

## QUALITY INDEX CREATING AND ANALYSIS OF THE TRANSPARENCY OF AUDIT FIRMS - CASE STUDY IN CROATIA

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### **Abstract**

This paper analyzes transparency of audit firms that audit financial statements of listed companies. Audit Act requires that all listed companies in Croatia must have their financial statements audited. In addition, the Act obliges auditing firms which carry out audits of public interest companies to prepare transparency reports and to publish them on their websites or on websites of the Audit Chamber. Considering the above, the main objective of this paper is to explore if audit firms operate transparently or not, and to create the quality index of transparency report based on archival analysis of published transparency reports and survey analysis conducted with relevant audit experts.

Also, with regard to the essential elements of the audit transparency report, the aim of this paper is to investigate their stability and quality. Moreover, we wanted to find out whether there is a significant difference in transparency between the 'Big Four' audit firms and others. The analysis comprises the examination of the importance of certain elements of audit transparency reports, with aim of finding new elements (i.e. voluntary reporting) to achieve a more transparency and better reports. The results of our study indicate that audit firms are not transparent fully.

**Key words:** *Quality index, Transparency report, Audit firms, Quality of reporting, Audit Act*

### **1. INTRODUCTION**

Quality assurance is the main tool of the audit profession. Its purpose is to convince public that the auditor or audit firm is operating on the level that meets established auditing standards and ethical

rules (Messier, 2000). It is not only a tool for disciplinary sanctions, it aims also to enforce, demonstrate and improve audit quality. Transparency of audit firms has significant role in achieving higher level of audit practice quality. Important characteristic of a good quality of information provided to external users is their full disclosure and transparency. Transparency of information is related to an environment of accessible and understandable information to all market participants. The key subject in terms of greater transparency is the impact on user perception of information. What is really important is the responsibility of audit firms, their transparency and full disclosure. Audit Act in Croatia obliges audit firms that audit financial statements of listed companies to operate transparently and to publish transparency report (TR). Transparency report should present the audit firm's operations and provide a transparent view of the condition thereof. This paper investigates the quality of audit disclosures through a system of transparent reporting. Primarily, it assesses the level of audit firms' compliance with the requirements of transparent reporting set by the Law. Secondly, it investigates the quality of published reports. Finally, the quantitative and statistical analyses are used to create the quality index and to make conclusions about transparency reporting of audit firms. The sample of this study consists of audit firms that audited Croatian listed companies.

Structure of this paper is organized in four sections. First section shows prior researches about transparency of reporting. Second section describes audit regulation, harmonization of audit profession and transparency report as a part of Croatian Audit Act. The section three uses quantitative methodology in creating quality index of transparency report. The last section gives results of empirical research, using descriptive statistic and cluster analyzes.

## **2. LITERATURE REVIEW**

Reviewing the available literature, similar themes regarding the quality of transparency report are rarely investigated, because legal obligation to create and publish transparency report was only recently (in EU from 2006 and in Croatia from 2008.) Given the auditing is rather a very 'young' profession in Croatia, the availability of this kind of research is completely understandable. Numerous researches have touched the issue of transparency of other reports, such as the annual report of the company (Aljifri 2008; Cohen 2002; Coy and Dixon 2004; Li 2008; Linsley and Shrives 2009; Santema and van de Rijt 2001). Based on the created index of the quality of annual reports in Croatia, index of quality is created in terms of transparency reports (Čular, 2009). Ehlinger (2010) investigated the determinants of publication of transparency report for Austria, Germany and the Netherlands. For the empirical analysis, author estimated the extent of disclosure in 125 transparency reports based on a self-developed disclosure index. He focused on reports published by Austrian, German and Dutch

auditors for the reporting periods 2007 and 2008 under the mandatory reporting regime introduced by Article 40 of the Directive as implemented in the respective jurisdiction's national law. He used OLS regressions in order to test whether the extent of disclosure in the transparency reports differs across abovementioned jurisdictions and reporting periods, and in order to test whether the extent of disclosure varies depending on the size of the reporting entity and membership in a network. Author also tested for variation in the extent of disclosure in transparency reports between non-Big Four and Big Four audit firms. Finally, he tested for such variation depending on the degree of integration and the geographic spread of a disclosed network among reports that were published by network members. Using descriptive statistics and multivariate analysis, the author observed the following: difference between the observed countries in terms of quantity of the given information; difference between the annual periods in the quality of the information provided; positive correlation between company size and the extent of the information; differences between the 'Big Four'<sup>1</sup> and other companies from releasing information; existence of a relationship between audit firm size and auditor independence; difference between companies that are members of the network and those that are not members of the network. Pott, Mock & Watrin (2008) investigated the effect of a transparency report on auditor independence. Results of the research indicate that there is no significant perceived difference as to whether the transparency report is mandatory or voluntary or whether the report is audited or not. Also the transparency report's effectiveness is not assessed differently by practicing auditors or accountants.

### **3. TRANSPARENCY REPORT**

A quality control system is essential for the functioning of a fair and transparent market. This system creates an environment and culture that supports compliance and that must be cost-effective. This means that the cost of regulation does not exceed the benefit to the public. In times of crisis, when the regulations are evolving rapidly and without the necessary processes, the consequences can be bad for the public interest. Harmonization of audit systems and the introduction of auditing standards, harmonize the quality of auditing (Soltani, 2009). Mandatory is continuous education of audit staff, to ensure familiarity with auditing standards (DeAngelo, 1981). Thanks to the revised 8<sup>th</sup> EU directive a set of measures related to audit firms that audited listed companies are appointed (Vuko, 2009). One of them is the introduction of an annual report of transparency of auditing firms. It includes information about audit firm governance system, its international networks, quality assurance and charged fee for audit and non-audit services, to show the relative importance of audit in the overall operations of the

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<sup>1</sup> The 'Big Four' are the four largest international audit companies (PwC, Deloitte, Ernst & Young and KPMG).

audit firm. According to the Article 17a. Croatian Amended Audit Act (NN, 139/08), audit firms and independent auditors that perform the audits of public interest companies, are obliged, within three months of the end of the fiscal year, to publish on their web sites or the Audit Chamber website an annual transparency report contains:

- ✓ a description of the organizational structure;
- ✓ a description of the ownership structure;
- ✓ a description of the network and the legal and structural arrangements in the network;
- ✓ a description of the governance structure of the audit firm;
- ✓ a description of the internal quality control system of the audit firm;
- ✓ an indication of when the last quality assurance review is referred;
- ✓ a list of public-interest entities;
- ✓ statement relating to the independence of auditors;
- ✓ a statement on the policy followed by the audit firm and the independent auditor concerning the continuing education of certified auditors;
- ✓ overall financial information;
- ✓ information concerning the basis for remuneration of certified auditors who sign audit reports on audits of public-interest entities.

#### **4. CREATING QUALITY INDEX OF TRANSPARENCY REPORT**

Quality index of transparency report of audit firms (IQTR) is created by:

- ✓ evaluating the importance of each element of transparency report **(1-5)**;
- ✓ calculating the importance of an element of transparency report **(I.E.j)**;
- ✓ assessing the quality of transparency report **(A.Q.j)**;
- ✓ calculating overall quality of transparency report;
- ✓ creating the quality index of transparency report of audit firms **(IQTR)**.

Based on the set of elements of transparency report, a survey research is conducted on the importance of certain elements of transparency report. For this purpose, reference group is composed of relevant

experts, certified auditors from Croatia and professors who teach auditing at the Faculty of Economics in Zagreb and Split.

Primarily, the study is conducted to assess the importance of the elements of transparency report. A range of assessment is given from 1 to 5 (score 1 - the element of transparency report is not important; score 5 - the element of transparency report is extremely important). The expert assessments are given according to their objective knowledge about of importance elements of transparency report. In order to gain weight, which will later serve for the calculation of IQTR's, it is necessary to compute the importance of each element of transparency report.

To make the process of index creating, it is necessary to create a level weights with range from 1 to 2, i.e. coefficient of importance of the element of transparency report (1 - element is not so important for the quality of transparency report, 2 - element is extremely important for the quality of transparency report).

Table 1: Elements of transparency report with the weight of importance

	Elements of TR	The weight of importance <i>I.E.j</i>
1	a description of the organizational structure	1,43
2	a description of the ownership structure	1,66
3	a description of the network and the legal and structural arrangements in the network	1,54
4	a description of the governance structure of the audit firm	1,54
5	a description of the internal quality control system of the audit firm	1,71
6	an indication of when the last quality assurance review referred	1,66
7	a list of public-interest entities	1,49
8	a statements relating to the independence of auditors	1,71
9	a statement on the policy followed by the audit firm and the independent auditor concerning the continuing education of certified auditors	1,54
10	overall financial information	1,49
11	information concerning the basis for remuneration of certified auditors who sign audit reports on audits of public-interest entities	1,37

Source: Processing by the expert evaluations

To get values in range from 1 to 2, it is necessary to divide maximum value (i.e. each element was evaluated with score 5 by all experts) with number 2. Table 1 present selected elements of transparency report and weights of elements importance according to expert's estimates. The coefficient of the importance of elements of transparency report is shown by the equation:

$$I.E.j = \frac{\sum_{i=1}^n x_{ij}}{\frac{\max_j(\sum_{i=1}^n x_{ij})}{2}}, \quad (1)$$

$\sum_{i=1}^n x_{ij}$  - the total score of the each element importance;

$x_{ij}$  - the experts assessments of the each element importance (1-5);

$n$  - number of experts;

$i$  - an expert;

$j$  - an element of transparency report.

The next step in calculating IQTR refers to the quality of transparency report. To obtain A.Q.j, it is necessary to know the individual persistence of elements in transparency report. Persistence of the element in transparency report is evaluated with 0 or 1. If an element exists in the transparency report, the value is 1, and if an element does not exist in the transparency report, the value is 0.

Assessment of the quality of transparency report obtained by the importance of the element of transparency report multiplied by the individual persistence of elements in the transparency report. Assessment of the quality of transparency report is shown in the following formula:

$$A.Q.j = I.E.j \cdot \text{persistence element } j \quad (2)$$

where is: persistence element  $j \in \{0,1\}$ .

To reach the IQTR, it is necessary to calculate overall quality of transparency report, which is the sum of the assessment of quality of transparency report, as shown by the following expression:

$$OVERALL QUALITY TR = \sum_{j=1}^m A.Q.j, \quad (3)$$

$m$  - number of transparency report elements

Finally, the quality index of transparency report of audit firms (**IQTR**) is obtained by dividing the overall quality TR by the maximum value of the overall quality TR. IQTR is defined by the following expression:

$$IQTR = \frac{OVERALL\ QUALITY\ TR}{\max\ OVERALL\ QUALITY\ TR} \cdot 100 \quad (4)$$

where is:  $\max\ OVERALL\ QUALITY\ TR = \sum_{j=1}^m I.E.j.$

## 5. ANALYSIS OF TRANSPARENCY OF AUDIT FIRMS IN CROATIA

To reach the required results related to the above study, it is important to know the sample or the number of audit firms that will be analyzed. Primarily, we start from companies that must annually review and publish the audit reports. According to data from the Croatian stock market (ZSE), it can be concluded, that from the total number of companies, 54 companies are audited by 'Big Four'. Other companies are audited by audit firms, registered in the Audit Chamber, while for 8 companies there is no information whether and by whom the audit is done and what are the results of auditing (Table 2).

Table 2: 'Big Four' and other audit firms: Who audited the financial statements?

		No.	Percent
Valid	'Big Four'	54	28,4
	Audit firms	128	67,4
	No information	8	4,2
	Total	190	100,0

Source: According to data of selected companies

The analysis found that all companies from ZSE are audited by 57 audit firms. Those audit firms are obliged, according to the Croatian Amended Audit Act, to publish transparency report. The study also found that 64.9% of audit firms created and published transparency report, while 35,1% audit firms did not prepare or publish transparency report (Table 3).

Table 3: Availability of TR by 57 audit firms

		No.	Percent
Valid	TR is available	37	64,9
	TR is not available	20	35,1
	Total	57	100,0

Source: According to data of selected firms

Given the possibility set by Croatian Amended Audit Act, which defines that transparency report can be published on the website of audit firm or on the Audit Chamber website, it is important to know how many audit firms issued their reports in one of two ways (Table 4).

Table 4: Where is TR available for 37 audit firms?

		No.	Percent
Valid	Web site of audit firm	27	73,0
	Web site of audit chamber	10	27,0
	Total	37	100,0

Source: According to data of selected firms

The law defines the elements of audit transparency report and therefore it is important to investigate how many audit firms have the same elements of TR. The persistence of the elements or how many firms don't have appropriate element is shown in Table 5.

Table 5: Number of audit firms that don't have element of TR

Elements of TR		No.	Percentage
1	a description of the organizational structure	1	3%
2	a description of the ownership structure	8	22%
3	a description of the network and the legal and structural arrangements in the network	11	30%
4	a description of the governance structure of the audit firm	5	14%
5	a description of the internal quality control system of the audit firm	1	3%
6	an indication of when the last quality assurance review referred	15	41%
7	a list of public-interest entities	0	0%
8	a statements relating to the independence of auditors	2	5%
9	a statement on the policy followed by the audit firm and the independent auditor concerning the continuing education of certified auditors	4	11%
10	overall financial information	3	8%
11	information concerning the basis for remuneration of certified auditors who sign audit reports on audits of public-interest entities	5	14%

Source: Calculated according to data of selected firms

Also, in the analysis it is investigated how many elements persistence in transparency report for every audit firm. After the analysis of transparency, the results are following: from total of 37 audit firms which have entered into the analysis, only eight audit firms are transparent, i.e. their reports have all the elements in the TR (Figure 1). Figure 2 shows audit firms according to number of TR elements.



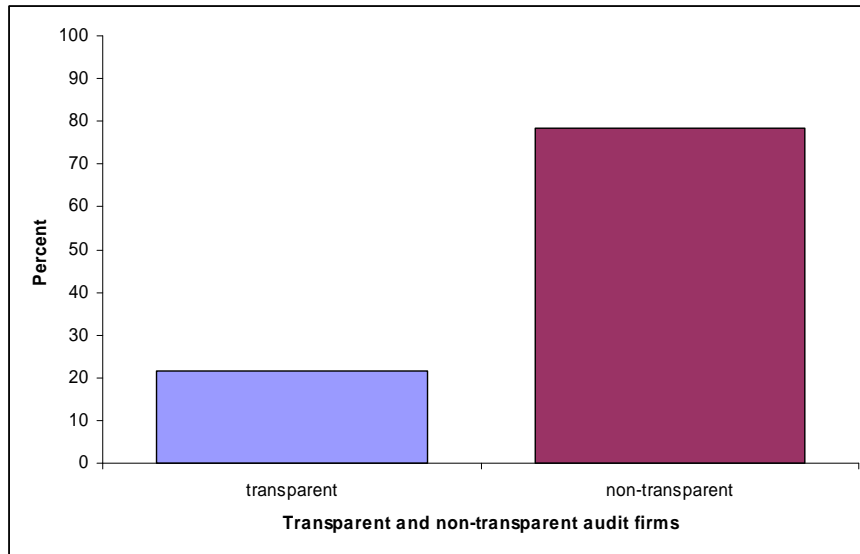


Figure 1: Transparent and non-transparent audit firms which TR is available

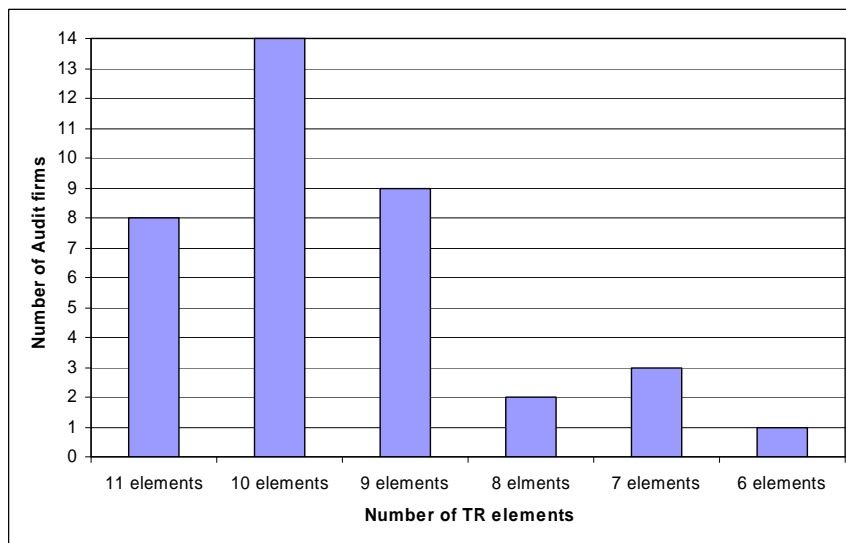


Figure 2: The audit firms which TR is available according to number of TR elements

After descriptive analysis, the correlation between total income of audit firms and audit firms IQTR (quality index ranges from 0 to 100) is calculated. Following indicators are analyzed:

- the total income of the audit firm and the income from audit services were used;
- average income from audit services is approximately 5 million HRK;
- average total income of audit firms is approximately 8,3 million HRK;
- share of income from audit services in total income of audit firms is approximately 60%.

Table 7: Correlation between total income of audit firms and audit firms IQTR

Pearson Correlation	-,075
p-value	,677
N (missing 4 audit companies)	33

Source: According to authors' database

The results from Table 7 show that there is no significant correlation between total income of audit firms and audit firms IQTR (p-value is 0,677).

The classification of selected audit firms is performed using non-hierarchical multivariate cluster k-means method (Pivac and Tadić, 2011). The indicators of classification are: total income of audit firms, income from audit services and IQTR. The results of classification into two clusters are shown in Table 8. The first cluster contains 4 audit firms, and the second cluster contains 33 audit firms. ANOVA test results show that income from audit services and audit firms' total income contribute significantly to the differences between the formed clusters. IQTR does not contribute significantly to the difference between the formed clusters. These results were expected, according to the non-significant correlation between total income of audit firms and audit firms IQTR. Regardless the size of audit firms or the membership to "Big Four" or some other network and beside to business success of audit firms there is no guarantee to transparency of reports and business validity.

Table 8: Classification of selected audit firms

<b>Cluster 1:</b> BTD d.o.o.; Deloitte d.o.o.; Ernst & Young d.o.o.; KPMG d.o.o.		<b>Cluster 2:</b> Audit d.o.o.; Auditus d.o.o.; Ažurnost d.o.o.; Bašrevizor d.o.o.; BDO d.o.o.; Concordia d.o.o.; DTTC d.o.o.; Grant Thornton d.o.o.; HLB d.o.o.; Hodicon d.o.o.; IB revizija d.o.o.; IHS d.o.o.; Invest-kontakt d.o.o.; Iris nova d.o.o.; KM Revizija d.o.o.; Konto-L d.o.o.; Kopun d.o.o.; List d.o.o.; Mervis d.o.o.; Reconsult d.o.o.; Remira d.o.o.; Rev-ri d.o.o.; Revconto d.o.o.; Revex d.o.o.; Revicon Zadra d.o.o.; Revicon Zagreb d.o.o.; Revidas d.o.o.; Revidens d.o.o.; RIR d.o.o.; Revizija Kutleša d.o.o.; Spremić, Kasapović, Teklić d.o.o.; Šibenski Revicon d.o.o.; TBB*REV d.o.o.	
<b>ANOVA</b>			
<b>INDICATORS</b>		<b>F-test p-value</b>	
Total income of audit firms		,000	
Income from audit services		,000	
IQTR		,762	

(The F tests should be used only for descriptive purposes because the clusters have been chosen to maximize the differences among cases in different clusters. The observed significance levels are not corrected for this and thus cannot be interpreted as tests of the hypothesis that the cluster means are equal.)

Source: Calculated according to data of selected firms

## 6. CONCLUSION

Analyzing who audited all companies from Croatian stock market, the conclusion is that approximately 1/3 companies are audited by “Big Four”. The problem that arose with collection of data is that approximately 5% of some companies from ZSE have no information about auditors. The results showed that 57 audit firms audited companies from ZSE. Exploring the main issue of the paper, i.e. transparency report, we came to conclusion that approximately 2/5 TR are not available. These results are certainly disappointing, but expected. Only 1/5 of auditing firms are transparent, observing them through the TR and its elements. This problem is emphasized using a quantitative methodology for creating quality index, taking the base elements of TR. Defining importance weights, we have created methodology (IQTR is created) that would, above all, help in future research. Recommendation is, to achieve a more transparent and better reports, to increase the number of TR elements, using the form of “voluntary publication” (for example, point out the number of employees, number of auditors, the size of property of audit firm, the number of lawsuits, etc.).

Certainly, the increasing number of elements in transparency report, as well as giving the importance to this topic, will serve to create high-quality auditing profession. Introduction of voluntary publication by TR will have an impact on increasing the transparency of auditing companies, and thereby creating a positive image of the same. Looking at the legislation during the Croatian Amended Audit Act, it can be concluded that, given the transparency in Croatia, auditing firms in terms of releasing the essential elements of TR are not in compliance with legal legislations. Audit firms should take seriously this model and work on it. The entry into the EU will undermine the functioning of many small audit firms, and would also create additional large audit firms. The Audit Act is clearly and the competition is big. So the audit firms need to think about that if they want to sustain their business.

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