function.
3. *Internal audit department mission*. The mentioned issue considers the internal audit missions conducted by the internal audit department within the organization. The wider the scope of the activities conducted by the internal audit department, the higher should be the number of internal auditors.
4. *The value added by the internal audit.* This factor considers the way in which resources are allotted according to types of missions (compliance audit, operational audit, frauds investigation, financial audit, IT security etc.) and it generates an increase in the number of auditors in case the internal audit department adds a high value to the organization.
5. *Alignment between management and internal audit department relating to the role of internal audit.* It aims at an adequate correlation between the way management perceives the role and tasks of internal audit, as well as the internal audit missions conducted, on the one hand, and the way internal audit perceives the same issues, on the other.
6. *Specific character of internal audit.* It refers to the internal auditors' experience and to the techniques used by auditors in the missions they carry out.
7. *Internal audit services quality*. This factor involves the perception of the audit act quality, which influences both the resources allotted to it and, implicitly, the number of auditors.

The influence of the seven critical factors on the appropriate sizing of the internal audit department in a number of 236 companies, from various fields of activity, was analysed by Anderson et al. (2010a). Their results highlighted, in terms of sizing, an average of 19 internal auditors in internal audit departments, the highest number of internal auditors being recorded in the internal audit departments in the manufacturing field. The data on the average number of auditors, as well as on the number of auditors for each 1,000 employees are shown in **Table 1** (Anderson et al., 2010a).

Table 1. Sizing of the internal audit department (Aggregated results in terms of the seven critical factors)

Activity field	Health	Manufacturing	Sales	Services	Transports	Other
Average number of auditors	6,68	32,43	10,82	13,58	19,60	11,75
Number of auditors for each 1,000 employees	0,91	2,24	0,5	1,25	0,73	3,5

Source: Anderson et al., 2010a

Thus, Anderson et al. (2010a) established a series of influences (qualitative effects) of the critical factors on the sizing of the internal audit department, which are shown in **Table 2**. The established model may be applied to set the direction to follow relating to internal audit departments sizing (increase or decrease), the comparison with the average number of auditors in the field of activity, as well as the establishment of a number of internal auditors by applying the above mentioned factors.

Table 2. Sizing of the internal audit department

Variable	Number of auditors	Variable	Number of auditors
Critical factor 1: Specific character of the organization			
Stock exchange listing	It increases for the listed ones It decreases for the unlisted ones	Location	Increases for the ones established in the U.S.A.
Field of activity	Increases in certain fields	Size of the entity	Increases proportionally to the number of assets
Critical factor 2: Particularities of the organization management structure			
Control structure	The more decentralized the management structure is, the higher the number of auditors	Size of the audit committee	It increases if the number of members of the audit committee increases
Supervision conducted by the audit committee	It increases in proportion to the increase of the supervision level on the internal audit department	Frequency of meetings with committee members	It increases in proportion to the frequency of meetings
Structure of the internal audit committee	It increases in proportion to the representation of the company managers in the committee		
Critical factor 3: Internal audit department mission			
Externalizing internal audit activities	It decreases in proportion to the increase of externalized internal audit activities	Operational audit	It increases when operational audit is explicitly included in the sphere of internal audit missions
Critical factor 4: The value added by internal audit			
Use of data extraction tools	It increases in proportion to the use of data extraction tools	Use of fraud detection instruments	It decreases in proportion to the use of fraud detection tools
Critical factor 5: Alignment between management and internal audit department on internal audit role			
Mission/activities alignment	It increases if there is an alignment between the internal audit activities included in the mission of the internal audit department and the ones actually performed	The agreement between management and audit executive director on the importance of IT audit	It decreases when the management and the audit executive director do not agree on the importance of IT audit
Critical factor 6: Specific character of the internal audit department			
Chartered auditors	It decreases if the percent of chartered auditors by the IIA (Certified Internal Auditors - CIA) increases	Use of other departments to manage association compliance	It decreases when the activities relating to association compliance are conducted by other departments
Critical 7: Internal audit services quality			
Value added by internal audit	It increases if internal audit operates in keeping with the expectations of its beneficiaries		

Source: Anderson et al., 2010a.

The model concerning the internal audit department sizing established by Anderson et al. (2010a) has a series of weaknesses when used to size the internal audit departments in the public sector, for the following reasons:

- It does not generate a number of internal auditors as a basis to size departments, but proposes factors which influence the increase or decrease of the number of internal auditors;

- Critical factors or their variables apply to a little extent or are not specific at all to public entities. Thus, in the public sector, the value added by internal audit is rarely quantified, the term is not clarified, there is a small number of certified auditors (CIA), audit committees are set up in only a few central public entities etc.;
- The model may generate significant errors in the case of small audit functions. As shown before, the under-sizing of internal audit departments represents one of the internal audit weaknesses in the public sector;
- Difficulties in sizing the audit department when variables do not increase or decrease at the same time etc.;
- The model is highly complex and involves a thorough analysis of critical factors and their variables within a timeframe.

The weaknesses of the model listed above make it unsuitable for public entities in Romania and its implementation might generate errors in sizing of the internal audit departments.

Renard (2004) considers that the most important factor related to the sizing of internal audit departments is the *size of the organization*. In this sense, Renard (2004) appreciates that small and medium-sized enterprises will have between one and three auditors, while the internal audit department of a large international company will have between 20 and 100 internal auditors.

Renard (2004) also considers that *internationalization* is another criterion for the sizing of the internal audit department, respectively whether the organisation is a large national company or a large international company. In this instance, yet another criterion influencing the number of internal auditors is *the form in which internal audit is organized*, centralized or decentralized, respectively.

For medium-sized organizations, Renard (2004) considers that there is "*a reference average*" to set the number of internal auditors, respectively one auditor for each 1,000 employees, mentioning however that this is "*an average covering heterogeneous situations"*.

In terms of the sizing, this author lists the following possibilities:

- *large audit structures* such as "directorate made of offices", specific to large companies, which adopt a centralized-type of audit or a "central office" type one and branch-level internal audit structures, characteristic to large companies, which adopt a decentralized audit;
- *small and medium-sized audit structures,* "office" type, specific to small and medium-sized organisations. In the instance of "small offices", Renard (2004) indicates two possibilities in terms of organizing, with two different sizing: the "elementary structure", specific to the internal audit function being fulfilled by a single auditor, and the "simple structure", where the maximum number of auditors is set to a maximum of ten, respectively. In the instance the audit structure is made up of a single auditor, Renard (2004) shows that it is necessary to call on the assistance of external consultants, or to externalize certain internal audit activities, respectively.

Spencer Pickett (2006a, b) considers that it is necessary to set an adequate number of internal auditors in order to ensure the independence of this function and to fulfil the internal audit objectives (Spencer Pickett, 2006a). In this regard, the adequate number of internal auditors depends on the internal audit strategy of the organization, on the approved internal audit plans and on the approach relating to the carrying out of the internal audit activity (Spencer Pickett, 2006a, b).

Bal (2012) is of the opinion that the specific character of the organisation is important for the allotment of internal audit resources. This approach involves the comparison with three or four similar organisations and the consideration of factors such as: number of locations, international locations, centralisation degree, control environment, maturity of processes, audit sphere, changes in the activity and management risk tolerance. Bal (2012) considers risk as a primary key factor for the sizing of internal audit departments.

The *General Methodological norms for the organisation and operation of internal audit, based on the provisions of the Government Ordinance no. 119/1999 on internal audit and preventive financial control,* approved by *Order of the Ministry of Finance no. 332/2000*, currently abrogated, were drafted to implement the audit concept in the public sector in Romania.

The norms mentioned under *item 5 – Organisation of internal audit structures* the fact that main authorising officers were responsible for the organisation of internal

audit structures. Furthermore, the main authorising officers, based on certain criteria (annual volume of funds used, number of subordinated public entities, their territorial spread, number of employees of the central institution, as well as the weight of the ones in subordinated public entities) would decide on the organisation or taking over of internal audit activities of subordinated public entities (including under their authority).

The above-mentioned normative act provided clear criteria to substantiate the staffing plan in the instance of established internal audit structures, respectively the number of positions, recommending a minimal normative coefficient of 40 positions, as well as a maximal normative coefficient, one auditor for each 30 positions.

The national normative framework in force on internal public audit includes requirements on the sizing of internal audit departments in the public sector. Thus, art. 12 paragraph (4) of *Law no. 672/2002 on internal public audit* provides the sizing of internal audit departments based on the volume of activity and on the size of associated risks, so that it may ensure auditing of activities included in the scope of internal public audit.

As to the sizing, the *General norms on the conduct of internal public audit activity,* approved by the *Government Decision no. 1086/2013*, provide that the number of internal auditor positions is established by covering the following stages:

a. Identification of all activities carried out both within the public entity and in the entities subordinated/coordinated/under its authority, in which it directly carries out internal public audit missions;
b. Identification of risks associated to activities;
c. Identification of internal control forms attached to each activity;
d. Setting residual risks following the conduct of control forms;
e. Setting the time required to conduct internal public audit missions, by considering the following *factors*:
   - budget allotted to the entity;
   - number of entities subordinated/coordinated/under its authority;
   - number of employees;
   - specific character of the public entity;
   - complexity and social importance of the activities;
   - observance of periodicity in auditing;
   - activities involving high/medium risks.

Consequently, *Law no. 672/2002 on internal public audit* provides the size of risks associated to the audited activities and the activity volume as main factors, while in the *General norms on the conduct of internal public audit activity*, these factors are further detailed in seven "sub-factors".

The *Internal Audit Capability Model for the Public Sector* can be used to enhance the internal audit activity in the public sector; the model presents the evolution of the internal audit activity structured according to levels which need to be attained successively (IIA, 2009). Attaining a certain level of evolution depends on the results obtained relating to six elements which are considered essential for the internal audit activity, respectively: services provided by internal audit and the latter's role; staff management; professional practices; performance management and accountability; organisational culture and relations; governance structures.

According to the IIA, the evolution of an internal audit department in the public sector covers a number of five levels, presented in an ascending order, respectively: *Initial; Structured; Integrated; Managed; Optimised.*

The *Internal Audit Capability Model for the Public Sector* does not set factors relating to the sizing of internal audit department, but it lists elements characteristic to certain evolution levels, which indicate the need for sizing or the relation to sizing. This model provides the fact that level 1 – *Initial* – is characterized by an "isolated audit", respectively by an internal audit department which is not clearly structured and executes isolated missions. Furthermore, level 2 – *Structured* – involves setting basic processes concerning internal audit, as well as the fact that regularity audit is predominant.

In this respect, level 3 – *Integrated* – provides, as results relating to the essential element "*staff management*", the resources for the fulfilment of audit plans, an issue which indicates "the planned activity volume" as a sizing factor. For level 4 – *Managed* – the mentioned volume provides the following essential activities: identification of the resources required to approach the most important and high risk prone areas of the organisation, as well as the quantification of staffing requirements, which would allow internal audit to fulfil its activities. In the instance of

level 5 – *Optimized* – the model provides as an essential activity the analysis and drafting of requirements concerning auditing staff required for the internal audit activity, including in quantitative terms.

A comparison between the factors to be taken into account in sizing the internal audit departments established by the legislation in the field of internal public audit in Romania and the ones mentioned in the specialised literature is listed in the Table 3. It shows a similarity among the seven factors provided by the legislation in the field of internal public audit in Romania for the sizing of internal audit departments and the factors mentioned in the specialized literature. The sizing factor relating to the budget allotted to the entity was not mentioned in the analysed literature.

The specialised literature identifies more than six factors which substantiate the sizing of the internal audit departments and which have no correspondence in the legislation governing the internal public audit field in Romania, respectively: the characteristics of the organization management structure; mission of the internal audit department; value added by internal audit; alignment between the management and the internal audit department on the role of internal audit; specific character of the internal audit department; quality of the internal audit services.

Table 3. Factors for sizing the internal audit department, in the Romanian legislation and the specialized literature. Comparative approach

Factors provided in the legislation regulating internal public audit	Factors provided in the specialised literature on internal audit
Activity volume	Planned activity volume (Internal Audit Capability Model for Public Sector, 2009)
Specific character of the public entity	Specific character of the organisation (Anderson et al., 2010a; Bal, 2012)
	Particularities of the organisation management structure (Anderson et al., 2010a)
	Internal audit department mission (Anderson et al., 2010a)
	Value added by internal audit (Anderson et al., 2010a)
	Alignment between management and internal audit department concerning the role of internal audit (Anderson et al., 2010a)
	Specific character of the internal audit department (Anderson et al., 2010a)
	Internal audit services quality (Anderson et al., 2010a)
High/medium risk activities	Risks specific to the organisation (Anderson and Dahle, 2009; Bal, 2012)
	Management risk tolerance (Bal, 2012)
Number of employees	Organisation size (Renard, 2004)
	International locations/internationalization (Bal, 2012; Renard, 2004)
Number of entities subordinated/ coordinated/under its authority	Number of locations (Bal, 2012)
	Degree of centralization (Bal, 2012)
	Control environment (Bal, 2012)
Compliance with auditing periodicity	Audit scope (Bal, 2012)
Complexity and social importance of activities	Process maturity (Bal, 2012)
	Degree of change in the activity (Bal, 2012)
Budget allotted to the entity	

Source: Author's processing.

Conclusions

The absence of a sizing of the internal audit department is a problem of internal audit in the public sector. An under-sized internal audit department cannot provide the fulfilment of the objectives stipulated in the legislation, its activity being affected by the scarcity of allotted resources.

Therefore, approaching the issue of internal audit departments sizing in the public sector represents the first step required to enhance internal audit independence.

It is important to identify and study the main determinant factors influencing *the sizing of internal audit departments*, in order to set the internal auditors number in the public sector.

The specialised literature mentions a series of factors which influence internal audit departments sizing. The analysis conducted showed that most of the factors provided by the legislation in the field of internal public audit are related with the factors listed by the relevant literature.

However, this literature mentioned factors considered critical for internal audit departments sizing and which have no correspondent in the factors provided by the normative framework on internal public audit. These factors are highlighted throughout the article, as a contribution to the improvement of the normative and regulatory framework in the field.

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History of auditing in Russia. Periodization and challenges of development

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Abstract

This paper discusses the recent history of auditing in Russia from 1987 to the present time. This kind of research, such as any inquiry into history, calls for a well-grounded periodization. For the purposes of this study, factors were determined which influence the regulatory and methodological support of auditing; in accordance with the results of the analysis of their time intersections – the logical addition – qualitative leaps in the development of auditing in Russia were identified, which are represented as stages of its evolution. Through the application of this method, four stages in the recent history of auditing in Russia were identified: pre-history (the birth of the Russian auditing, the "wild" auditing); establishment of auditing in Russia; government regulation and licensing; self-regulation of audit activity.

Keywords: *Audit, history, historical stage, auditing standards, Russia.*

JEL Classification: *M42, M48.*

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Introduction

Auditing in its modern forms appeared in Russia in the second half of the 1980s, during the Perestroika period. It took almost 30 years, and today we have good reason to claim that "auditing has become one of Russia's most successful business sectors" (Mennicken, 2010, p. 334). The recent history of Russian auditing also has its chroniclers and exegetes, both in Russia and abroad. The development of auditing in Russia and its first successes here were described in Enthoven et al. (1998). The chronology of auditing development in the light of its legislative regulation and of the evolution of its methodological framework were presented in sufficient detail in the monographs written by Sokolov and Terekhov (2004) and McGee and Preobragenskaya (2005). Samsonova-Taddei (2013) studied the evolution of a legislative framework for auditing in Russia as a local site of globalization, and, in particular, the responses of local audit firms to the implementation of International Standards on Auditing (ISAs) in Russia. Sucher and Bychkova (2001) have identified the auditor independence rule requirements that have been implemented into the laws and codes of practice in Russia. Menniken (2008), taking a large post-Soviet Russian audit firm as an example, described the circulation of international auditing standards in Russia as one of "connecting worlds" and translation. In Menniken (2010) the roles that images and ideas of market creation played in the re-articulation of relations between government, audit expertise and professional organisation in post-Soviet Russia are discussed. The case of one of the biggest Russian companies Gazprom and its auditor, PricewaterhouseCoopers, is regarded as an example of globalization and multinational auditing by Alon and Dwyer (2012).

Thus, some aspects of the recent history of auditing in Russia have attracted researchers' attention or have been investigated in multiple publications. Meanwhile, the duration of these transformations provided a reasonable basis for interpreting the changes as a complete process. The author of this paper considers that this kind of research requires a well-grounded periodization.

1. Research hypothesis

This study is aimed at creating a periodization of the development of audit activity in Russia with the help of the operation of logical addition on chronological climaxes of regulatory and methodological development of auditing. Qualitative leaps in the development of auditing are described by a set of factors influencing the legislative and technological support of auditing.

Criteria of periodization or factors relevant for the development of auditing in Russia, in our opinion, are as follows:

1. A major change of legislation in the field of audit;
2. Improvements in the standardization practice of audit activity;
3. A change in auditing techniques;
4. Evolution of the independence principle;
5. Introduction of ethical standards and codes of professional conduct for auditors;
6. Integration of the Russian auditing into the international system;
7. Changes in the forms of audit reports;
8. Situation on the Russian audit market;
9. Development of types of audit business activities;
10. Evolution of the academic coverage of audit theory and practice.

Each of the factors has its own chronology of development. Their logical addition should create qualitative leaps in the development of audit activity, which can be represented as stages in the development of auditing. We have essentially a matrix in which the horizontal axis shows the factors of influences and the vertical axis the time-series representing the operation of a given factor.

It is important to note that these factors play different roles in the development of auditing. For the purposes of this study, they can be divided into "active" and "passive". The active factors cause changes and development of other factors, while the passive factors result from the influence of other factors. For instance, the adoption of a new law on audit (an active factor) can lead to major changes in the audit market and in auditing techniques (passive factors). Let us consider the chronology of the development of the criteria listed above.

2. Chronology of the factors influencing the development of auditing in Russia

2.1. A major change of legislation in the field of audit

The change of auditing legislation is an active factor for the development of auditing in Russia. The chronology for the emergence of this factor is connected with the adoption, on September 8, 1987, of the Resolution of the Union of Soviet Socialist Republics (USSR) Council of Ministers on "Creating a Soviet Audit Organization". Pursuant to the provisions of this resolution, a corporation for providing audit services, *Inaudit*, was established under the auspices of the Chief Directorate of Monetary Control at the USSR Ministry of Finance. Regulatory control over auditing in Russia was at the initial stage of its development. In 1991-1993, a draft law on "Audit Activity" was prepared. This was, in fact, a period of "wild" voluntary audit in the Russian Federation, which was based on a variety of different principles, starting from the rules of statutory audit to international auditing standards (used by the then Big Six, now the Big Four companies).

Presidential Decree No. 2296 of December 12, 1993 introduced the first rules regarding the audit activity in the form of "Provisional Rules of Audit Activity", which define auditing as an independent business activity. These rules, together with subsequent Resolutions adopted by the Government of the Russian Federation, established a system of auditor certification and licensing of audit activity. Four types of auditor certificates and licences were introduced:

- General audit;
- Bank audit;
- Insurance audit; and
- Audit of commodity and stock exchanges, off-budgetary funds and investment institutions.

Provisional rules of audit activity were the first general standards for auditing in Russia; they gave a definition of auditing and its types, asserted the principles of auditing as well as the rights and responsibilities of the auditor and the client, and also types of audit reports. A rapid growth in the number of auditors and audit firms followed, owing to the development of the mandatory auditing market. The first generation of auditing standards appeared, approved by the Commission on Auditing Activity under the President of the Russian Federation.

The first Federal Law on "Auditing" No. 119-FZ of July 13, 2001 consolidated the statutory framework for auditor certification and licensing of audit activity. New types of Federal Standards of Auditing Activity (FPSAD) were introduced, which greatly facilitated the rapid growth of the auditing market.

Changes in the mechanism of audit regulation were heralded by the adoption of the new law on "Auditing" No. 307-FZ of December 30, 2008. The institution of self-regulation of audit activity and a single auditor's qualification certificate were introduced in Russia. Six self-regulatory organizations (SROs) of auditors were established and began to work, of which five continue to operate today:

- Audit Chamber of Russia;
- Institute of Professional Auditors;
- Moscow Audit Chamber;
- Russian Collegium of Auditors; and
- Auditor Association Sodruzhestvo.

Changes in quantitative requirements for mandatory auditing, the need to retake an exam in order to obtain new auditor qualification certificates, and tightening of quality control over audit activity led to stagnation on the audit market and a sharp reduction in the number of auditors and audit firms.

2.2. Improvements in the standardization practice of audit activity

Improvements in the standardization of audit practice are also an active factor for the development of auditing in Russia. Prior to 1996, auditing in the Russian Federation had been carried out based on company internal auditing standards. Russian auditing practices led to the formation and, thereafter, to the application of three generations of auditing standards nationwide. Currently, the transition to ISAs has been pronounced.

The first generation of Russian auditing standards, which all in all numbered 39 standards, was developed in the period 1996-2001 and approved by the Russian Federation Presidential Commission on Auditing Activities. Content-wise, they comply with system-oriented auditing.

The second generation of auditing standards, also known as Federal Rules (Standards) of Auditing Activities (FPSAD), was developed between 2002 and 2008. Altogether, the Government adopted 34 rules which were created on the basis of IASs analysis and, in essence, have acquired certain elements of risk-oriented auditing technologies.

Following that, between 2010 and 2011, the Russian Federation Ministry of Finance developed and adopted 11 Federal standards of auditing of *the third generation*. Content-wise, these standards closely approach those of ICA. The latest standards are supposed to be the final stage in preparation to the ICA transition, planned for the year 2014.

2.3. Changes in auditing techniques

The change of auditing techniques is a passive factor. Russian audit originated on the basis of revision technologies, which to a greater extent are similar to the compliance audit, i.e. with the testing of the company accounting standards (Guzov, 2013), intuitive determination or ignoring the level of materiality, risks and sampling.

The complexity in defining the chronological order, in which a certain dominant audit technology was applied, can be explained by stratification of audit firms, their division into major, medium-size and small ones, also by the failure to obtain the objective data on the auditors' application of internal audit standard rules (Guzov and Savenkova, 2013; Guzov, 2014).

In fact, from the very beginning major international audit companies (primarily the 'Big Four') started application of risk-oriented technologies in Russia in the beginning of the 1990s (Guzov and Strelnikonikova, 2015). More than that, these companies also train their employees using Association for Chartered Certified Accountants' (ACCA) and Certified Public Accountants' (CPA) programs the successful completion of which was emphasized as a prerequisite for partnership in the said companies.

Realization of TASIS project *Audit in Russia 1* in 2001 facilitated the mastery of risk-oriented technologies by major Russian audit companies. Work procedures and technology package of operational documentation applied in audit was laid open to public. The fact that major Russian audit companies joined international audit networks and won international audit tenders may serve indirect proof of their successful mastery of the technologies (Guzov and Strelnikonikova, 2015).

In the period between 1996 and 2008 Russian small and medium-size audit companies were mastering system-oriented audit techniques based on auditing standards. It seems that transition of small and medium-size audit companies to risk-oriented technologies is now at its beginning, since outside control reveals these companies' typical mistakes, i.e. a low level of audit planning, the failure to carry a review engagement before the auditor's opinion is formed, also the failure to provide a sampling description and risk assessment (Current problems, 2013).

2.4. Evolution of the independence principle

The evolution of the independence principle is a passive factor. In the "wild" audit period it was possible that the independence principle was neither observed, nor controlled. Specified inclusion of this principle dates back to 1993; first declaration forms were filled in 2002, and the feasible check into its observance started between 2005-2008 after Provisional guidelines and the program for professional associations accredited by the Russian Federation Ministry of Finance to carry on checks into the audit services quality and after FPSAD 'Quality Services Control in Audit Companies' were adopted.

In 2012 they worked out "Rules of auditors" and audit companies' independence. They provided a conceptual approach towards the observance of independence and its application, and also an auditor's formal opinion report including instruction as to the restriction in its use and disclosure. The Rules provide a detailed understanding of an auditor's independence.

2.5. Introduction of ethical standards and codes of professional conduct for auditors

The introduction of ethical standards and codes of professional conduct is an active factor in the development of Russian auditing. In the beginning of the 1990s Auditors' Chambers in Russia started at their own and sole discretion to draw up ethical rules of conduct for auditors. The first Professional ethics code for auditors in Russia was elaborated and adopted in 2003 (as amended in 2007).

The new law on "Auditing" passed in 2008 made it binding for auditors in Russia to observe Professional ethics code. Currently in operation is Professional ethics code for auditors adopted in 2012. It includes basic ethics principles, a conceptual approach to their observance and application in concrete situations. Without prejudice to the parallelism of the Russian Code and International Federation of Accountants (IFAC) Code of Ethics, Russian auditors insist on direct descent of ethics principles from Immanuel Kant's categorical imperative, the ethics and metaphysics of which are rather popular among representatives of professional and academic communities.

2.6. Integration of Russian audit into the global system

Integration is an active factor which contributed to the development of Russian auditing. Two stages can be distinguished in the process of Russian audit integration into the global system.

The first one dates back to the years 2001 to 2006, and corresponds to the acquisition of technical aid from international organizations (TASIS project *Audit in Russia 1 and 2* – translation of ISAs in order to facilitate federal auditing rules).

The second stage was connected with the declared adoption in 2014 of international audit rules and the expected (in connection with that) engagement of Russian experts into their elaboration.

2.7. Changes in the forms of audit reports

The changes in the forms of audit reports is a passive factor. The first Russian auditing standard dates back to 1996 and is known as the "Audit Opinion Report". It was prepared to a major extent owing to the lobby of the Big Four companies and compiled on the basis of ISAs. It introduced the following types of formal opinion reports, i.e. unqualified opinion, qualified opinion, adverse opinion and also the disclaimer of opinion. The 2010 standard rules implemented non-modified and modified audit opinion reports. Also defined was the "decision-matrix" system connected with the typology of auditor opinion modification including considerable non-comprehensive and comprehensive influence.

2.8. Situation on the Russian audit market

The situation on the audit market is a passive factor. Judging from some estimates, in the time of the "wild" audit there were around 800-900 audit firms, with up to 5,000 practicing auditors.

The first statistical survey of the Russian audit market was launched in 2006. Results of the expert analysis showed that somewhat 4,500-5,000 audit firms actually carried on business on the audit market in 2005. For the purposes of the market analysis of audit services and relying on the credibility and accuracy of the available data, the number of audit firms in Russia in the year 2005 (i.e. within the time interval fixed through expertise) could be set at 4,700.

The development of the audit market of the period 2004-2008 is characterized by a quick growth of audit income, of the number of auditors and clients of audit firms. Yet, the level of modified audit opinion reports remained at approximately 40-50%.

Major quantitative indices of the audit market development in Russia in the years 2009-2013 are shown in **Table 1**. The development of the audit market in the given period is characterized by stagnation of the audit firms' income. Implementation of self-regulation in audit profession and a new unified qualification certificate is followed by a dramatic decrease in the number of auditors, yet, with the number of audit firms remaining stable. Likewise, noticeable is the drastic decrease in the level of modified audit reports issuance.

Table 1. Russian audit market in the years 2009-2013

Year	Audit firms' income (bln. rubles)	Number of audit firms (thousands)	Number of auditors (thousands)	Number of clients (thousands)	Level of modified audit reports issuance (%)
2009	49.6	6.9	38.8	92.7	44.2
2010	49.1	6.3	26.3	60.6	41.4
2011	50.0	6.2	26.8 (1.1)	75.6	33.8
2012	51.0	5.7	24.1 (3.2)	70.0	29.0
2013	52.2	5.5	23.0 (3.2)	68.4	25.9

Source: Authors' processing, based on the main indicators of the audit services market in the Russian Federation.

The trends for the stagnation of the audit firms' income and decrease in the number of auditors are likely to carry on in the nearest future.

2.9. Development of types of audit business activities

The diversification of audit activities is a passive factor. Alongside with the development of audit practices, there appear new technologies for consulting business and outsourcing bookkeeping and accounting services. As compared to the year 2005 when the share of non-audit activities in audit firms combined income equaled 35%, in the year 2008 this figure was 40-55%, and in 2013 it was already 46-63%. In other words, currently regional audit companies generate their principle income from consulting and accounting services.

In an indirect way this trend evidences intensification of the audit market monopolization.

2.10. Evolution of the academic coverage of audit theory and practice

The evolution of audit in the academic environment is an active factor. In the 1990s much work was done under the editorship of Professor Y.V. Sokolov to have publications on audit translated from foreign languages. Thus, books by such authors as Adams (2005), Arens and Loebbecke (2001) saw light, as well as the translated standard textbook "Montgomery's Auditing" (Defliese et al., 1997). Publications released within the framework of TASIS project *Audit in Russia 1* have made a vast contribution into the development of risk-oriented audit techniques. To summarize the project results a monograph by Remizov and Tabalina (2003), "Auditing: Modern methodology: Audit of Financial Statements in Compliance with ISAs and Federal Standards on Audit Activities (FPSAD)" (2003), was published. For the first time in history this book described Russian interpretation of risk-oriented audit programs.

There followed a series of profound research materials published in that period. Among them, there were: the research work by Skobarya (1998) dedicated to audit documentation flow; Bychkova and Gazaryan (1998) on audit planning; Bychkova and Rasmathanova (2003) on risk appraisal; Bychkova (1998) on audit evidence; Eliseeva and Terekhov (1998) on sampling in audit.

Unfortunately, as a general rule, the textbooks on audit published in great numbers in the last twenty years describe technologies of compliance audit and of the checks into regulatory bookkeeping and accounting. This evidently leads to the fact that employees working for small and medium-sized audit firms fail to have a good handle in risk-oriented audit technologies and are very sensitive to whatever novelties are being introduced into audit standard rules.

Russian audit journals are generally focused on discussing issues in connection with the adaptation of audit standard rules and realization of audit programs. Independent academic studies in the sphere of audit are practically non-existent. No wonder that representatives from Russia rather seldom make reports at the European Congress of accountants. Such state of things, on the whole, indicates a serious information lag which a good number of Russian audit firms experience concerning modern risk-oriented technologies of auditing. In 2013-2014 St. Petersburg State University was one educational organization which has a joint diploma with ACCA. And this is now becoming a general trend in Russian leading higher schools.

Conclusions

Logic addition of the considered chronological order of factors presents the history of audit development in Russia divided into the following time periods (Table 2):

Period 1. 1987-1993: *Prehistory* (origination of Russian audit, i.e. "wild" audit);

Period 2. 1993-2001: *Formation of audit in Russia*;

Period 3. 2001-2008: *Government regulation and licensing*;

Period 4. 2009 until currently: *Self-regulation of audit*.

Table 2. Log frame matrix for monitoring factors affecting the development of audit in Russia (Yes – available influence; No – absence of influence; A – active factor; P – passive factor)

Impact factors	1987-1993	1993-2001	2001-2008	2009-present
1 – A	Yes	Yes	Yes	Yes
2 – A	No	Yes	Yes	Yes
3 – P	No	Yes	Yes	Yes
4 – P	No	Yes	No	Yes
5 – A	No	No	Yes	Yes
6 – A	No	No	Yes	Yes
7 – P	No	Yes	Yes	Yes
8 – P	No	Yes	Yes	Yes
9 – P	No	Yes	Yes	Yes
10 – A	No	Yes	Yes	Yes

Source: Authors' processing.

The content of the present-day stage of audit development in Russia is highlighted by the developing system of self-regulation, the transition to international standard rules in auditing and to risk-oriented technologies, in the circumstances of the audit market stagnation, the dramatic decrease in the number of auditors, the information lag and publication scarcity in terms of audit innovations coverage and of intensification of the system of audit quality control.

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Financial and non-financial reporting in Romanian entities operating in agriculture, forestry, and fishery

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Abstract

Due to the increased interest for sustainability issues, entities that operate in the areas agriculture, forestry and fishery are exposed to a variety of ecological challenges. Moreover, such fields are generally of strategic importance for a country's economy, which also increases their exposure to public debate. The present study aims to provide a detailed and accurate description of the financial and non-financial information made available by listed Romanian entities operating in agriculture, forestry and fishery. The research goes beyond the mere description of the content of shareholders' reports. Its purpose is to assess the financial performance and stability of selected companies and to investigate the relationships between the financial well-being of such companies and the extent to which they disclose non-financial information. The sample consists of companies which operate in the business of fields agriculture, forestry or fishery and are listed at the Bucharest Stock Exchange in Romania.

KEYWORDS: *Agriculture; sustainability; reporting; performance; Bucharest Stock Exchange.*

JEL Classification: *M41; M42; Q15; Q22.*

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Introduction

Entities that operate in the areas agriculture, forestry and fishery face a variety of ecological challenges. Moreover, such fields are generally of strategic importance for a country's economy, so that this area has caught the researchers' attention over time. The academic literature includes several studies that deal with financial and non-financial reporting in these operational areas. For instance, Jack (2007) expects to clarify the difficulties with which farmers cope when using accounting and to explore the current agricultural environment, whereas this environment requests farmers more strongly than ever to engage in accounting activities. The evidence collected for this paper puts forward that in the face of corporate power or "post-productivist" activities, farmers are obliged to become engaged with accounting to a greater extent than they had in the past. In the same note, Bosch, Sabata Aliberch and García Blandón (2012) conduct an empirical research that compares and contrasts the accounting difficulties stemming from the use of two valuation methods for biological assets (fair value and historical cost accounting) in the agricultural sector.

The study of Whittaker, McManus and Smith (2013) compares 11 existing greenhouse gas (GHG) accounting tools produced in order to calculate emissions from arable crops, either for food or bioenergy production in the UK, whereas a multi-criteria-analysis is performed to test their relative strengths and weaknesses. Whittaker, McManus and Smith (2013) argue the significance of their study by emphasizing the fact that, of all economic sectors in the UK, agriculture contributes with around 9% of GHG emissions annually, and is a significant component of the lifecycle emissions of many everyday food and other products. In a similar fashion, O'Brien et al. (2014) compare the effect of applying two different methods when completing a marginal abatement cost curve analysis of national agricultural GHG emissions. This study adds to the body of research that proves the importance of sustainability in agriculture, by showing that the agricultural sector emitted 10% of European Union GHG emissions in 2011. On an international basis, this percentage varied from 2% in Malta to over 30% in Ireland.

Besides the task of decreasing GHG emissions, agriculture is also faced with the challenge of rising production to feed a mounting world population, and providing feedstock for expanding biofuel production. Without any doubt, the agri-food industry is crucial. However, there is little accounting academic research on agri-food industry, and little consideration of accounting issues in the agricultural literature (Argiles and Slof, 2001; Juchau and Hill, 2000). The present study tries to fill in this research gap by investigating the financial and non-financial reporting practices of companies operating in the agricultural sector, as well as of companies from related fields (namely forestry and fishery). First, the research design is described in detail. Then, the results of the research are presented and discussed and the final section of the paper includes the conclusions.

1. Research design

In terms of **research philosophy**, the present research reflects the philosophy of **positivism** (in accordance with the current trends in accounting research identified by Mocanu, 2015b), which is traditionally spread in natural sciences. As emphasized by Saunders, Lewis and Thornhill (2009), the research philosophy contains assumptions about the researchers' view of the world that have great impact on the choice of the research strategy and methods. First of all, within the philosophy of positivism, the researcher focuses not on impressions, but on facts that build the observable social reality typically investigated by natural scientists (Remenyi et al., 1998). In the financial field, as mentioned by Jensen (1976) cited by Ionaşcu (1997), the philosophy of positivism translates in a theory able to explain why is accounting what it is, why do accountants do what they do and which are the effects of these phenomena on society and economy. Second of all, positivist research is undertaken in a value-free way. As far as possible, the researcher is external to the process of data collection, in other words – does not affect, nor is affected by the subject of research (Saunders, Lewis and Thornhill , 2009).

In terms of **research purpose**, the present study is designed both as a descriptive, and as an explanatory study. As defined by Robson (2002), the object of **descriptive** research is to offer an accurate profile of persons, events or situations. Accordingly, the present study aims to provide a detailed and accurate description of the financial and non-financial information made available by listed Romanian entities operating in

agriculture, forestry, and fishery. However, it goes beyond the mere description of the content of shareholders' reports and engage in an **exploratory** research, too. The purpose is to assess the financial performance and stability of selected companies and to explain the relationships between the financial well-being of such companies and the extent to which they publish non-financial information.

In order to gain answers to the paper's research questions, the authors chose to carry out an analysis of **secondary data**. By definition, secondary data is data that has already been collected for some other purpose. Saunders, Lewis and Thornhill (2007) identifies the following types of secondary data:

- **Documentary secondary data**, consisting in *written materials* (such as organisation's databases, communications, or websites; reports and minutes of committees; journals; newspapers; diaries and interview transcripts) and *non-written materials* (e.g. media accounts; voice recordings; video recordings);
- **Multiple source secondary data**, which may be *area-based* (such as country reports; government publications; books; journals) or *time-series-based* (industry statistics and reports; government publications; European Union publications; books; journals)
- **Survey secondary data**, including censuses, continuous and regular surveys, as well as ad hoc surveys undertaken by entities such as governmental and non-governmental bodies or large organisations.

For the purposes of the present research, authors employed the first type of data, namely documentary secondary data comprising the shareholders' reporting packages made available online on the website of the Bucharest Stock Exchange in Romania for the companies in the sample. The reasons for this choice of data sourcing are the advantages of using secondary data, such as: they have fewer resource requirements; they provide an unobtrusive measure, which is beneficial especially in sensitive organizational situations such as going concern issues; and they may be checked relatively easy, being both permanent and publicly available. Moreover, researchers are independent of secondary data, thus this choice is consistent with the philosophy of positivism.

The sample comprises all companies that operate in agriculture, forestry and fishery and are listed at the Bucharest Stock Exchange in Romania. Consequently, the sample consists of 23 organisations with the following NACE codes as displayed in **Table 1** (Nomenclature statistique des activités économiques dans la Communauté européenne, *En*. Statistical classification of economic activities in the European Community).

Table 1. Structure of the sample by activity

Type of activity	No.	%
111 Growing of cereals (except rice), leguminous crops and oil seeds	5	22%
161 Support activities for crop production	6	26%
147 Raising of poultry	5	22%
Others (146 Raising of swine/pigs, 130 Plant propagation, 220 Logging, 210 Silviculture and other forestry activities, 164 Seed processing for propagation, and 322 Freshwater aquaculture)	7	30%
TOTAL	23	100%

Source: Authors' processing.

Additionally, **Table 2** presents the geographical dispersion of the selected companies, in order to provide a more comprehensive overview on the sample. From an administrative point of view, Romania is divided into 41 districts and 8 regions, as follows: Region I North-East comprising the districts Bacău, Botoşani, Iaşi, Neamț, Suceava, and Vaslui; Region II South-East: Brăila, Buzău, Constanța, Galați, Vrancea, and Tulcea; Region III South: Argeş, Călăraşi, Dâmbovița, Giurgiu, Ialomița, Prahova, and Teleorman; Region IV South West: Dolj, Gorj, Mehedinți, Olt, and Vâlcea; Region V West: Arad, Caraş-Severin, Hunedoara şi Timiş; Region VI North-West: Bihor, Bistrița-Năsăud, Cluj, Maramureş, Satu-Mare şi Sălaj; Region VII Center: Alba, Braşov, Covasna, Harghita, Mureş, Sibiu; and Region VIII Bucharest-Ilfov. Almost a third of the companies in the sample are located in the southern region (35%), 17% operate in North-West, whereas 13% have their

headquarters in North-East and the same percentage in Center. The remaining fifth of the total companies are located in South-East, South-West, West, and in Bucharest-Ilfov.

Table 2. Structure of the sample by geographical area

Region	No.	%
I North-East	3	13%
II South-East	1	4%
III South	8	35%
IV South West	1	4%
V West	2	9%
VI North-West	4	17%
VII Center	3	13%
VIII Bucharest-Ilfov	1	4%
TOTAL	**23**	**100%**

Source: Authors' processing.

For each and every company in the sample, the authors analysed the most recent annual financial report published on the official website of the Bucharest Stock Exchange (www.bvb.ro), respectively the package prepared for the year ended 31th of December 2013. Generally, in accordance with the Romanian regulations, the financial report published by listed companies includes the following elements: the financial statements, the administrator's report, the report of the censor, the external auditor's report, the decisions of the general assembly of shareholders, as well as the report prepared in accordance with the Regulation of the Romanian National Securities Commission no. 1/2006.

2. Results and discussion

2.1. Analysis of audit reports issued upon financial statements of selected companies

One of the focuses of the present study is the audit opinion issued upon the most recent financial statements of the companies in the sample. The approach used in *analysing* the audit reports follows a similar path and is consistent with the previous research of Mocanu (2015a), Păunescu (2015), Mocanu (2011) and Țurlea, Ştefănescu and Mocanu (2010). In the particular case of the selected companies, five different situations have been identified, as presented in **Table 3**.

Table 3. Types of audit opinions in the sample

Case	Number
Unmodified opinion (ISA)	7
Modified opinion (ISA)	7
Limited review (ISRS 4400)	1
Annual reporting not submitted	2
Audit report not available	6
TOTAL	**23**

Source: Authors' processing.

The majority of the audits have been performed in accordance with the International Standards on Auditing (ISA), adopted in their entirety by The Chamber of Financial Auditors in Romania (Camera Auditorilor Financiari din România - CAFR). In such a case, the auditors offer a high level of reasonable assurance on the audited financial statements, thus observing the applicable legislative provisions regarding the auditing of public interest entities in Romania. Surprisingly, in one case, the assurance offered by the auditor's report is limited, as the audit was performed in accordance with the International Standard on Related Services ISRS 4400 "Engagements to Perform Agreed-Upon Procedures". Another particular case is that of two companies that did not submit neither the annual reporting, nor the audit report, whereas for six companies, the independent auditor's report was not included in the yearly reporting package, thus being unavailable.

Interesting was also the type of auditors that performed the audit of listed companies operating in the field agriculture, forestry and fishery, as presented in **Table 4**. None of the auditors that were mandated by companies from the three areas of activities belong to the Big Four group. The majority of auditors (73%) are smaller companies, whereas the remaining 27% are individuals.

Table 4. Types of auditors

Auditor type	Number
Non Big Four	11
Big Four	0
Individual	4
TOTAL	**15**

Source: Authors' processing.

Also in connection to the audit report, authors analysed the areas that triggered a modified opinion. Few such triggers are general, e.g. the lack of operations in the reporting year or going concern issues (for a detailed analysis of auditor's accountability in relation to such issues, relevant are the comments of Țurlea and Mocanu, 2010). Related to fixed assets, the audit opinion was modified based on the following reasons: the company did not revaluate its fixed assets; no depreciation has been computed; the recoverability of financial investments is doubtful; there are significant financial investments in a bankrupt related party for which no adjustments have been booked; auditors identified other significant aspects related to: the revaluation of buildings related to an abrogated contract; to buildings, revaluation reserves, depreciation; to land and property.

With respect to inventories, aspects mentioned as basis for a modified audit opinion were: net realizable value of spare parts older than a year; inventory held in custody for third parties; assessment of the production cost of inventory; and net realizable value of consumables. Related to third parties, significant for the auditors were, for instance, the following issues: recoverability of trade receivables and receivables from related parties; invoices to be received; bad debt for which no appropriate adjustment has been booked; and lack of balance confirmations from suppliers. Just in two cases, the problems in cash and cash equivalents triggered a modified opinion.

Another area that was considered to be misstated by the financial auditor was that of incomes and expenses, whereas significant triggers for a modified opinion were: sales and related disposal costs of inventory; turnover and related costs; overstatement of result through the subventions of previous periods; and overstatement of both operational expenses and operational income, without affecting the result.

There have also been cases in which the audit opinion was not modified, and the auditor has just emphasized matters in a separate paragraph, such as: the existence of an ongoing litigation with unknown and unforeseeable resolution; potential difficulties in payment of short term bank loans; accounting treatment of subsidies; and loss from writing-off of bad debt (bankrupt client). Four such situations of emphasis of matter have been identified when analysing the 15 audit reports.

2.2. Assessment of financial performance and stability of selected companies

A second focus of the present research was the analysis of the financial performance and stability of the companies in the sample. The information source is the most recent financial data posted on the Bucharest Stock Exchange site. The key figures of the financial statements of 2013 (for 17 companies) and 2012 (in case of 3 companies) have been included in the analysis, as no other more recent information was available. For 3 out of 23 companies no data was available, therefore this part of the study was performed using a sample of 20 companies. Four key indicators have been computed for each of the 20 companies, as presented in **Table 5**. Each of these indicators has been interpreted according to the following assessment scale (as presented in **Table 6**).

Table 5. Description of performance indicators used in the study

Field of analysis		Indicator	Symbol	Formula
Financial stability	Financing	Equity ratio	I1	Equity/Total capital * 100
	Liquidity	Duration of debt repayment, in years	I2	(Borrowed capital - Cash and cash equivalents) / Cash flow before taxes
Earnings situation	Return	Return on investment	I3	(Current result + Borrowed capital interest)/Total capital * 100
	Result	Cash flow in percentage of turnover	I4	Cash flow before taxes / Turnover * 100

Source: Authors' processing in accordance with Probst J.W. (2008).

Researchers (i.e. Probst (2008) and other authors from the German-speaking literature) have chosen just four main indicators based on their relevance and informational power, having the purpose of providing clarity and simplicity to the research conclusions. First of all, in order to diagnose the financial stability of the companies in the sample, two figures were selected as relevant: the equity ratio and the duration of debt repayment in years. The higher the equity ratio, the better is the financial stability of the company. A negative equity ratio (usually stemming from negative equity) is a sign of exposure to bankruptcy. A very good duration of debt repayment is considered one of less than three years, while durations of more than 12 years is an indicator of poor financial stability.

Second, the earnings situation is described by return on investment and by cash flow in percentage of turnover. A return on investment higher than 12% suggests a good and very good situation, whereas a value of less than 8% or even a negative value signals a serious problem in earnings. A similar interpretation is given to cash flow in percentage of turnover. If the percentage is more than 10%, the analysed company has a very good situation. In case the value is of less than 5%, the result is interpreted as bad. Negative values are generally suggesting a high exposure to bankruptcy.

Table 6. Interpretation key of the four indicators

Symbol	Assessment scale				
	very good (1)	good (2)	middle (3)	bad (4)	exposed to bankruptcy (5)
I1	> 30%	> 20%	>10%	<10%	negative
I2	< 3 years	< 5 years	<12 years	<30 years	>30 years
I3	> 15%	> 12%	> 8%	<8%	negative
I4	>10%	>8%	>5%	<5%	negative

Source: Authors' processing in accordance with Probst J.W. (2008).

Table 7 depicts the results of the performed analysis on the financial performance of the companies in the sample. Based on the data from the financial statements, all four key figures have been computed for each of the companies in the sample. To enable the interpretation, the resulting values for each company and each indicator have been graded with a figure from 1 (very good) to 5 (bankruptcy risk). Table 7 contains the average for each indicator and each activity area, in order to provide an appropriate overview on the entire sample. The highest financial stability is that of companies that carry out support activities for crop production (NACE 161), whereas least stable are the entities that raise poultry (NACE 147). The earnings situation is middle tending to be bad throughout the entire sample of companies. In this respect, companies that carry out support activities for crop production (NACE 161) have the highest performance of all.

Table 7. Financial stability and performance of selected companies

Field of activity	I 1	I 2	I 3	I 4	Financial stability	Earnings situation	Overall result
111	1.50	4.00	4.25	3.00	2.75	3.63	3.19
161	1.00	3.00	3.67	3.00	2.00	3.33	2.67
147	2.75	3.25	4.00	3.25	3.00	3.63	3.31
Other	1.00	4.00	4.50	3.83	2.50	4.17	3.33

Source: Authors' processing.

2.3. Non-financial reporting of selected companies

Important for the current research was also the extent in which selected companies report on non-financial aspects, namely what details on sustainability issues they include in the report prepared in accordance with the Regulation of the Romanian National Securities Commission no. 1/2006. The comments usually have a general and positive character, as depicted in the following excerpts from the reports:

Excerpt 1. "Company's operations have an average impact on the environment, especially due to the use of chemical products (fertilizers, herbicides, insecticides), but these effects can be precluded especially through their rational use and strict oversight of these materials. The company holds all necessary authorizations for legally carrying out their activity."

Excerpt 2. "Company's main activities do not have a significant impact on the environment. The use pesticides for the treatment of farming cultures and the packaging are submitted to the authorized collecting centres. In the wood processing area, they have a system to exhaust the sawdust, which was modernized in the year 2010".

Excerpt 3. "The environmental impact becomes effective especially when processing the seeds (which results into husks and substance losses in the treatment process) or when depositing the treatment substances and the end product. Although the husk is a biodegradable waste, some of the processing equipment of the company has special filters for it. Moreover, the treatment substances are deposited in special rooms, according to the norms in force. Treatment is made with treatment machines deposited in closed rooms, which have aerosol blowers and manipulated by specialized personnel. Depositing the end product is made in warehouses especially arranged for this purpose, which do not leave room for polluting the environment."

Excerpt 4. "The Company has the environmental authorization no. X. There are no uncertainty factors that could affect the environment. The company delineates the management of waste which they periodically submit to specialized units, according to contracts concluded for this purpose. The actions of environmental protection are in compliance with the norms in force, thus insuring a balance between economic development and environmental protection. The personnel is trained and encouraged in having an ecological behaviour in all aspects of life. Monitoring and observing the conditions imposed through the environmental authorizations, as well as implementing the measures imposed by the compliance programs represent ways to act in the spirit of the principles of the internal norms of the company and in accordance with the legislation in force. The company was and is not involved in any litigation regarding the environmental protection and no such litigation is foreseen."

Excerpt 5. "All locations have valid environmental authorizations and the company complies with the legislation in force. The farm from Y has become a model unit at European level which is no longer under special oversight, thus becoming a farm with self-control. The environmental policy is oriented towards observing the norms on environmental issues and work health, towards improving the employees' environmental awareness, which must become a minimal behavioural requirement in the company's culture".

The five excerpts presented above are an exception, offering the highest number of information from all reports investigated. Most often, companies state that they have all necessary authorizations and that they do not have any environmental impact generated by their operations.

2.4. Investigation of the relationships between the financial well-being and the audit opinion, namely extent of non-financial reporting

The following hypotheses have been tested by means of regression analysis, in order to identify the potential relationship between the dependent and independent variables.

H1 There is a significant relationship between the company's financial stability and the type of audit opinion.

H1.1. There is a significant relationship between the company's equity ratio and the type of audit opinion.

H1.2. There is a significant relationship between the company's duration of debt repayment in years and the type of audit opinion.

H2 There is a significant relationship between the company's financial performance and the type of audit opinion.

H2.1. There is a significant relationship between the company's return on investment and the type of audit opinion.

H2.2. There is a significant relationship between the company's cash flow in percentage of turnover and the type of audit opinion.

H3 There is a significant relationship between the company's financial performance and stability and the type of audit opinion.

Table 8. Descriptive statistics for the data analysed in relation to H1, H2 and H3

	Financial stability	Earnings situation	Final result	No. of reserves in the audit report
Average	**2.35**	**3.69**	**3.02**	**1.69**
Maximum	3.50	5.00	4.00	8.00
Minimum	1.00	2.00	1.50	0.00
Range	2.50	3.00	2.50	8.00
Median	2.50	3.50	3.00	0.00
1st Quartile	2.00	3.00	2.50	0.00
3rd Quartile	3.00	5.00	4.00	2.00
Inter-Quartile Range	1.00	2.00	1.50	2.00
Standard deviation	**0.83**	**1.03**	**0.84**	**2.72**
Count	13.00	13.00	13.00	13.00
Standard error	0.23	0.29	0.23	0.75
Skewness	-0.47	0.13	-0.16	1.79
Kurtosis	-1.03	-1.17	-1.13	2.21

Source: Authors' processing.

H4 There is a significant relationship between the company's financial stability and the extent of mandatory non-financial reporting.

H3.1. There is a significant relationship between the company's equity ratio and the extent of mandatory non-financial reporting.

H3.2. There is a significant relationship between the company's duration of debt repayment in years and the extent of mandatory non-financial reporting.

H5 There is a significant relationship between the company's financial performance and the extent of mandatory non-financial reporting.

H4.1. There is a significant relationship between the company's return on investment and the extent of mandatory non-financial reporting.

H4.2. There is a significant relationship between the company's cash flow in percentage of turnover and the extent of mandatory non-financial reporting.

H6 There is a significant relationship between the company's financial performance and stability and extent of mandatory non-financial reporting.

Table 9. Descriptive statistics for the data analysed in relation to H4, H5 and H6

	Financial stability	Earnings situation	Final result	No. of words on non-financial issues
Average	**2.39**	**3.69**	**3.04**	**54.11**
Maximum	3.50	5.00	4.00	145.00
Minimum	1.00	1.00	1.00	0.00
Range	2.50	4.00	3.00	145.00
Median	3.00	3.50	3.25	38.50
1st Quartile	1.63	3.00	2.50	23.00
3rd Quartile	3.00	5.00	4.00	74.75
Inter-Quartile Range	1.38	2.00	1.50	51.75
Standard deviation	**0.92**	**1.20**	**0.97**	**46.15**
Count	18.00	18.00	18.00	18.00
Standard error	0.22	0.28	0.23	10.88
Skewness	-0.60	-0.52	-0.69	0.96
Kurtosis	-1.27	-0.33	-0.61	-0.34

Source: Authors' processing.

The results of the regression analysis show that in case of all hypotheses, the model has no predictive value, as emphasized by the values of the key indicators disclosed in **Table 10**.

Table 10. Results of the regression analysis

	Independent Variable	Dependent Variable	Adjusted R Square	Significance F	P-value intercept
H 1.1	I1 Equity ratio	No. of words on non-financial reporting issues	0.05412728	0.17926442	0.20545918
H 1.2	I2 Duration of debt repayment in years		-0.06154015	0.90575879	0.04959165
H 2.1	I3 Return on investment		-0.00533237	0.35434902	0.04797894
H 2.2	I4 Cash flow in percentage of turnover		-0.02649970	0.46467471	0.01200184
H 3	Overall financial status		-0.05363722	0.71853062	0.09298544
H 4.1	I1 Equity ratio	No. of reserves in the audit report	-0.09083446	0.97860556	0.28689792
H 4.2	I2 Duration of debt repayment in years		-0.06995818	0.65162353	0.70111137
H 4.3	I3 Return on investment		-0.08145581	0.76229062	0.94166309
H 4.4	I4 Cash flow in percentage of turnover		0.05957507	0.21148411	0.05381028
H 5	Overall financial status		0.13794382	0.77356949	0.41840477

Source: Authors' processing.

4. Conclusions

The agri-food industry nowadays faces numerous challenges, among which reducing greenhouse gas emissions; the increasing production to feed a growing world population, and providing feedstock for expanding biofuel production. On this background, the research

focused on companies listed at the Bucharest Stock Exchange which operate in the fields agriculture, forestry and fishery.

The analysis revealed that in terms of financial stability, the situation can be assessed as being "average", whereas in terms of earning, the status of such companies tends to be unfavourable. Some are also exposed to bankruptcy.

Regarding the auditors' opinion on the financial statements of the selected companies, the situation is different: some received a modified opinion, while others benefit from an unmodified opinion.

With reference to the reporting of sustainability issues in the report prepared in accordance with the Regulation of the Romanian National Securities Commission no. 1/2006, such reporting is scarce and not at all detailed. Most companies simply state that they have the operating, sanitary, veterinary and environmental authorizations which are stipulated by law for the activities they carry out; that related to the legal provisions, their operations do not have a significant environmental impact; that no litigations regarding the violation of environmental regulations exist or are foreseen.

The regression analysis did not indicate a significant relationship between firm's financial performance and stability (on one hand) and type of audit opinion/extent of non-financial reporting (on the other hand). Future research shall expand upon other reporting outlets, such as the websites of the selected companies or other reports issued for the shareholders.

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Information security – a new challenge for the young and future financial auditors

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Abstract

The purpose of this paper is to inquire if the young and future financial auditors are fully aware of the impact that information security has on audit missions, focusing also on the responsibilities of the participants in financial audit missions, regarding the assessment of the risks derived from information security. To determine the extent to which audit risk might be influenced by information security, a literature review was conducted, that has focused on this current concern, as expressed by different researchers, professional bodies, Big Four companies and the regulators. In order to assess the current level of awareness regarding the impact of information security on the audit risk, 25 young professionals have participated to a survey and with their answers have proven that they realize the impact of information securing on audit missions and the necessity of having sufficient knowledge regarding information technology in order to identify the risk from the information security area which might affect the financial statements and the activity of the organization. Moreover, young and future financial auditors are aware of the fact that the audit profession will suffer modifications due to the changes in the information technology field, which will affect the approaches in audit missions and in this regards the financial auditors must develop new working skills such as understanding information systems and information security and possessing skills in analysis and data modelling. Besides the survey used, five auditors who work in Big Four companies were interviewed, in order to highlight the way in which the profession is adapting to technological changes, especially in the case of assessing controls of information technology systems and information security. From the results of the interview it can be concluded that within the Big Four companies, there is a high level of awareness regarding the necessity of solid knowledge in the information technology field. The paper is the first to examine the perception of young and future financial auditors from Romania, regarding the impact that the information security has on audit missions.

Keywords: *Financial audit, information security, information technology, lifelong learning.*

JEL Classification: *M41, M42, M15.*

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Introduction

We live and operate in an era which is continuously improving and the change is present in any activity field, especially in the financial and accounting field. Lately, more and more professional bodies such as the Association of Chartered Certified Accountants (ACCA), Institute of Management Accountants (IMA), Institute of Chartered Accountants in England and Wales (ICAEW) and Centre for Audit Quality (CAQ), and also regulatory bodies such as the Securities and Exchange Commission (SEC) have raised the issue of the knowledge that a financial auditor must possess in certain areas of the information technology (IT) field, such as: *big data* concepts, *data mining* analysis (ACCA, 2013), knowledge necessary to analyse and understand information security and the way in which it might affect the activity of a company (ACCA, 2015; ICAEW, 2015).

The impact that the information security has on the objectives and activities of the companies, such as losing confidential data, which might affect the reputation of a company and decrease the level of the investors' trust frequently determines the need for financial auditors to possess solid knowledge in order to understand how the information systems within the organization are working and also how information security in maintained.

Because of the expansion in information technology area, which involves the use of information systems in almost any activity of the companies, it is no longer sufficient for the financial auditors to focus on the financial statements; they must also consider the internal controls of the information systems which might affect the financial information and the activity of the company. It is not enough for the auditors to understand the flows of the information systems, they also have to make sure about the existence of efficient controls which verify the information security (Chorafas, 2008; CAQ, 2014a, b).

According to the Public Company Accounting Oversight Board (PCAOB) Auditing Standard No. 12 (PCAOB, 2010), the external auditor needs to understand both the company's activity and the information systems of the organization, which might be able to affect the accuracy of the financial data or are likely to have a significant impact on the operational activities.

The risk assigned to information systems is a key component, which must be taken into consideration when the audit risk is established. Another important issue is the fact that financial auditors do not have to understand all the information processes within a company, but only those information processes that might affect the financial data or the activity of the company.

Currently there are no clear regulations at national or international level regarding the extent to which financial auditors need to understand the information systems and security. More and more professional bodies and Big Four companies have conducted a series of studies from which it has been proven the necessity for financial auditors to understand information security.

The purpose of this paper is to highlight how this new challenge – the knowledge on information security – is understood by the young and future financial auditors and what is the possible impact on the profession over the next years.

1. Literature review

Recently, the issue of the information security impact on the companies and its importance for financial auditors has been addressed by professional bodies (ACCA, CIMA, ICAEW and CAQ) and regulatory bodies (SEC). The financial accounting field is changing rapidly (Stanciu, 2015) and auditors need to adapt to these changes in the information technology field which might alter the profession, through a continuous improvement of their skills and knowledge.

The continuous improvement of the skills and knowledge of financial auditors is a continuous process in the actual economic context. The process starts from the academic environment that should offer a proper education regarding current practices and must adapt to the current necessities of the business environment (Albu and Toader, 2012).

The changes in the financial audit field were felt more acutely after 2002 when the Sarbanes-Oxley Act introduced new regulations for the profession, claiming that auditors need to possess sufficient knowledge in order to assess correctly the controls of the information systems that might influence the accuracy of financial statements. Moreover, in this current economic environment, it is not enough for auditors to base their training only on the financial accounting field. Both external and internal auditors must have solid knowledge in the information technology field (Chorafas, 2008).

In Romania, the financial and accounting practitioners use information systems in almost any part of their activity and are aware of the necessity to possess sufficient knowledge regarding the IT and communication field, but the current regulations and curricula of the national professional bodies are not yet aligned with the international professional bodies' standards and best practices (Tudor et al., 2013). In this regard, it is expected that in the next years, the Romanian professional bodies from the financial and accounting field will modify the existing *curricula*, by introducing new study programs in the information technology field.

Information security is considered to be a new element with a significant impact on the profession, due to the fact that it highlights new risk areas and, in this regard, the financial auditors must assess both the risks of the information systems and the issues of information security. The 2013 ACCA report, "Digital Darwinism: thriving in the face of technology change", focuses on the need to be aware of the changes that might affect the profession. In 2015, another study from the same professional body emphasises the fact that financial professionals are more aware of the impact that information security has over the companies (ACCA, 2015). By comparing the results of this study with the previous studies between 2012 and 2014, it can be noticed the fact that, globally, financial and accounting professionals are becoming more responsible regarding the changes which might affect their activity.

In 2016, ACCA in collaboration with IMA focused on the impact of cybercrime and the way in which practitioners from the financial accounting field must act, by: making reasonable assessments on the financial impact that security breaches might have over the company, defining a strategy regarding risk, and helping the company to prioritize the security of the most important digital assets against specific attacks. Furthermore, the study presents the specific risks that might occur in the case of a threat that targets the company or the clients' data, having in this instance an increase of the operational and financial risks.

From the research conducted by ACCA and IMA in 2016 it has been concluded that both the auditors and the other practitioners from the financial field understand the need to develop their knowledge in the IT field, considering the possibility that in the future there will be more hybrid jobs within the companies, in which the financial accounting professionals will be able to understand and work efficiently with information systems, being capable of maintaining and verifying the information security. The future of the audit profession is somehow questionable, audit being one of the fields that might disappear because of computerization, while hybrid fields between audit and information technology have a much lower probability to be replaced by the computerized processes (Frey and Osborne, 2013).

ICAEW published in 2013 a report which targets the new type of information security: the cyber security. In line with the ACCA studies, the ICAEW (2013) research highlights the fact that cyber security is no longer the exclusive concern of IT departments, but has become in the last years a frequent issue within the boards of the companies, drawing the attention of the investors, which start to focus more on the aspects and incidents of information security. The study states that, until now, the financial auditors had to focus only on the accuracy of the financial data, but from now on, they also have to focus on the controls for the security of the information, which might have a significant impact on the organizations and on the financial information. In this regard, external auditors will have an extremely important role in offering assurance regarding the management of cyber risk.

The Center for Audit Quality published in 2014 an alert for the CAQ members, after SEC underlined the importance of information security. Thus, CAQ (2014 a, b) emphasized the necessity for financial auditors to understand both information systems and information security, not only of the processes and applications that might affect the financial statements, but also to obtain a general understanding of the IT systems and information security, especially when those are liable to affect the activity of the companies.

Taking into consideration that financial auditors must be capable of keeping pace with the changes in related areas, such as information technology, in the future, it is expected that professional bodies will impose a higher level of education and knowledge for financial auditors in the analysis and information technology field (Byrnes et al., 2012).

Considering all the researches presented, it can be stated the fact that at international level, there is an attempt to make the financial auditors aware of their obligations during audit missions, encouraging them to cross over the limitations of the financial accounting

field, by understanding how different factors, such as information security, might represent a core risk for the audit missions.

2. Research methodology

The purpose of this paper is to highlight if young current and future financial auditors are fully aware of the need to understand and assess information security during audit missions and the impact that the information systems' risk has on the audit risk. Furthermore, we consider to be relevant their perception regarding the mandatory skills that the financial auditors will need to have in the coming years, such as knowledge of *data mining* concepts, information security and analysis and data modelling.

As proven by the ACCA reports (2013, 2015, 2016), at the global level, there is a high degree of awareness regarding the necessity of adapting the knowledge and abilities of financial auditors to the changes from the information technology field. In this regard, the aim of this research is to investigate if in Romania, in the case of young and future financial auditors, the same level of awareness is present.

In the studies conducted by ACCA, the respondents were members of the professional body, which proves the fact that the sample was made up of participants with a high level of knowledge and practical working skills. In order to have a similar level of homogeneity in the current research, the potential respondents have been selected in order to fulfil at least one of the following conditions: to be a member of the Chamber of Financial Auditors of Romania (*Camera Auditorilor Financiari din România* – CAFR) or ACCA, to be an ACCA student or to be enrolled in the CAFR practical training program.

The current research is mixed and based on two investigation techniques: a survey and a semi-structured interview.

The survey included 12 questions and was addressed to young professionals. The majority of the respondents had an average working experience in financial audit of two and a half years. The survey was sent via e-mail to 80 persons from the groups mentioned above. Between March 25, 2016 and April 1, 2016, 25 answers were received , representing 31.25% of the selected sample. In analysing the responses there have been taken into consideration the degree of homogeneity of the community and all the questions were mandatory.

In the survey different types of questions have been used. Five points Likert scale questions (where 1 expresses a low importance/impact and 5 expresses a high importance/impact) were used due to the fact that we considered the answers to this questions to be more relevant at a more detailed level, especially because according to the specialized literature, they are more suitable in the case of perception-based studies. The survey also included single and multiple choice questions for the questions that did not need a high degree of differentiation, and ranking questions.

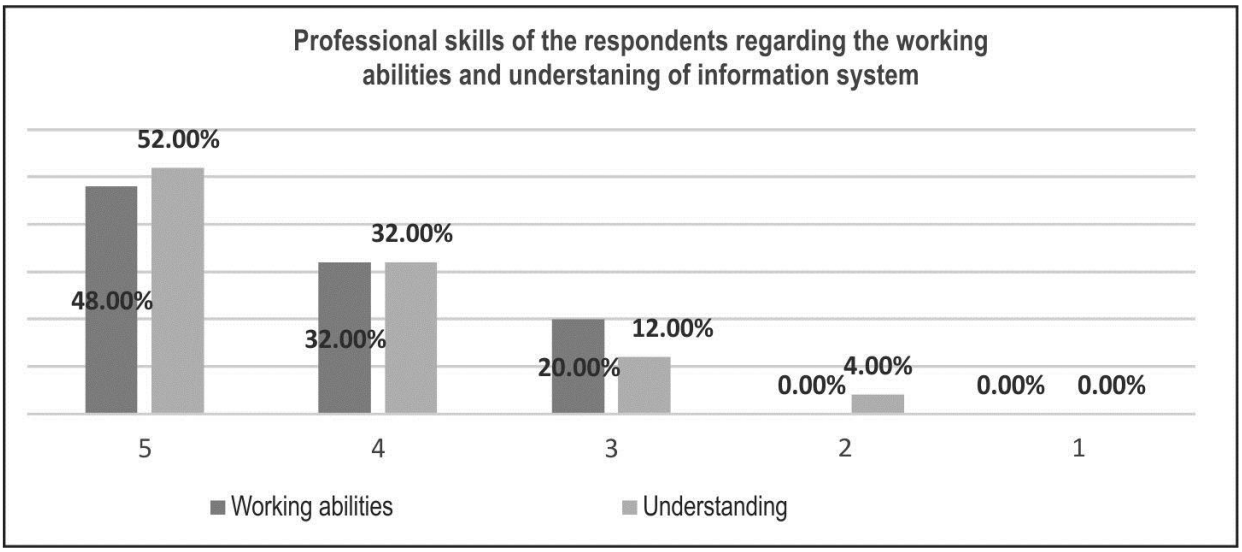
The second investigation method used for the study was the interview with five participants, which were also respondents to the survey, and are working in the audit departments of two of the Big Four companies. The scope of this interview was to assess the working procedures in audit missions of the Big Four companies. The questions focused on the way in which the financial auditors actively participate in checking and assessing the controls of the information systems and security, elements that might affect the financial data.

3. Results and discussions

Of the 25 respondents, 20 are working in the financial audit field and have an average working experience of 2.5 years. 15% of the respondents are CAFR and ACCA members, while 80% are ACCA students. Only one respondent is enrolled in the CAFR practical training program. The rest of the respondents, which are not working in the audit field, are four CAFR trainees and one ACCA student, all in the process of becoming financial auditors.

The respondents have been asked to self-assess their levels of understanding and abilities to work with information systems on a five-points Likert scale (where 1 expresses a low understanding/capacity and 5 expresses a high understanding/capacity). Taking into considerations the responses, the average score of the respondents' evaluation of their abilities was 4.2 points out of the maximum of 5 points and the average score of their evaluations regarding the understanding capacity of the information systems functionality was 4.3 points. With regard to these results, it can be stated that the participants to the survey consider having above average abilities of working with and understanding information systems.

Figure 1. Professional skills



Source: Author's processing

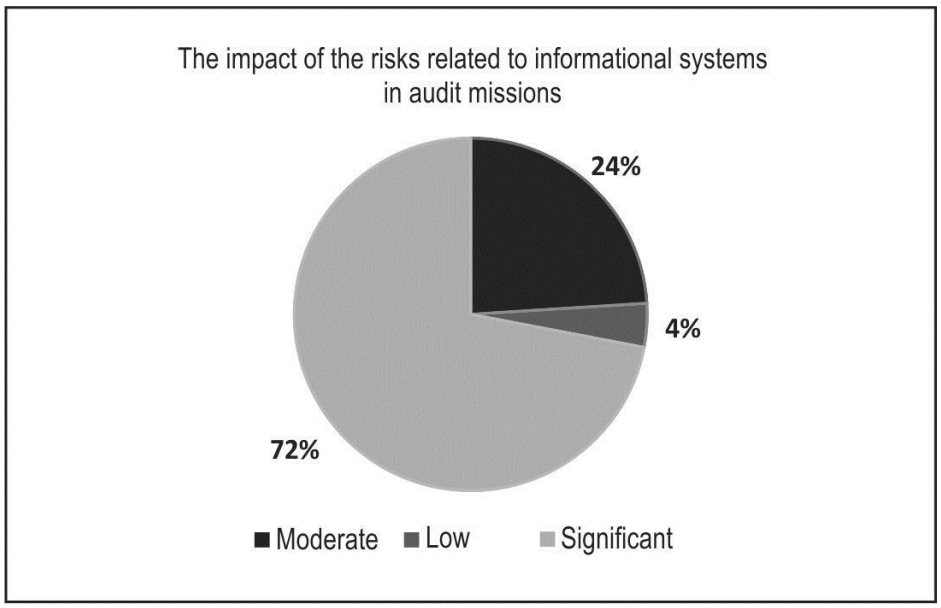
As it can be observed from the above chart, more than 80% of the respondents consider they are possessing above average skills and knowledge regarding the information systems.

In order to check if respondents have the same level of awareness regarding the impact of the IT changes on the profession, the participants have been asked to assess the impact that the information technology progress will have over the auditor's activities. At this question, the respondents were asked to choose one of the following answers: "a significant impact", "a moderate impact" and "a low impact". All the respondents considered the impact to be significant, which underlines the fact that they are aware of the impact of these progresses. Taking into consideration the studies presented above, it can be stated that no only experienced auditors understand the need to adapt to the changes from the IT field, but also the young professionals possess the same level of awareness.

Considering the structure of the sample and the fact that most of the respondents are part of generation Y, always wanting to keep up with the changes in the IT field, it follows that the participants are relying on the professional bodies to enhance their knowledge in the financial audit field. In this regard, we considered it is necessary to highlight the respondents' perceptions regarding the support offered by the professional bodies in the case of the auditors' understanding of their professional responsibilities regarding the informational systems and risks associated with information systems. At this question, only 36% of the respondents considered that the support offered is sufficient in order to understand the necessary skills needed when working with information systems and the potential risks. Meanwhile, 52% agreed with the fact that there is a support from the professional bodies, but it is insufficient, and the rest of 12% considered that there is no support offered. The variation of the answers can be justified by the fact that in the practical training programs for becoming auditor there are no specific modules which focus on the informational systems.

In the research by ACCA, ICAEW and CAQ regarding the changes in the IT field, the risk that derives from informational systems is often a key issue. Consequently, the participants have been asked to quantify the impact of the risks attached to information systems on the audit risk.

Figure 2. The impact of IT risks over financial audit



Source: Author's processing

As it can be observed, the majority of the respondents considers the impact of the risks related to information systems to have a significant influence in audit missions; there are also some variations in their perceptions, which can be explained through practical work experience.

Even though in the actual digitization era no company can be considered too small to be protected against the risk related to information systems, not all the organizations have enough resources and/or do not have a sufficient level of understanding of the need to allocate resources in order to increase the protection against IT risks. The risk associated with information systems has a more significant impact in the case of big companies, which base their operational activities on the information systems, such as financial institutions or *E-commerce* companies. For these companies, the risk related to IT systems and applications might have a significant impact.

Even though the main purpose of the questionnaire was focused on the participants' perception regarding that the current and future information security on the profession, this was not one of the first addressed questions, considering that is more efficient to switch to this key question gradually, having information systems as a general starting point.

Having as milestone the ACCA (2013) report "Digital Darwinism: thriving in the face of technology change" and three out of the ten elements that are liable to alter the financial profession, the respondents have been asked to choose from the following alternatives: "information security", "*big data*" and "*E-commerce*" or "none of the above" the one that could have the greatest impact on the profession. The majority of the participants (48%) considered that information security is more likely to influence the profession and 28% considered *E-commerce* to have a more significant impact, while the rest of 24% of the participants have chosen *big data*. The responses prove the capacity of young financial auditors to cope with the challenges caused by the progress in the IT field.

The rest of the questions from the survey were rating questions using five-points Likert scales. In this regard, we considered appropriate to present a statistical analysis of the results.

The respondents graded the impact that a series of information technology elements whose understanding is essential during audit missions, and other elements which might bring changes to the profession in the next five years, from 1 (less important) to 5 (extremely important).

Table 1. Statistical analysis of the answers provided by the respondents

Question/ Indicator	IT elements – the necessity of understanding them during audit missions			IT elements – the impact of these in audit missions		Necessary skills that the auditors must possess in the future			
	Modules of the financial applications used by the client	The functionality and flow of the applications used	Information security and related controls	Big data working skills	Information security incidents that affect the activity of the companies	The use of *data mining* techniques	The use of support applications for analysis and data modelling	Know-ledge regarding information security	Know-ledge about payment systems
Average	4.52	4.48	4.68	3.92	4.28	4.24	4.68	4.52	4.36
Standard deviation	0.64	0.64	0.61	0.84	0.66	0.81	0.47	0.64	0.79
Minimum	3	3	3	2	3	3	4	3	3
No. of min.	2	2	2	2	3	6	8	2	5
Min. frequency	0.08	0.08	0.08	0.08	0.12	0.24	0.32	0.08	0.20
Maximum	5	5	5	5	5	5	5	5	5
No. of max.	15	14	21	6	10	12	17	15	14
Max. frequency	0.60	0.56	0.84	0.24	0.4	0.48	0.68	0.60	0.56
Median	5	5	5	4	4	4	5	5	5
SKEW	-1.05	-0.90	-1.86	-0.69	-0.41	-0.50	-0.82	-1.05	-0.78

Source: Author's processing

As presented in the specialized literature, during audit missions it is not sufficient to check the accounting and fiscal accuracy of the financial information of a company, but it is also required to understand the way in which financial data is produced. In this regard, the respondents have been asked to assess the importance of understanding the following issues during audit missions: the modules of the financial applications used by the client, the functionality and data flows of the software used and also the information security with the related controls.

As it can be observed in the analysis from **Table 1**, the majority of the respondents consider that during audit missions all the presented elements must be taken into consideration, from the financial accounting applications to the data flows and the information security controls.

With regard to the modules and functionality of financial and accounting information systems and software, it is vital to understand how flows from different modules (such as the acquisitions and sales modules, productions or payments modules etc.) are producing the financial accounting data of the company, through various operational processes. Although many companies use integrated systems which include all the modules, such as ERP applications, is not uncommon the case in which a company uses different applications that are unified through specific flows into another financial application.

If in an ERP application the users do not usually change their privileges of introducing and altering data and the users' access can be easily audited, in the case in which more than one application is being used is mandatory to have similar privileges. For example, if within an information system it can be posted a record only after it has been validated by another user than the one that processed the data for the initial recording, the same level of segregation of duties must be maintained in all the other systems used by the employees, by using controls in the field of information security.

The lack of segregation of duties has a significant impact over the financial data and, in this regard, auditors should not verify only the accuracy of the financial data, but also they need to be sure that the financial information has been validated by the authorized users, maintaining in this way the integrity of the data.

The second five-point Likert scale question addressed to the respondents was focused on their perception about the potential impact of *big data* and the incidents of the information systems on the working procedures. In both cases, most participants considered that the impact is above the average. This fact is in line with the current concerns of big audit companies, which consider that *big data* allows auditors to identify more easily the frauds and the operational risks. Moreover, the incidents associated with information systems do not have to be overlooked during audit missions, even if in most of the cases they are not reported in the databases or operating systems and applications, but only in the internal network where the auditors usually do not have direct access. Due to the fact their impact is significant for some companies, the potential risks associated with information systems incidents must be taken into consideration when establishing the global risk of the company.

At the last question of the survey, the respondents have assessed the skills that an auditor should possess, in the next five years, on a five-point scale, where 1 expresses a low probability and 5 expresses a high probability. The participants have chosen between the following answers: "the use of *data mining* techniques", "the use of support applications for data analysis and modelling", "knowledge regarding information security" and "knowledge about payment systems". The majority of the participants considered there is a high probability that all the above elements will be necessary in the future during audit missions, due to the changes in the information technology field.

The answers received to this question are in line with the profession's and professional bodies' expectations. As it can be observed, the current trend is to develop new hybrid jobs within the companies, which combine the knowledge on financial reporting standards with the knowledge regarding the standards for maintaining information security.

4. Is the information security perceived properly by the financial auditors?

The above analysed survey was focused on theoretical aspects. Therefore, it does not provide the opportunity to understand what the importance of information systems and information security is during audit missions. In this regard, we considered relevant another investigation method: the interview. Some of the participants to the survey, which work in the audit departments of two Big Four companies, have been willing to present the working procedures regarding information systems and security.

It was concluded that in one of the two companies analysed based on the interviews, the members of the financial audit teams are attending IT audit training courses in order to be able to apply audit procedures and to check the controls regarding information systems. The auditors are also receiving training regarding the verification of the information security. In the case of more complex information systems, IT audit specialists are involved in specific audit missions.

In the case of the second analysed company, the members of the audit teams are not using information systems and security procedures, this task being covered exclusively by the members of the IT audit department.

In most of the cases, the changes of the audit profession start in Big Four companies, at national and international level. Therefore, we believe that in, Romania the need to develop the financial auditors' skills in the information technology field is starting to become obvious.

Conclusions

In this technology-based era, the financial auditors continue to develop new analysis and understanding skills of the companies' operational models, being capable, due to the technology, to cover wider areas of analysis during audit missions.

The conclusions of the empirical study conducted highlight that the profession is improving continuously, both in terms of specialization in the financial and accounting fields, but also in important related areas. Another key aspect is the fact that the respondents possess sufficient knowledge regarding the impact of information technology, despite the fact that the majority of the participants are not yet certified financial auditors. This is an effect of the university studies.

This paper aimed to answer the following question: "Are the young professionals working in the financial audit field fully aware of the impact that information security has on the audit missions?" We consider that through the current research we proved that the young and future financial auditors possess sufficient knowledge in the field of IT systems and security, which will be improved over time. Therefore, young professionals display the ability to analyse and assess in an objective manner the impact of information security on the organizations and by default on the audit missions, taking into consideration all the potential threats and risk areas.

The participants have proven their understanding on the fact that the profession is a continuous change and that, in the future, new skills will be required during audit missions, such as: knowing the concepts of information security, abilities of data analysis and modelling and the use of *data mining* techniques. Moreover, after assessing the working procedures regarding the information security and the analysis of the controls regarding the information systems, within the profession the necessity of having sufficient knowledge in the information technology field and practical working skills is obvious. We are taking into consideration the fact that financial auditors are trained in the IT audit and information technology area, as emphasized by the interviews.

We believe that in the near future the profession will suffer modifications due to the necessities of computerizing processes. The activities that do not require professional judgement will be automatized. Meanwhile, the financial auditors will occupy hybrid positions that will be based both on audit and information technology.

Despite the fact that young professionals have sufficient support from the professional bodies, we consider that future and current auditors need more detailed training in the information technology field, during the specialization training, but also after becoming financial auditors, due to the impact that information technology changes have on audit missions.

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Corruption in Romania

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Abstract

Corruption as a phenomenon is of great interest for the society we live in. As there is no unit of measurement to determine the scale of this phenomenon, comparative studies are chosen most often for the areas concerned. The present paper describes a study focused on all counties in Romania, Bucharest included. The purpose of this research is to establish the determinant factors that influence the size and spread of corruption, as it manifests strong negative effects on the society we live in. Thus, using a set of regressions over the main variables, some correlation coefficients have been set, which after processing rendered a ranking of all the 42 analysed territorial units, sorted by the estimated size of corruption. The whole scientific approach was completed with a map of corruption, which synthesizes and presents the corruption spread nationwide.

Keywords: *Corruption, county charts, corruption map, Romania.*

JEL Classification: *C40, D12, O12.*

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Introduction

Corruption is a complex phenomenon that takes place on many levels. It is a phenomenon encountered all over the world nowadays, from the most developed countries, to the poorest ones, having as a common denominator the violation of the "social rules". Unfortunately, corruption has negative long-term effects, which may prove to be even more harmful than a short war.

The literature in the field encloses many studies that focus on the negative effects of corruption, effects that can have a huge impact on the economic potential of a country and, thus, may induce the suffering of the entire population. Graeff and Svendsen (2012) show how corruption significantly decreases resource allocation, thus lowering labour productivity. A similar study by Li and Zahra (2012) shows how corruption in the political area discourages investors of good faith to be active on such a market, where the success of a business is based on its relationships with the governmental representatives and not on the level it answers market requirements. In such a situation, investors do not have an incentive to innovate, or to engage in productive activities, as their only purpose will be to keep as good relations as possible with the state representatives.

Corruption can leave a strong mark on both foreign trade and on attracting foreign investment, which is one of the main "engines" of the economy in the case of Romania. Kaditi (2013) explained that investors from countries with reduced rates of corruption (e.g. Scandinavia), do not make massive investments in countries where corruption is rated at high levels. In support of this theory, Zelekha and Sharabi (2012) show the contagious nature of this phenomenon. Thus, when a state with a high level of corruption has partnerships or economic relations with trading partners in a state far less corrupt, they tend to corrupt trading partners, thereby at least two national economies being affected. Preda (2015) has the same approach on corruption, pointing out that corruption affects the state both economically and functionally, by altering its morphological structure and creating a general feeling of instability that may extend easily into the neighbouring countries, especially to the trade partners with which the corrupted country has stronger economic relations. According to Dang (2009), the economic dimension of corruption can be seen as a hidden tax which contributes to the investor's costs and creates a climate of uncertainty over his entrepreneurial activity. This happens because this "tax" is not predictable, and at any moment it can turn a profitable economic entity into a bankrupt one. For these reasons, one of the determinants of a favourable business environment is the ability to interact with representatives of the state, without having to conduct "informal payments" (Krkoska and Robeck, 2008).

According to Marinescu and Jora (2013), corruption may have at least two dimensions. The first is defensive corruption, which is a reflex to protect citizens against the attempts of the civil servants, which use the levers of political power in order to try to steal some of their legitimate property. Specifically, the citizens resort to various workarounds beyond the border of legality, to pay less to the state. The second dimension is the offensive corruption, which involves "buying" senior civil servants to obtain various benefits. Diaconu (2012) discusses the corruption risk management, which involves a process that identifies institutional and individual factors that may favour the development of corruption. Corruption risk management also involves the development of some measures designed to prevent or eliminate the likelihood of corruption in a given area. In the vision of Beşliu (2015), the large number of interdependencies between countries of the world and the race for economic and political supremacy, as well as the purpose of more and more countries to get richer as soon as possible, tend to generalize. In this context it is almost mandatory to follow the size and development potential of corruption.

1. Research methodology

This research is motivated by the heterogeneous nature of economic development in different regions of Romania. It is known that the capital area formed a pole of economic development. Even if the Western area of the country has managed to maintain a reasonable level of economic development, in Moldavia, with few exceptions, the economic situation is precarious. Thus, it was followed if corruption presents a dispersion which may prove similar to the level of development of different areas of the country. For this purpose, information was collected about each of the 41 counties, Bucharest being also added, even if the capital involves certain specific features. To sum up, there are 42 territorial units that will be subject to detailed analysis in order to accurately determine the size and spread of corruption in each area. The main variable employed for this endeavour is the share of the corrupt people in the population total, information which was provided by the Academic Society of Romania and *Romaniacurata.ro*, which disclosed to all the interested people information concerning the activity of the National Anticorruption

Department. Thus, for each county, including Bucharest, the percentage of people who have been convicted for corruption (divided by 10,000 residents) was assessed. This variable was be correlated with other four independent variables:

- The *average net salary* for 2014, which due to the large variations between counties was expressed as a percentage relating to the national average wage for 2014;
- The *share of people with higher education* in the total population, analysed for each territorial unit in 2014;
- The *share of European funds absorbed* by each territorial unit under review, in 2014;
- The *average number of years* spent in prison by a person convicted of corruption.

As further sources of information there were also used the *gandul.info* databases and analyses, and a set of databases provided by the National Institute of Statistics. In order to determine the influence of each independent variable on the percentage of persons who have been convicted for corruption, four regressions were be run using the software application Excel (Microsoft Office) and based on the recorded values of *R-square*, it was be possible to determine the value of the correlation coefficients, which was applied to a previously built database.

Based on the results, each territorial unit under review was assigned a score, and, based on the score, a ranking was drawn up. The counties in first third of the ranking were be included in zone A, which means a reduced level of corruption rates; the second third was be included in Area B, which involves an average level of corruption; the rest of the counties with the lowest scores were included in zone C, where the corruption is present at the highest rates.

After establishing these areas, we proceeded to drafting a map that represents the entire scientific endeavour merged. The preparation of a map was chosen, so as information can be understood and interpreted even by people without economic studies.

This study involves combining variables representing three dimensions:

- the *average salary* and *European funds* variables represent the *economic dimension*,
- the *number of people with higher education* is the *educational dimension*, and
- the *average sentence* variable can be included in a *social dimension*.

2. Results and discussions

Following the collection, structuring and processing of information for each analysed variable, a database was obtained and synthesized in **Table 1**:

Table 1. The Database – Data for the 41 Counties and the city of Bucharest

County	Percentage corrupted persons	Average wage (%)	Persons who graduated a college (%)	European funds (%)	Average punishment (months)
Alba	1.05	83.37	11.24	0.99	30
Arad	1.51	89.22	16.6	0.7	34.34
Argeş	2.43	104.16	12.53	3.51	33.5
Bacău	3.21	84.16	12.75	3	25.83
Bihor	1.06	71.87	11.83	12.9	34.64
Bistrița-Năsăud	0.31	76.02	9.05	0.79	35.11
Botoşani	0.27	76.93	6.35	1.14	36.18
Braşov	1.04	94.28	16.35	1.63	37.46
Brăila	0.78	79.88	9.56	0.9	29.52
Bucureşti	4.71	146.08	28.72	5.48	32.61
Buzău	0.53	82.29	8.34	0.15	38.25
Caraş-Severin	2.57	77.71	9.71	3.82	23.46
Călăraşi	0.95	79.82	6.3	1.45	34.66
Cluj	1.3	106.93	17.16	7.7	30.83

County	Percentage corrupted persons	Average wage (%)	Persons who graduated a college (%)	European funds (%)	Average punishment (months)
Constanța	1.58	93.8	14.69	3.26	40.1
Covasna	0.86	74.76	8.59	2.42	30.56
Dâmbovița	0.81	89.4	8.51	2.26	37.48
Dolj	1.29	93.8	12.71	0.12	33.24
Galați	1.03	90.54	10.45	0.19	41.57
Giurgiu	2.56	84.28	6.23	1.46	31.21
Gorj	1.7	101.51	11.29	0.44	40.86
Harghita	0.55	68.8	8.54	1.52	31.12
Hunedoara	0.53	83.01	11.97	1.39	34.77
Ialomița	1.24	78.61	7.34	0.98	32.82
Iaşi	0.83	95.36	12.29	7.69	36.81
Ilfov	1.67	124.16	14.42	1.61	44.09
Maramureş	3.36	74.1	10.37	3.01	15.01
Mehedinți	0.23	86.87	9.72	1.27	38
Mureş	0.73	87.89	10.3	1.88	24.4
Neamț	1.51	75.66	8.59	0.71	25.49
Olt	0.53	87.17	8.25	0.26	39.74
Prahova	1.3	100.12	12.07	9.58	31.99
Satu Mare	1.68	81.14	8.73	0.11	35.34
Sălaj	0.09	77.11	9.31	0.99	30
Sibiu	0.55	99.82	13.38	2.99	34.86
Suceava	0.57	79.46	7.97	2.34	22.69
Teleorman	0.26	78.67	6.81	0.01	37.8
Timiş	1.29	108.8	17	0.18	38.63
Tulcea	0.89	87.11	8.32	2.66	30.11
Vaslui	0.66	74.28	6.46	0.74	24.54
Vâlcea	1.35	80.66	10.54	4.25	35.66
Vrancea	1.15	75.9	8.32	1.52	27.59

Source: Authors' processing based on the data retrieved from *www.romaniacurata.ro* and *www.gandul.info*

After running the regression statistical functions for each independent variable, we obtained four outputs which were summarized in **Table 2**. In order to differentiate the values of each variable, they were noted as follows:

- 1 – the *medium salary* variable,
- 2 – the *highly educated people* variable,
- 3 – the *European funds* variable,
- 4 – the *average sentence* variable.

As shown in **Table 2**, the *highly educated people* variable displays the strongest correlation with the size of corruption. A very good value is also recorded by the variable *average wage*, while the lowest correlation in our study lies for the *EU funds* variable. A first conclusion shows that the *highly educated people* variable can play a major role in sizing corruption. After processing the database depicted in **Table 1**, the following ranking resulted, as synthesized in **Table 3**.

Table 2. Correlation coefficients for the four independent variables

Regression Statistics 1		*Regression Statistics 2*	
Multiple R	0,473006637	Multiple R	0,548305008
R Square	0,223735279	R Square	0,300638382
Adjusted R Square	0,204328661	Adjusted R Square	0,283154342
Standard Error	0,834797932	Standard Error	0,792368746
Observations	42	Observations	42
Regression Statistics 3		*Regression Statistics 4*	
Multiple R	0,229496189	Multiple R	0,286993622
R Square	0,052668501	R Square	0,082365339
Adjusted R Square	0,028985213	Adjusted R Square	0,059424473
Standard Error	0,922204907	Standard Error	0,90763523
Observations	42	Observations	42

Source: Ms. Excel processing by the author

Table 3. County ranking based on the estimated level of corruption

County (Zone A)	Score	County (Zone B)	Score	County (Zone C)	Score
Bucureşti	44.2834	Dâmbovița	25.7604	Teleorman	22.757
Ilfov	35.8225	Mehedinți	25.5489	Călăraşi	22.6783
Timiş	32.6375	Olt	25.2642	Bistrița-Năsăud	22.6572
Cluj	32.0209	Hunedoara	25.1022	Sălaj	22.5692
Argeş	30.0088	Bacău	24.9429	Ialomița	22.5441
Gorj	29.4875	Mureş	24.8642	Caraş-Severin	22.4342
Sibiu	29.378	Tulcea	24.6055	Suceava	22.1615
Braşov	29.1739	Alba	24.5497	Botoşani	22.1556
Prahova	29.1618	Vâlcea	24.3703	Covasna	21.9483
Constanța	28.8706	Buzău	24.0711	Vrancea	21.8304
Iaşi	28.4604	Satu Mare	23.6895	Neamț	21.6425
Arad	27.8115	Giurgiu	23.3716	Maramureş	21.087
Dolj	27.5457	Brăila	23.2197	Vaslui	20.6169
Galați	26.8263	Bihor	23.1628	Harghita	20.5988

Source: Authors' processing

Bucharest stands the first, having the lowest level of corruption, based on its size. Another barometer supporting this claim might be the greater volume of investors choosing the capital over other areas of the country. Although the general perception of the corruption level in Bucharest is not consistent with the results of the current research, the explanation may come from the fact that the losses due to corruption are much higher than in any other county, which attracts media attention, the corruption cases in Bucharest getting a lot of publicity. Corruption is a very complex phenomenon that cannot be assessed solely through an economic perspective.

Corruption also entails a social dimension, behaviour of the masses, which can be influenced or shaped by various factors, such as television, newspapers etc. The strongest variable in this study was the amount of *highly educated people*, which in Bucharest is at the highest level (28.72%), while Vaslui County, which is the penultimate position in the corruption ranking, also lies last on the share of highly educated people (6.46%). Vaslui also recorded very low scores for the *average*

wage, which represents only 74.28% of the national average wage. The variable that refers to attracting *European funds* does not have a great impact on the scale of corruption, however Vaslui draws only 0.74% of the total absorbed EU funds at national level in 2014. A county comparable to Vaslui as the population number is Sibiu, which manages to attract over 4 times more European funds than Vaslui County. Sibiu also has twice as many highly educated people, as compared to Vaslui.

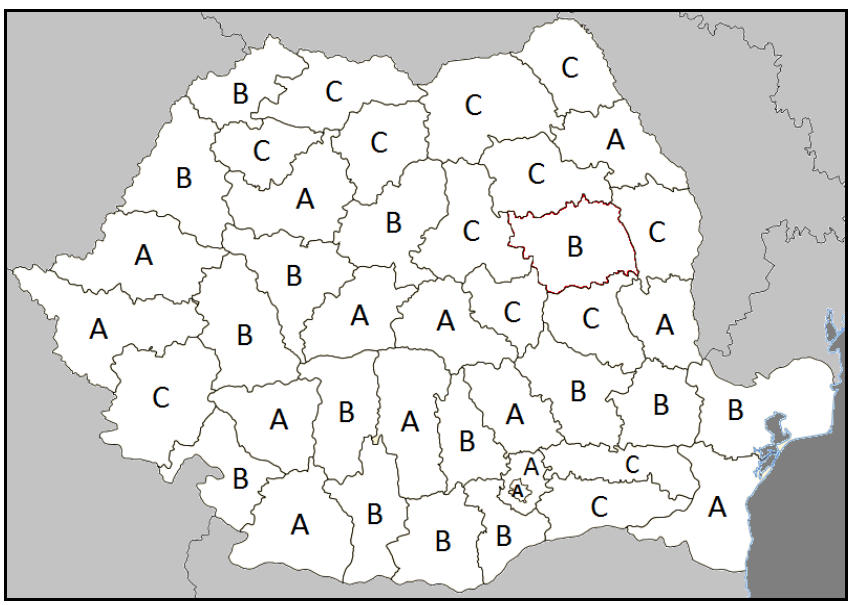
From the study results, it may be concluded that in Romania corruption is closely linked to the education level. Romanians do not seem to realize the catastrophic effects of this phenomenon, which makes or country quite vulnerable, from the economic point of view. Analysing the counties in zone A, we find that the maximum interval, the one between the score of Ilfov (35.8225) and Galați (26.8263) is almost nine points (8.9962), while for the zones B and C, the amplitude is less than two points. This means that the areas B and C do not have very high volatility in terms of differences for the estimated level of corruption, between the first and the last county, as recorded in area A, between the district of Ilfov and Galați County.

Except from Bucharest, which presents certain peculiarities, we find that the average score for the zone A is 29.7850 points, compared to 24.4659 as it is in zone B, or 21.9772 as is recorded in zone C. When making a ranking of the first three counties in Romania, it includes Ilfov, Timiş and Cluj. It appears that Ilfov County is detached from counties in positions two and three by more than three points, while the difference between Timiş and Cluj score is under 0.7 points. Score difference between the last county in zone A (Galati) and the first county in zone B (Dâmbovița) is insignificant.

The amplitude of zone B is 2.5976 points, that is the difference between Dâmbovița County score (25.7604) and Bihor County score (23.1628). Zone B variations in the score are significantly lower than in zone A for both variations of the score between the first and second position and for the last two counties at the end of the chart.

The last three positions belong to Maramureş (21.6169), Vaslui (20.59880) and Harghita (20.5988). The amplitude of zone C is 2.1582 points, resulting from the difference between the score of Teleorman County (22.757) and Harghita County (20.5988). The maximum amplitude level among the 41 counties is 15.2237 points, and if we include Bucharest, the maximum amplitude reaches 23.6846 points. The average score across all counties is 25.3026 points and after the inclusion of Bucharest, the average score reaches 25.7545 points. Following this analysis, data were summarized and presented in the form of a map, as shown in **Figure 1**.

Figure 1. The map of corruption, by county



Source: Authors' processing, 2016

As depicted in **Figure 1**, the counties of zone A are the richest in Romania. All major regions of the country (Muntenia, Transylvania and Moldova) are included in zone B and zone C mainly encloses counties in Moldova, with a few exceptions from Transylvania and Muntenia.

Conclusions

One of the main influence factors for the size of corruption is the level of highly educated people in the total population. In Moldova, with a few exceptions, the share of people with higher education is below the national average.

Another factor of influence is the average level of the salary, for each of the analysed counties. Unfortunately, lowest values are recorded in the counties having fairly high levels of corruption. Thus, for counties like Harghita, Vaslui, Neamț, Covasna the average salary is about 25% lower than the national average.

The economic component can be held responsible for the size of corruption in Romania, which brings many disadvantages internationally. The fact that many people do not realize the negative effects of corruption may be due to an under-financing of the education system and also to the lack of interest from senior government officials to inform the population.

Poverty in the least developed counties may represent a favourable environment for increased probability of manifesting a more pronounced tolerable behaviour to corruption.

The variable that refers to the share of European funds absorbed by each county aimed to assess the interest of local authorities to bring more wealth among the population through investments that could raise living standards and indirectly create prerequisites of a corruption phenomenon located at lower rates. On the other hand, attracting European funds requires a higher degree of transparency in the allocation of funds to various destinations, which could encourage justice institutions' efforts to reduce the size of corruption.

Another variable in determining the size of corruption is the length of the sentence for corruption charges. The average duration for which a person is convicted for corruption charge is 32.92 months, very close to the value recorded for Bucharest, which is 32.61 months. In other words, a person who commits acts of corruption and is sentenced will be released, on average, in less than 3 years, without considering early release (for good behaviour, written books, various health problems, old age etc.). In zone A, the average length of detention is 36.49 months, in zone B, the average length of detention is 33.21 months, and in the zone C, the average length of detention is 29.07 months.

An equally alarming situation is found in the case of the EU funds absorption. Counties in zone C barely manage to attract 21.44% of the total European funds absorption in 2014. In the counties from zone B, the situation is more balanced in the sense that they attract 33.48% of the total European funds. It is very surprising that almost half (45.08%) of the European funds absorption by Romania in 2014 are targeted only to the 14 territorial units of zone A.

In a future research we intend to perform a detailed analysis, focused on the economic potential and the standard of living in each county (GDP/capita, index of prices growth, purchasing power, etc.). The results will be compared to the estimation of the size of corruption in the current research.

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