

HOW BIG ARE 'BIG FOUR' COMPANIES – EVIDENCE FROM ROMANIA

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ABSTRACT. The audit market is divided between two main categories of auditors: Big Four auditors and Non Big Four auditors. The general accepted opinion is that the former cover most audit services. The objective of the study is to quantify the share covered by Big Four auditors at the level of Romanian market. In this respect one collected and processed data obtained from the audited companies from the North-West Region of Romania which is considered representative for extrapolating the results at national level. After processing the data there were established 14 parameters that characterize the activity of financial auditors divided in three categories: Big Four auditors, Non Big Four auditors and professionals in the audit field which operate within their individual offices. In order to establish the market share for each category of auditors one took into consideration all analyzed parameters. This objective was achieved by applying a specific method of quantitative competitive analysis: the comparison matrix method. The findings show that Big Four auditors have a significant market share, without covering a majority share. The study allows us to establish a profile of the beneficiaries of audit services for each category of auditors.

Key words: *Big Four companies, financial audit, corporate governance, foreign investments, market share*

JEL classification: M42, M41, M48

1. Introduction

The audit market actors are on one hand the beneficiaries of such services (the companies whose financial statements are audited)

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and on the other hand the providers (individual and legal financial auditors). In general, the evolution of the audit market is closely linked to the economic forecasts at national level and in particular, to the development prospects, new investments made by the beneficiaries of audit services. At the same time, regardless of the business' prospects, every company needs its annual financial statements reviewed, activity which can be performed by a financial auditor. The following checks shall conduct to an independent opinion which will or will not support the idea that financial statements have been prepared in accordance with the applicable accounting rules (Romanian legislation or international standards of financial reporting). These checks are very important for the users of financial information: investors, managers, creditors and public institutions (Rachisan and Grosanu, 2010). Depending on the outcome of these checks (the opinion expressed by the financial auditor) one can make important decisions about investment or disinvestment, about changing or maintaining the management team. When referring to audit services providers, small companies are much more dynamic than large companies, the number of small audit providers widely ranging from year to year. If this dynamics is growing, it can be expected to adversely affect the market share of the big audit companies. The study divides auditors in three auditors: Big Four auditors, Non Big Four auditors and authorized individuals who practice within individual audit offices.

The objective of the present study is the substantiation of a methodology for measuring the market share held by the Big Four auditors at national level. This methodology involves the selection and subsequently processing of certain particularities of audited companies that could be able to determine their orientation towards a category of auditors or another. These particularities of the beneficiaries of audit services relate to: social capital structure, management team structure, frequency in changing the social capital structure, legal form of organization, field of activity, territorial dispersion, average length of the audit contract, level of social capital, value of turnover, of net result and average number of employees. This methodology is able to provide a relevant typology of services users upon which the big international audit companies orient their audit activity.

From the main objective of the study derive some side consequences with positive effects for contracting services by the audit companies. Firstly, one creates the premises for systematizing for each

category of auditors the strengths that can be found in the potential beneficiaries within an economy, from which they can benefit in order to increase their market share. This allows the international auditors to establish a set of parameters to analyze when they decide to focus their activity on one country or another. Secondly, the research methodology used will establish an ideal profile of the companies towards which each category of auditors focuses. This can provide more efficiency and effectiveness, by targeting optimal contracting efforts by auditors. Thirdly, by extension to national level, the result of the study allows Big Four companies to fundament their investment or disinvestment decision in a particular country, based on assessing the existence or lack of a favorable climate for business expansion, according to the profile of companies in that country.

The study includes a review of the macroeconomic and microeconomic aspects mentioned in literature as being defining for orientating beneficiaries of audit services towards Big Four or Non Big Four auditors. Authors consider these aspects critical for sharing the audit market between the two categories of financial auditors. The section *Material and methods* covers the competitive analysis method used for processing the data: the comparison matrix method and the manner in which the sampling of audited entities was chosen, explaining at the same time its representativeness in order to extrapolate the results at national level. The section *Results and Discussions* presents a ranking of the three categories of auditors by aggregating the values of the 14 parameters taken into consideration for characterizing the beneficiaries of audit services, and the *Conclusions* section includes an estimation of the market share held by each company based on the accumulated scores. In this section some of the profile features of the company audited by each category of auditors are being outlined.

2. Literature Review

The studies that approach the relationship between audit beneficiaries and auditors refer to a fairly large variety of factors that are able to substantiate the option of audited companies to contract audit services from one category of auditors or another. The companies that prepare financial statements in accordance with the international accounting regulations will mainly focus on Big Four auditors, therefore

they will facilitate the expansion of Big Four auditors. Therefore, **the adoption of the international financial and accounting regulations at national level** is a factors able to create the premises for the access of Big Four companies to audit services (Tsipouridou and Spathis, 2012; Hodgdon et al., 2009). The high level of complexity of these international accounting standards compared to some national legal frameworks is able to increase the time allocated to the development of an audit operation (Habib and Bhuiyan, 2011). On the other hand, there are also advantages of providing an unitary basis for preparing the financial statements: one can have the opportunity to compare the auditors' reports (Big Four or not) at international level.

The high percentage of **large companies and high performance at the level of a national economy** is a factor able to support business expansion for Big Four auditors. An economy with profitable companies that can afford high fees will help the Big Four companies (Francis, 1984). However, the monopolization of the market share by the Big Four auditors also depends on a certain evolution of particular indicators linked to the level of dividends, debts, revenue, working capital or taxes (Walace, 1998). Complementary, in addition to the fact that these profitable companies are mainly orienting towards Big Four auditors, they are associated and with a more rapid completion of audit activity (Abidin et al., 2012; Alkhatib and Marji, 2012).

The tendency of companies to resort to the services of Big Four auditors depends directly proportional to the competence and performance of governance systems (Houqe et al., 2012). The countries with transparent governmental policies where the international standards of financial reporting are adopted create favorable premises for selecting the audit services provided by the Big Four auditors. Other authors argue the opposite, how the supervision of financial statements by the Big Four auditors is due precisely to the reduced confidence in public institutions and governance mechanisms, and reaching for the Big Four auditors aims to give investors a boost of confidence in these circumstances (Srinidhi, 2009). In addition, the weaknesses of national legal systems induce to constraints from the audited companies, defined by the increase of exigency when performing audits (Kwon et al., 2007; Ettredge et al., 2009).

Some academic studies (Wang and Xin, 2011; Chung, et al., 2003; Francis et al., 1999; Becker et al., 1998) indicate that some companies that record **lower levels of discretionary accruals** manifest a

predominance in contracting services of audit for their financial statements from Big Four auditors, and others indicate that this detail is not necessarily able to generate changes in the market share for a particular category of auditors in favor of others (Jeong and Rho, 2004).

Big Four auditors are notorious for predominantly auditing companies that report **internal control weaknesses** (Ge and McVay, 2005), other studies find an opposite, negative but insignificant relationship between the Big Four companies and the internal control impairments (Krishnan and Visvanathan, 2007).

The quality of audit services rendered and the frequency of quality control of the work performed by the auditors conducted by professional institutions is a factor able to influence the orientation of the audit services beneficiaries towards Big Four or Non Big Four auditors. Non Big Four audit companies treat their important clients more strictly, which in some circumstances may generate an increase of their market share (Hunt and Lulseged, 2007). The change in market share in favor of one category of auditors or another starting from the quality of the provided audit services can be measured (Carcello et al., 2011). There are studies that verify the evolution of audit market after the quality controls performed by the accredited professional institutions to the audit services provided, in connection with which auditors performing poor audit work are pressured to leave the market (DeFond and Lennox, 2011; Lennox and Pittman, 2010). Moreover, the quality of audit services and the financial scandals in which some large companies have been involved had as a consequence the decrease of market share for these companies (Boone et al., 2010).

The influence of the selection process of the auditor can be carried out also by the activity field in which the beneficiary of audit services operates (Craswel et al., 1995). A company that operates in the production (manufacturing) sector will have a more complex activity, which will generate a higher volume of specialized knowledge and work. An economy where the **share held by the production sector at national level is high** will be a market much more easily monopolized by Big Four auditors.

The audit fees charged by Big Four auditors, contrary to expectations, do not necessarily lead to a decrease in their market share, if this can be justified by the high complexity of the audit that requires international expertise of certain employees of Big Four Auditors (Carson,

2009). According to published studies, the increase of audit fees for these reasons (audits in accordance with International Standards on Auditing, need for knowledge on international capital markets or corporate governance) can vary between 16% and 228% (Wang and Iqbal, 2009; Carson and Fargher, 2007; Basioudis and Francis, 2007; Fergusson et al., 2006; Francis et al., 2005; Ferguson et al., 2003; DeFond et al., 2000).

The level of financing the audited companies through the capital market is a defining factor in terms of choosing a Big Four auditor. The countries where companies are significantly financed through the capital market provide a high level of legislative protection of shareholders. They have real opportunities to sue auditors for negligence or other professional errors. These are the countries where Big Four companies have a favorable environment to expand their business in terms of auditing services (Francis and Krishnan, 1999).

The expansion of activity of the Big Four auditors in terms of auditing services is related to the **level of foreign investments in a country**. A high level of foreign investments in a country can be a determinant factor in contracting audit services from Big Four companies (Citron and Manalis, 2001) or more determining in others' opinion (Guedhami et al., 2009). Foreign shareholders prefer to hire Big Four auditors as the audited company has more credibility in the eyes of current and potential international investors. The change of the auditor by foreign shareholders in order to increase the credibility of financial statements is made more frequently in favor of Non Big Four companies (Tu, 2012).

A performing structure of corporate governance within audited companies will ensure the premises for large audit companies to gain ground (Rizzotti and Greco, 2013; Lin and Liu, 2009). The companies with a poor corporate governance structure (reduced size of the supervisory board or the function of CEO and chairman of board of directors is held by the same person) will tend to choose a smaller auditor or of inferior quality in order to easily influence the auditor's opinion due to the functions' incompatibility (suspicious gains).

The frequency of restructuring the activity of audited companies is an element able to influence the choice for a certain category of auditors. Corporate takeovers can have an influence on the dimension of the selected auditor, especially when the business specific of the absorbent company is different of that of the absorbed company

(Firth, 1999). It seems that in this context the studies reveal that Non Big Four auditors can more likely provide expert advice for merger transactions (Louis, 2005).

The level of national culture is decisive for selecting or not a financial auditor from the Big Four (Jenkins and Velury, 2011; Hope et al., 2008). The companies where the organizational culture requires a lower opening to the public and are more conservative (less financed through the capital market) will prefer less a Big Four auditor and vice versa, internationalization being the only one able to mitigate these effects. Also, conservative companies audited by Big Four companies are more operational in terms of reporting negative events (Jenkins et al., 2007).

Therefore, the literature focuses on the following factors which are decisive for the increase or decrease in market share of audit companies as shown in figure no.1:



Figure 1. Determinant factors for the increase of market share of audit companies approached by literature

Source: Processing performed by authors

3. Material and methods

The methodology of the study is specific to the quantitative competitive analysis and it involves obtaining a score, and thus achieve a ranking of companies included in the study, starting from the indicators considered representative for the final ranking. One such method

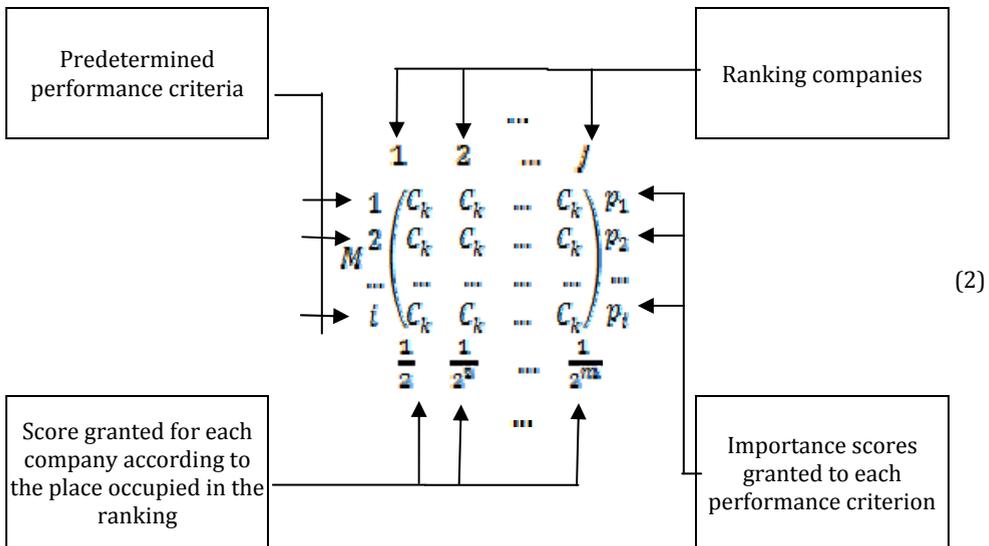
frequently presented in the literature is the comparison matrix method (Achim, 2009). The usefulness of this method results from the fact that it allows taking into consideration in an aggregate manner of a large number of features of the analyzed companies in order to establish the final score achieved by each analyzed company.

The general conditions of applying the quantitative method of comparative matrix involves the evaluation of company performances using a matrix where the lines (i) represent the selected performance criteria, and the columns (j) represent the places occupied by the companies in the ranking according to the criterion i. The ranking based on criteria is made according to the optimization manner of each criterion. Certain performance criteria are optimized by maximization (the best value is the highest value), and others are optimized by minimization (the best value is the lowest value).

For the general construction of the matrix, for each place of the hierarchy one assigns a calculated score in a descending order as it follows:

$$I_j \in \left\{ \frac{1}{2}, \frac{1}{2^2}, \frac{1}{2^3}, \dots, \frac{1}{2^m} \right\}, j = \overline{1, m} \quad \text{Where:} \quad m - \text{number of companies included in the study (coinciding with the number of places in the ranking).} \quad (1)$$

Building the corresponding comparison matrix M is made as it follows:



In these conditions the matrix construction can be accomplished in two ways:

- if one does not take into account the economic signification of each initially selected performance criterion (statistical approach).

In this case the score accumulated by each company is calculated as a weighted sum of the number of occurrences in a certain place (j), for each of the companies included in the study (k) and the score granted to that place in the ranking (I_j), as it follows:

Where:

$$Ms(k) = \sum_{j=1}^m I_j \times \left(\sum_{i=1}^n nij(k) \right) \quad (3)$$

- $Ms(k)$ - the calculated value incorporating the performance of company k ;
- I_j - the accumulated score for the place j from the ranking;
- $nij(k)$ - the score corresponding to the occurrence of each company k , on each of the j places, according to each criterion of performance i .

- if one takes into account the economic signification of each initially selected performance criterion (economic approach):

Where:

$$Me(k) = \sum_{j=1}^m I_j \times \left(\sum_{i=1}^n nij(k) \times pi \right) \quad (4)$$

- $Me(k)$ - the calculated value incorporating the performances of company k ;
- pi - the predetermined economic importance share for each performance criterion i .

This second approach involves a resort to professional judgment to determine an order of the economic importance of each criterion and based on this situation to grant a corresponding score for each level of importance (Achim, 2009). This means that a performance criterion that is appreciated to be able to strongly determine changes of market share for the financial auditors will generally receive a higher score.

The company that accumulates the highest score will occupy the highest place in the ranking; therefore the ranking will be in reverse order of the calculated indicator values. The current study aims to design a methodology to establish a ranking regarding the market share held in Romania by three categories of audit entities: Big Four companies, Non Big Four companies and auditors authorized individuals. Particularizing, there will be three places in the ranking. Therefore, the study is proposing an inductive research method consisting in starting from practical data in order to create theoretical models (Topor et al., 2012).

To apply the methodology one resorted to the stratified sampling method used in literature to test a hypothesis or to verify a statistical model (Cuzdriorean et al., 2010). We selected the companies audited at the level of the North-West Region of Romania. That certain region is representative for the Romanian economy according to the data published by the National Forecasts Commission from June 2013 concerning the projection of the main economic and social indicators in territorial profile by 2016. One estimate that the regional indicators calculated for the North-West area will have a regional average level close to the national average, and the evolution will be in tune with the national average in the period 2013-2014, as shown in table 1:

Table 1.

Positioning of the North-West Region in the national context according to the forecast made for the period 2013-2016

<i>No. crt.</i>	<i>Analyzed economic indicators</i>			<i>Forecasted evolution of indicators</i>			
	<i>Indicator denomination</i>	<i>M.U.</i>	<i>Coverage area</i>	<i>2013</i>	<i>2014</i>	<i>2015</i>	<i>2016</i>
1	Gross domestic product - disparity indices North-West region/ National level (optimal value 100%)	%	North-West Region	84	84	84	84
2	Monthly net average wage - disparity indices North-West Region/ National level (optimal value 100%)	%	North-West Region	84	83	83	82
3	Gross domestic product national level	%	Total economy	1.6	2.2	2.4	3.0
			North-West Region	1.8	2.2	2.5	3.0
4	Gross domestic product in the industry	%	Total economy	1.6	1.8	2.1	2.9

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No. crt.	Analyzed economic indicators			Forecasted evolution of indicators			
	Indicator denomination	M.U.	Coverage area	2013	2014	2015	2016
			North-West Region	2.2	1.8	2.2	3.1
5	Monthly gross average wage	Euro/employee	Total economy	502	528	552	573
			North-West Region	416	436	452	466
6	Rate of unemployment	%	Total economy	5.2	5.0	4.7	4.5
			North-West Region	4.1	3.9	3.7	3.5
7	Average number of employees by region	Number	Total economy	561	568	576	587
			North-West Region	577	581	586	593
8	The structure of the average number of employees by reference to the national level	%	North-West Region	13	13	13	13
9	The structure of the number of unemployed by reference to the national level	%	North-West Region	11	11	11	11

Source: Statistical processing performed by author based on National Forecasts Commission data for period of time 2013 - 2016

For the indicators gross domestic product and monthly net average wage, the disparity indices range between 82% - 84%. Since the optimal level is 100% we can appreciate that distance between the levels achieved for these indices by the North-West Region is very close to the national level. For five other economic indicators of the North-West Region (gross domestic product at national level and in the industry, the monthly gross average wage, the rate of unemployment and the average number of employees by region) one estimates an evolution very close to the national level in the period 2013-2016. The percentage of employed and unemployed forecasted for the North-West Region of Romania is 13%, respectively 11% from the total estimated at national level, approximately equal with that from the other 7 development regions of Romania. Considering the level of foreign direct investments, the North-West Region occupies a medium ranking within the ranking at national level, namely position 5 from 8, in comparison with the other development regions predetermined at national level. Regarding the companies' activity, this region is characterized by a

sparkling economic environment, with indicators that often exceed the national average. Moreover, taking into consideration the notions of gross domestic product and number of employees at regional level represents a means used in literature to substantiate the studies connected to the accounting and financial field (Sucală et al., 2009; 2010). Regarding the activities of research and development, this region ranks second in the national hierarchy according to the press release periodically sent by the North-West Regional Development Agency in 2013. According to the same report, the region concentrates 15% from the total number of doctoral schools at national level, 74% from the total of research entities existent at national level and it occupies the third place at national level in terms of number of persons engaged in the research and development activity and costs incurred by this activity. These are the judgments for which the North-West Region can be considered representative at national level for selecting a sampling of audited companies in this area. This will allow the extrapolation at national level of the results achieved in this region.

Subsequently, there were selected at the level of the North-West Region the companies that between 2005 and 2012 were subjected to financial auditing. In order to be audited, Romanian companies must meet in two consecutive financial years two of the three size criteria established by the national legislation in accordance with the European directives in the accounting field: total assets of 3.650.000 Euros, 7.300.000 Euros net turnover and average number of employees of 50 during the financial year. Therefore, there were selected the companies that had published financial statements for a period of 5 years, in each of the financial years 2008 – 2012 (this sampling procedure was used in literature by Grosanu and Rachisan, 2009). For these, data were extracted through the National Trade Register Office and the Ministry of Finance. For data extraction we took into account the quantification of certain sizes that can be able to determine the change of market share of financial auditors of these companies. Thus, the audited companies were been grouped in three big categories according to the auditors' typology: Big Four auditors, Non Big Four auditors: companies and authorized individuals.

For each of these three categories we extracted representative data for the 14 factors that are able to determine the increase of market share of auditors synthesized in this study. These data which cover all

three categories of audited companies included in the study relate to: the size of social capital, the existence or lack of certain changes within the structure of the activity and/or of the social capital, the field of activity: industry or not, the typology of corporate governance and the shareholding structure: the existence or lack of foreign elements, the typology of the company's form of organization: joint stock companies or limited liability companies, the spatial extent of these companies (number of secondary branches and working points), the duration of the audit contract and for the last five financial years we extracted from the financial statements the values especially referring to the three parameters of auditing: turnover, total assets and average number of employees and in addition the level of equity and of net result (profit or net loss).

4. Results and discussions

In order to establish the market share of the three categories of auditors in Romania, by applying the quantitative competitive method, the study took into consideration 14 aspects as performance criteria, able to condition the increase or decrease in the market share of a category of auditors or another.

Table 2.

Performance criteria analyzed for establishing the ranking regarding the market share of the financial auditors in Romania based on the financial statements published by the audited companies in the period 2008-2012

No. crt.	Denomination performance criteria (i)	M.U.	Optimization	Share of economic importance (pi)	Achieved level of performance criteria		
					Non Big Four Auditors		
					Big Four Auditors (C _{BF})	Companies (C _{NBF})	Authorized Individuals (C _{PA})
1	Number of audited companies from total auditable	%	Maximization	0.07	8.65	72.97	18.38
2	Number of audited companies with foreign management	%	Maximization	0.07	17.14	68.57	14.29
3	Number of audited companies with foreign capital	%	Maximization	0.07	17.22	65.52	17.26

No. crt.	Denomination performance criteria <i>(i)</i>	M.U.	Optimization	Share of economic importance <i>(pi)</i>	Achieved level of performance criteria		
					Big Four Auditors <i>(C_{BF})</i>	Non Big Four Auditors Companies <i>(C_{NBF})</i>	Authorized Individuals <i>(C_{PA})</i>
4	Number of audited companies that registered restructuring operations	%	Minimization	0.06	8.59	74.23	17.18
5	Number of companies organized as limited liability companies	%	Minimization	0.06	37.50	50.00	12.50
6	Number of audited companies in the industry	%	Maximization	0.09	13.52	72.88	13.60
7	Average number of working points of the audited companies	Number	Maximization	0.07	72	5	2
8	Average duration of an audit contract	Years	Maximization	0.07	1.69	2.67	2.26
9	The cumulated annual average value of turnover	%	Maximization	0.08	70.09	26.82	3.09
10	The cumulated average value of social capital	%	Maximization	0.07	53.98	44.25	1.77
11	The cumulated annual average value of total assets	%	Maximization	0.09	81.76	16.12	2.12
12	The cumulated annual average value of equity	%	Maximization	0.07	68.31	27.97	3.72
13	The level of cumulated annual average value of net result	Loc/ Value (thous. eur)	Minimization / Maximization	0.05	1/ 94.042	3/ -20.843	2/ -1.254
14	The cumulated annual average value of the number of employees	%	Maximization	0.06	42.29	52.75	4.96

Source: Statistical processing performed by authors

Some of the established criteria are able to increase the market share of auditors by increasing the value of these criteria (optimization by

maximization, and others condition the increase of market share through a level as low as possible (optimization by minimization). Based on these performance criteria, in order to establish a ranking of the three categories of entities we built the following comparison matrix:

$$M = \begin{matrix} & & & \mathbf{1} & \mathbf{2} & \mathbf{3} \\ \mathbf{1} & \left(\begin{matrix} C_{NBF} & C_{PA} & C_{BF} \end{matrix} \right) & & & & 0.07 \\ \mathbf{2} & \left(\begin{matrix} C_{NBF} & C_{BF} & C_{PA} \end{matrix} \right) & & & & 0.07 \\ \mathbf{3} & \left(\begin{matrix} C_{NBF} & C_{PA} & C_{BF} \end{matrix} \right) & & & & 0.07 \\ \mathbf{4} & \left(\begin{matrix} C_{BF} & C_{PA} & C_{NBF} \end{matrix} \right) & & & & 0.06 \\ \mathbf{5} & \left(\begin{matrix} C_{PA} & C_{BF} & C_{NBF} \end{matrix} \right) & & & & 0.06 \\ \mathbf{6} & \left(\begin{matrix} C_{NBF} & C_{PA} & C_{BF} \end{matrix} \right) & & & & 0.09 \\ \mathbf{7} & \left(\begin{matrix} C_{BF} & C_{NBF} & C_{PA} \end{matrix} \right) & & & & 0.07 \\ \mathbf{8} & \left(\begin{matrix} C_{NBF} & C_{PA} & C_{BF} \end{matrix} \right) & & & & 0.07 \\ \mathbf{9} & \left(\begin{matrix} C_{DF} & C_{NDF} & C_{PA} \end{matrix} \right) & & & & 0.08 \\ \mathbf{10} & \left(\begin{matrix} C_{BF} & C_{NBF} & C_{PA} \end{matrix} \right) & & & & 0.07 \\ \mathbf{11} & \left(\begin{matrix} C_{BF} & C_{NBF} & C_{PA} \end{matrix} \right) & & & & 0.09 \\ \mathbf{12} & \left(\begin{matrix} C_{BF} & C_{NBF} & C_{PA} \end{matrix} \right) & & & & 0.07 \\ \mathbf{13} & \left(\begin{matrix} C_{BF} & C_{PA} & C_{NBF} \end{matrix} \right) & & & & 0.05 \\ \mathbf{14} & \left(\begin{matrix} C_{NBF} & C_{BF} & C_{PA} \end{matrix} \right) & & & & 0.06 \\ & & & \mathbf{1/2} & \mathbf{1/2^2} & \mathbf{1/2^3} \end{matrix} \tag{5}$$

The results of processing the data from the comparison matrix have been centralized in a ranking in table 3, for both application alternatives of the method: the statistical approach (without taking into consideration the shares of economic importance) and the economic approach (by taking into consideration the shares of economic importance based on a professional judgment according to the signification of the estimated impact of each performance criterion on the market share).

Table 3.

The ranking of financial auditors through the comparison matrix method – both approaches

Financial Auditors-Typology		Statistical approach			Economic approach		
Category	Symbol	Score	Hierarchy	Market share	Score	Hierarchy	Market share
Big Four Companies	C_{BF}	4.750	I	38.78%	0.330	II	38.46%
Non Big Four Companies	C_{NBF}	4.625	II	37.76%	0.331	I	38.58%
Authorized individuals	C_{PA}	2.875	III	23.47%	0.197	III	22.96%
Total		12.250		100.00%	0.858		100.00%

Source: Statistical processing performed by authors

According to this ranking, based on the statistical variation the Big Four auditors have the highest market share (38.78%) established by concomitantly taking into consideration all 14 aspects able to influence the increase the business size of audit companies. If the 14 performance criteria are differentiated based on the professional judgment according to the impact that each of them has on the market share, it seems that the Big Four companies rank second concerning market share (38.46%) immediately after the Non Big Four audit companies (38.58%).

If we restrict the typology of auditors in two categories: Big Four auditors and Non Big Four auditors (companies and authorized individuals included), the results of the study indicate that the Non Big Four auditors hold a share of 61.23% according to the statistical approach, respectively 61.54% according to the economic approach. The remaining percentage represents the market share of the Big Four auditors.

The results revealed by the two methods are relatively close, which highlights their credibility and relevance for the study's results. This is a confirmation of the fact that the value of the importance coefficients established through professional judgment is founded.

However, in order to have a more complete picture of the structure of the audit market, it is appropriate a centralization method of the two approaches, so that the users of the information derived from this study to have a centralized image of it. This objective can be achieved by granting a score to each auditor according to the position occupied in the ranking for each approach – statistical and economic – and their centralization by adding the individual scores obtained by each category of auditors.

Table 4.

Ranking of financial auditors through comparison matrix method – centralization

Place in ranking	Granted score	Company hierarchy								
		Statistical approach			Economic approach			Centralization		
		Company	Cumulated score	Granted score	Company	Cumulated score	Granted score	Company	Cumulated score	Granted cumulated score
I	3	C_{BF}	4.750	3	C_{NBF}	0.331	3	C_{BF}	5.081	5
II	2	C_{NBF}	4.625	2	C_{BF}	0.330	2	C_{NBF}	4.955	5
III	1	C_{PA}	2.875	1	C_{PA}	0.197	1	C_{PA}	3.072	2

Source: Statistical processing performed by authors

After adding all the scores presented in table 4, the results of the study show that the Big Four and Non Big Four companies occupy the same market share (approximately 41.67% each), while the auditors – authorized individuals would hold the rest of the market share (approximately 16.66%). Therefore, according to the present research methodology the Big Four companies do not hold a market share which could provide a significant deployment in compassion with the share held by the Non Big Four companies. Moreover, if we are to split the audit market by dividing the auditors in two categories, it would result that the Big Four companies hold 41.67% while the rest of the auditors (smaller audit companies and authorized individuals) hold a cumulate share of 58.33%.

The assessment of these results depends on the perspective from which we look at them. From a global perspective, by comparing the two percentages, it appears that international auditors (Big Four companies) hold a rather small market share in comparison with national auditors (Non Big Four companies and authorized individuals). If we look at the results in terms of number of auditors from each category, it appears that Big Four companies actually hold a very large share of the audit market. That is, each Big Four audit company has an average of 10.42% from the market overtaken by these four audit companies. At the same time, Non Big Four auditors and authorized individuals, although they cumulated a greater market share (58.33%), the average percentage of cumulated market share accruing to each is much lower (0.94%). This happens because, based on the sampling substantiating the present study, a large market share is divided between a great number of auditors belonging to this category (62 local financial auditors).

5. Conclusions

At Romania's level, in order to assess whether the Big Four are actually big or not involves taking into consideration two perspectives. In terms of the percentage held from the national market of audit services, these companies hold an inferior percentage (41.67%) in comparison with the Non Big Four companies and authorized individuals (58.33%). The prevalence of Big Four companies is not insured although they audit the beneficiaries with the best financial performances, the largest businesses, the highest value of assets and equity, respectively with the largest

territorial dispersion. In Romania, although the national auditors divided in the study in two categories (companies and authorized individuals) are smaller, they can cover a greater market share compared to the larger auditors, but less numerous from the Big Four category. On the other hand, if we look closer to the results of the study and take into consideration the fact that the four companies from the Big Four category hold 41.67% from the audit market share, while a number of 62 Non Big Four companies hold 58.33%, only then we can conclude that Big For companies are actually big in Romania.

The factors that influence the business of each category of auditors are different from one case to the other. For national auditors the increase of market share is supported by the companies with foreign corporate governance, by the great number of companies that did not register changes within the structure of social capital and activity (mergers, divisions), by the relatively large number of audited companies whose form of organization is limited liability company, by the high number of audited companies which operate in the industrial sector, by the fact that the audit contracts are usually concluded for a large period of time and by the companies with a large number of employees. These auditors provide services for companies that register a low territorial dispersion, reduced profits or even accounting losses, and the business level is a modest one. On the other hand, the Big Four auditors hold the market share revealed by this study because of the predilection towards auditing companies with a large territorial dispersion (average number of secondary branches and working points 72) and with high values of turnover, social capital, total assets, equity and profits. The increase of foreign investments, foreign management or of audited companies which operate in the industrial sector are not factors able to increase the market share of the Big Four auditors. The methodology of this study can be useful for the Big Four auditors in their decision to expand or restrict their activity in a country according to the percentage of auditable entities in the economy's structure which have the above mentioned profile.

The study includes financial data reported by the audited companies between 2008 and 2012. They were taken into account by considering the average level by performing a simple arithmetic means. The limits of the study are given by the fact that the current situation can be slightly different from the average of the last five financial years taken into consideration. In order to complete these aspects, it is

possible to continue the research by establishing, based on the methodology provided by the comparison matrix method, an annual market share level of the companies from the Big Four category and hence verifying the possibility of establishing an evolutionary trend in the future. This would facilitate anticipation based on a statistical regression model of the evolution of the business of Big Four companies in Romania by explaining the evolution of the influential factors forecasted for the period for which the forecast is made.

REFERENCES

- Abidin, S., Ahmad-Zaluk, N.A. (2012) Auditor industry specialism and reporting timeliness, *Procedia - Social and Behavioral Sciences*, vol. 65(3), pp. 873-878;
- Achim, M.V. (2009) Analiza economico-financiară, Ed. Economică, București
- Alkhatib, K., Marji, Q. (2012) Audit Reports Timeliness: Empirical Evidence from Jordan, *Procedia - Social and Behavioral Sciences*, vol. 62, pp. 1342-1349;
- Basioudis, I. G., & Francis, J. R. (2007) Big 4 audit fee premiums for national and office-level industry leadership in the United Kingdom., *Auditing: A Journal of Practice & Theory*, 26(2), pp. 143-166;
- Becker, C. L., DeFond, M. L., Jiambalvo, J., & Subramanyam, K. R. (1998) The effect of audit quality on earnings management, *Contemporary Accounting Research*, vol. 15(1), pp.1-24;
- Carcello, J.V., Hollingsworth, C., Mastrolia, S.A. The effect of PCAOB inspections on Big 4 audit quality, *Research in Accounting Regulation*, vol. 23(2), pp. 85-96;
- Carson, E. (2009) Industry specialization by global audit firm networks, *The Accounting Review*, 84(2), pp. 331-354;
- Carson, E., & Fargher, N. (2007) Note on audit fee premium to client size and industry specialization, *Accounting & Finance*, 47(3), pp. 423-446;
- Citron, D.B., Manalis, G. (2001) The international firms as new entrants to the statutory audit market: an empirical analysis of auditor selection in Greece, 1993 to 1997, *European Accounting Review*, vol. 10(3), pp. 439-459;
- Chung, R., Firth, M., & Kim, J. B. (2003) Auditor conservatism and reported earnings, *Accounting and Business Research*, 33(1), pp.19-32;
- Craswell, A.T., Francis, J.R., Taylor, S.L. (1995) Auditor brand name reputations and industry specializations, *Journal of Accounting and Economics*, vol. 20(3), pp. 297-322;

- Cuzdriorean, D. D., Fekete, Sz., & Sucală, L. (2010) An attempt at measuring the fiscal influence over accounting of Romanian listed companies, *Annales Universitatis Apulensis Series Oeconomica*, vol. 1(12), pp.95-111;
- DeFond, M. L., Francis, J. R., & Wong, T. J. (2000) Auditor industry specialization and market segmentation: Evidence from Hong Kong, *Auditing: A Journal of Practice & Theory*, 19(1), pp. 49–66;
- DeFond, M.L., Lennox, C.S. The effect of SOX on small auditor exits and audit quality, *Journal of Accounting and Economics*, vol. 52(1), pp. 21-40;
- Ettredge, M., Kwon, S. Y., Lim, C. Y. (2009) Client, industry, and country factors affecting choice of Big N industry expert auditors. *Journal of Accounting, Auditing and Finance*, vol. 24(3), pp. 433–467;
- Ferguson, A., Francis, J. R., & Stokes, D. J. (2006) What matters in audit pricing: Industry specialization or overall market leadership?, *Accounting and Finance*, 46, pp. 97–106;
- Ferguson, A., Francis, J. R., & Stokes, D. J. (2003) The effects of firm-wide and office-level industry expertise on audit pricing, *The Accounting Review*, 78(2), pp. 429–448.
- Firth, M. (1999) Company takeovers and the auditor choice decision, *Journal of International Accounting, Auditing and Taxation*, vol. 8(2), pp. 197-214
- Francis, J.R., (1984) The effect of audit firm size on audit prices: A study of the Australian Market, *Journal of Accounting and Economics*, vol. 6(2), pp. 133-151;
- Francis, J. R., & Krishnan, J.(1999) Accounting accruals and auditor reporting conservatism, *Contemporary Accounting Research*, vol. 16(1), pp. 135–16;
- Francis, J.R., Maydew, E. L., & Sparks, H. C.(1999) The role of Big Six auditors in the credible reporting of accruals, *Auditing: A Journal of Practice and Theory*, vol. 12(2), pp.17–34;
- Francis, J. R., Reichelt, K., & Wang, D. (2005). The pricing of national and city-specific reputations for industry expertise in the US audit market, *The Accounting Review*, 80(1), 113–136;
- Ge, W., McVay, S. (2005) The disclosure of material weaknesses in internal control after the Sarbanes-Oxley Act, *Accounting Horizons*, vol. 19(3), pp. 137–158;
- Groșanu, A., Răchișan, P.R. (2009), “Study regarding the organization of management accounting in the context of responsibility centers”, *Annals of Faculty of Economics*, Vol. 3, No. 1, pp. 966-972.
- Guedhami, O., Pittman, J.A., Saffar, W. (2009) Auditor choice in privatized firms: Empirical evidence on the role of state and foreign owners, *Journal of Accounting and Economics*, vol. 48(2-3), pp. 151-17;
- Habib, A., Bhuiyan, B.U. Audit firm industry specialization and the audit report lag, *Journal of International Accounting, Auditing and Taxation*, vol. 20(1), pp. 32-44;

- Hodgdon, C., Tondkar, R.H., Adhikari, A., Harless, D.W. (2009) Compliance with International Financial Reporting Standards and auditor choice: New evidence on the importance of the statutory audit, *The International Journal of Accounting*, vol. 44 (1), pp. 33-55;
- Hope, O.K., Kang, T., Thomas, W., Yoo, Y.K. (2008) Culture and auditor choice: A test of the secrecy hypothesis, *Journal of Accounting and Public Policy*, vol. 27(5), pp. 357-373;
- Houqe, M.N., Monem, R.M., Van Zijl, T. (2012), "Government quality, auditor choice and adoption of IFRS: A cross country analysis", *Advances in Accounting*, vol. 28 (2), pp. 307-331.
- Hunt, A.K., Lulseged, A. (2007) Client importance and non-Big 5 auditors' reporting decisions, *Journal of Accounting and Public Policy*, vol. 26(2), pp. 212-248;
- Jenkins, D. S., Kane, G. D., Velury, U. (2007) Earnings conservatism, audit quality: An examination of the late 1990s, *Journal of Forensic Accounting*, vol. 8, pp. 287-302;
- Jenkins, D.S., Velury, U. (2011) The emergence of second-tier auditors in the post-SOX era: An analysis of accounting conservatism, *Research in Accounting Regulation*, vol. 23(2), pp. 172-176;
- Jeong, S.W., Rho, J. (2004) Big Six auditors and audit quality: The Korean evidence, *The International Journal of Accounting*, vol. 39(2), pp. 175-196;
- Krishnan, G. V., Visvanathan, G. (2007) Reporting internal control deficiencies in the Post-Sarbanes-Oxley era: The role of auditors and corporate governance, *International Journal of Auditing*, vol. 11(2), pp. 73-90;
- Kwon, S. Y., Lim, C. Y., Tan, P. M.-S. (2007) Legal systems and earnings quality: the role of auditor industry specialization, *Auditing: A Journal of Practice & Theory*, vol. 26(2), pp. 25-55;
- Lennox, C., Pittman, J. (2010) Auditing the auditors: evidence on the recent reforms to the external monitoring of audit firms, *Journal of Accounting and Economics*, vol. 49(1-2), pp. 84-103;
- Lin, Z.J., Liu, M. (2009) The impact of corporate governance on auditor choice: Evidence from China, *Journal of International Accounting, Auditing and Taxation*, Vol. 18 (1), pp. 44-59;
- Louis, H. (2005) Acquirers' abnormal returns and the non-Big 4 auditor clientele effect, *Journal of Accounting and Economics*, vol. 40(1-3), pp. 75-99;
- Răchișan, P. R., Groșanu, A. (2010), "Challenges of the auditing profession in the context of economic crisis", *Studia Universitatis Babeș Bolyai-Negotia*, Vol. 3, pp. 69-76.
- Rizzotti, D., Greco, A.M. (2013) Determinants of Board of Statutory Auditor and Internal Control Committee Diligence: A Comparison Between Audit Committee and the Corresponding Italian Committees, *The International Journal of Accounting*, vol. 48(1), pp. 84-110;

- Srinidhi, B., Yeow, L.C., Hossain, M. (2009) Effects of country-level legal, extra-legal and political institutions on auditing: A crosscountry analysis of the auditor specialization premium, *Journal of Contemporary Accounting & Economics*, 5, pp. 34–46;
- Sucală, L., Vladu, A.B., Fekete, Sz., Fătăceanu, Gh. (2009) Social Welfare And Taxation Effects On Insurance. An International Empirical Study, *Annals of Faculty of Economics*, vol. 3(1), pp. 1176-1181;
- Sucală, L., Cuzdriorean, D.D., Fekete, Sz., Ienciu, N. (2010) Empirical Evidence On The Effects Of Social Welfare And Taxation On Insurance, *Annals of Faculty of Economics*, vol. 1(1), pp. 595-600;
- Topor D., Căpușneanu S., Puțan A. (2012) Evolution and performance analysis for wine entities in Romania, *Annales Universitatis Apulensis Series Oeconomica*, vol. 14(2), pp. 403-412;
- Tsipouridou, M., Spathis, C. (2012) Earnings management and the role of audithors in an unusual IFRS context: the case of Greece, *Journal of International Accounting, Auditing and Taxation*, vol. 21, pp. 62-78.
- Tu, G. (2012) Controller changes and auditor changes, *China Journal of Accounting Research*, vol. 59(1), pp. 45-58;
- Wallace, W. (1998) Changes in European and Australian companies when they choose a Big 5' auditor?, *European Management Journal*, vol. 16(6), pp. 653-659;
- Wang, K., & Iqbal, S. O. (2009) Audit pricing and auditor industry specialization in an emerging market: Evidence from China, *Journal of International Accounting, Auditing and Taxation*, 18, pp. 60–72;
- Wang, B., Xin, Q. (2011) Auditor choice and accruals patterns of cross-listed firms, *China Journal of Accounting Research*, vol.4(4), pp. 233-25;