Empirical study on the analysis of the influence of the audit fees and non-audit fees ratio to the fraud risk

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Abstract

Although the main objective of the financial auditing is represented by the expression of an opinion regarding the accuracy of the financial statement, the greatest financial frauds at international level have proven the complicity of the auditor to their commitment. In these situations, the independence and the objectiveness of the auditor have been affected by the level of the audit and non-audit fees paid by the client company. This research proposes an analysis of the audit and non-audit fees to the fraud risk, by using the logistic regression analysis for the fraud risk assessment, by activity field of the client. The results of the research allege that a low level of audit fees and a high level of the non-audit fees have caused the increase of the fraud risk of the companies listed on the New York Stock Exchange between 2001 and 2002.

Keywords: Fraud risk, financial auditing, audit and non-audit fees, influence factors

1. Introduction

The famous financial scandals of the 21th century have also attributed the responsibility of the development of the financial frauds to the financial auditors. Frequently, they have been art and part in the frauds, for financial reasons. The auditors interest (including the big audit companies) was to continue the contractual relations with companies disposed to fraud risk in order to obtain financial benefits such as audit fees, but more often as non-audit fees (for consulting services), more significant than the first ones.

The research proposes an analysis upon the influence of the levels of the audit and non-audit fees paid by an audited company in states of membership of a certain auditor upon fraud risk. For the evaluation of fraud risk, advanced data analysis statistical methods have been used for a sample of frauded and unfrauded companies which were listed on the New York Stock Exchange (NYSE), between 2001 and 2002.

2. Auditor’s responsibility regarding financial fraud

\textit{International Standards on Auditing} (ISA) (IFAC, 2009) assert that the main objective of the financial auditor is to express an objective, professional and independent opinion regarding the accuracy of the financial statements and not to detect financial frauds. Relying on ISA 240, the financial auditor must get assured, along his mission, that the fraud risk has not determined significant denaturations of the financial statements that would influence the audit
opinion (IFAC, 2009). The same standard defines the financial fraud as an intended act committed by one or more individuals in the leading staff, or persons charged with the governance, employees or third parts, against other persons, that engage using cheats in order to obtain an unfair or illegal advantage (IFAC, 2009).

From the assembly of the financial frauds, ISA 240 distinguishes two types, financial statement fraud and asset misappropriation. For the two types of fraud, the auditor disposes a series of financial and non-financial indicators, red flags, which, being analysed, would emphasize the presence or absence of fraud risk.

2.1. Determinants of fraud risk

Cressey (1953) claims that the determinants factors of fraud could be synthesized on a fraud triangle (ulterior assumed by ISA 240 also), defined by opportunities, pressures and reasoning. Given this triangle, Albrecht (2009) considers that each factor can be analysed from a double perspective (the one of the fraudster and the one of the environment of the frauded company) and can be quantified relying on some specific intensity scales.

Ulterios, through Hollinger’s and Clarck’s studies (Hayes et al., 2005) the influence of the scope of activity and also the internal control system (as an assembly) upon the fraud risk, are tested. Continuing this idea, studies such as the ones of Lenar et al. (2008), Bernardi (2009) and Jayalakshmy et al. (2005) emphasize the very important role of the auditor in preventing and detecting frauds, given the terms of respecting all the morality and quality demands while carrying out the financial audit.

3. The influence of audit and non-audit fees on fraud risk

Starting from a series of theories, such as the Policeman Theory (Hayes et al., 2005), the Lending Credibility Theory (Hayes et al., 2005), the Theory of Inspired Confidence (Limperg Institute, 1985) and Agency Theory (Watts and Zimmerman, 1978), it can be justify the necessity of financial audit in ensuring the accuracy of the financial reported information and supporting the interests of all stakeholders, as well as the remuneration of the audit services based on the audit fees.

Concerning the non-audit services, Ahadiat (2011) claims that these are consulting services provided by the audit companies in the fiscal, management, actuarial, international affairs, human resources management, financial investments field and many others.

One of the most debated subjects in the field of financial audit is represented by the two types of services (audit and non-audit) in the benefit of the same client by the auditor. Wines (2011) considers this fact as incompatible, with repercussion on the independence of the auditor and on the quality of the audit mission.

3.1. Audit fees and fraud risk

Although it remunerates the services provided by the financial auditor within his mission, the audit fees threaten the compliance of the fundamental ethical independence, objectiveness and professionalism principles (Wines, 2011). Hoitash (2007) though considers that the level of audit fees does not have to depend on the auditor’s interest to maintain the contractual relationship with the client, but to be correlated to the complexity and the quality of the provided audit mission.

Therewith, (Cobbin 2002) claims that a high level of audit fees can be caused by a high level of client-associated risk, which will compensate an additional work volume or possible additional costs of the auditor generated by the possible litigations.

Given the agency theory, Jensen and Meckling (1976) consider that the audit fees are costs of monitoring, supported by shareholders for the surveillance of the managers’ activity. In this situation auditors have to verify the managers’ activity in order to evaluate if they act for the company and the shareholders interest. Thus, one may conclude that an appropriate level of audit fees will significantly contribute to the decrease of the fraud risk.
3.2. Non-audit fees and fraud risk

Bigus and Zimmermann (2008) consider that a high level of the non-audit fees can point out the lack of independence of the financial auditor. Thus, an audit opinion that complies with the managers’ interests would determine the continuation of the contractual relations with the auditors (at the level of the audit activities) and also the signing of future new consultancy contracts.

Based on this practice, Tsui and Dhaliwal (2006) claim that a high level of the non-audit fees may have opposite effects on investors’ trust. A series of studies, among the one of Hillison and Kennelly (1988), prove that in order to attract customers, audit companies establish lower audit fees that they will recover through higher non-audit fees. This cost transfer emphasizes a inverse relationship between the two types of fees, within the context of competitive pressures exerted on the level of the assurance and auditing services market.

Moreover, based on these pressures, Sharma and Shidu (2001) consider that the author’s opinion within the final report will not also be an objective one, if the money amount related to the non-audit fees collected from a certain client are significant compared to the collected amounts for the audit services. In this case, one may talk about the auditors’ independence loss from the audited client, with a significant impact on the guarantee of the accuracy of the financial situations.

4. Research methodology

Through a positivist approach, the research propose an analysis of the influence of the the audit and non-audit fees ration of the big audit companies, that are members of the Big 4, on the emergence of the fraud risk within the client companies. Thus, we propose to test and validat the following hypothesis within the research:

- $H_1$: Depending on the activity field of the client, an increase in the level of the audit fees during the current exercise causes a decrease of the fraud risk at the level of the audited client, in the next exercise, under the maintenance of the same auditor;
- $H_2$: Depending on the activity field of the client, an increase in the level of the non-audit fees during the current exercise causes an increase of the fraud risk at the level of the audited client, in the current exercise, under the maintenance of the same auditor.

4.1. The target population, the studied sample, the analysed variables and data source

Within the research, the studied population is represented by the companies listed on the NYSE. From this population, we have considered all the companies that were victims of the financial frauds between 2001 and 2002, before and after Sarbanes-Oxley Act 2002 (normative document adopted by the USA in order to protect investors). According to the list proposed by Ketz (2003), 225 cases of financial fraud of the companies listed on the NYSE were registered in 2002 and 125 cases in 2001.

Depending on the activity field, from the 78 companies that were analysed, 50% of them are from the industrial field, 12.8% from the field of trade and 37.2% from the field of services. In order to validate the work hypothesis a series of variables were proposed for the study: $AF/GP$ (Audit Fees/ Gross Profit * 1,000); $NAF/GP$ (Non-Audit Fees/ Gross Profit * 1,000); $NAF/AF$ (Non-Audit Fees/ Audit Fees * 100).

The data afferent to this variables have been taken from the financial statements of the analysed companies that were registered in the EDGAR (Electronic Data-Gathering, Analysis, and Retrieval System) database of the SEC (Securities and Exchange Commission).

4.2. Data analysis methods

In order to obtain the research results, the logistic regression analysis (LogRA) was used, based on the general linearized models. For $H_1$ and $H_2$, the application of LogRA aims at the forecast of the influence of $AF/GP$, $NAF/GP$ and $NAF/AF$ on the probability of fraud emergence for the analysed sample. The general model used for
this type of regression can be described using this formula: \( L_i = \ln\left[p_i/(1-p_i)\right] = \beta_0 + \beta_1 AF/GP + \beta_2 NAF/GP + \beta_3 NAF/AF + \varepsilon_i \), where \( \beta_{i=0}^{3} \) represent the coefficients of the models, \( p_i \) represent the probability of fraud development, and \( \varepsilon \), the residual variable.

5. Results and discussions

The application of the LogRA on the studied sample also allows the determination of some descriptive statistics, for the considered variables, on the activity field.

Table 1. Descriptive statistics of the variables associated to the audit and non-audit fees

<table>
<thead>
<tr>
<th>Variables</th>
<th>Activity Field</th>
<th>2001 Frauded</th>
<th>2001 Unfrauded</th>
<th>2002 Frauded</th>
</tr>
</thead>
<tbody>
<tr>
<td>AF/GP (% )</td>
<td>Industry</td>
<td>6.37</td>
<td>7.80</td>
<td>13.55</td>
</tr>
<tr>
<td></td>
<td>Commerce</td>
<td>86.05</td>
<td>80.46</td>
<td>12.31</td>
</tr>
<tr>
<td></td>
<td>Services</td>
<td>-11.22</td>
<td>19.99</td>
<td>1.29</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>8.74</strong></td>
<td><strong>85.26</strong></td>
<td><strong>9.07</strong></td>
</tr>
<tr>
<td>AF/GP (% )</td>
<td>Industry</td>
<td>1.21</td>
<td>4.53</td>
<td>13.31</td>
</tr>
<tr>
<td></td>
<td>Commerce</td>
<td>46.81</td>
<td>37.07</td>
<td>17.75</td>
</tr>
<tr>
<td></td>
<td>Services</td>
<td>-11.22</td>
<td>19.99</td>
<td>-0.33</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>0.39</strong></td>
<td><strong>60.80</strong></td>
<td><strong>4.87</strong></td>
</tr>
<tr>
<td>NAF/GP (% )</td>
<td>Industry</td>
<td>143.17</td>
<td>30.65</td>
<td>149.35</td>
</tr>
<tr>
<td>NAF/GP (% )</td>
<td>Commerce</td>
<td>74.43</td>
<td>37.30</td>
<td>66.19</td>
</tr>
<tr>
<td>NAF/GP (% )</td>
<td>Services</td>
<td>79.07</td>
<td>19.91</td>
<td>95.81</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>109.04</strong></td>
<td><strong>114.46</strong></td>
<td><strong>123.19</strong></td>
</tr>
</tbody>
</table>

Based on the data in Table 1, we can notice that from all the companies frauded in 2001, the most significant audit fees reported to the gross profit were registered in the field of commerce, compared to the companies in the same field that were not frauded in 2001 but were frauded in 2002. Thus, in the case of the companies that were frauded in 2001, for a \( AF/GP \) level of 86.05% (costs of monitoring), a 46.81% level of the \( NAF/GP \) (for the non-audit activities remuneration) will comply, while for the companies not frauded yet in 2001 but frauded in 2002, the level of \( AF/GP \) is only 5.75%, and the level of the \( NAF/GP \) is 13.63%.

Also, we can notice that in both cases, companies in the field of commerce are disposed to fraud risk, even though they have registered significant cost of audit fees. The effect of a good monitoring process through audit activities was practically diminished by significant levels of non-audit fees (compared to the audit fees, \( NAF/AF_{Frauded} = 74.43\% \) iar \( NAF/AF_{Unfrauded} = 66.19\% \)). Thus, for this companies a high incidence of fraud risk was noticed, both for the exercise in 2001 and for the one in 2002. At a global level, one can notice that the companies frauded (in 2002) registered an increase of the audit fees (from la 9.07% to -9.97%) and non-audit (from 4.87% to -24.03%) compared to the gross profit, reported at the levels in 2001, but keeping an approximate percentage, which influenced in a significant way the auditor’s independence and implicitly the quality of the carried out tasks, with a direct impact on the probability of financial fraud emergence.

Concerning the influence of the audit and non-audit fees variation on the fraud risk, the estimations of the parameters of the model of logistic regression, on the scope of activity, are synthesized in Table 2.

Table 2. Parameters of the logistic regression model

<table>
<thead>
<tr>
<th>Variables</th>
<th>AF/ GP Services</th>
<th>NAF/ GP Services</th>
<th>AF/ AF Services</th>
<th>NAF/ AF Services</th>
<th>NAF/ GP Industry</th>
<th>NAF/ AF Industry</th>
<th>AF/ GP Commerce</th>
<th>NAF/ AF Commerce</th>
<th>Constant</th>
</tr>
</thead>
<tbody>
<tr>
<td>( \beta_i )</td>
<td>-0.01</td>
<td>-0.03</td>
<td>0.01</td>
<td>-0.07</td>
<td>0.05</td>
<td>-0.02</td>
<td>0.02</td>
<td>-0.02</td>
<td>0.01</td>
</tr>
<tr>
<td>( e^{\beta_i} )</td>
<td>0.99</td>
<td>0.97</td>
<td>1.01</td>
<td>0.94</td>
<td>1.05</td>
<td>0.98</td>
<td>1.02</td>
<td>0.98</td>
<td>1.01</td>
</tr>
</tbody>
</table>

According to data in Table 2, the values of the logistic regression model parameters \( (\beta_i) \) indicate the direction of the influence of the variables on the probability of fraud risk emergence, and the value of the intensity is expressed by its value in exponential \( (e^{\beta_i}) \). For the companies in the field of services, an increase in the level of audit fees (compared to the gross profit) in the exercise in 2001 has lead to an increase in the probability of risk emergence in the 2002 financial exercise. Moreover, the increase of 1% in \( AF/GP_{Services} \) in the exercise in 2001 (monitoring costs) has caused the decrease of the company vulnerability to fraud risk in the next exercise (2002) by 1%. Unlike this
companies, for the companies in the industrial field, one can notice that an increase in the non-audit fees in the 2001 exercise (quantified by the variation of 1\% of $NAF/GP_{Industry}$) caused an increase of the probability of fraud risk emergence in the same exercise by 5\%. In this case, although the increase in 2001 of the level of audit fees for the companies in the industrial field has a significant influence on the diminishing of the fraud risk emergence in the same exercise (the 1\% growth of $AF/GP_{Industry}$ lead to the decreasing of the fraud risk by 6\%), the very increase of the non-audit fees significantly contributes to the affectation of the auditor’s independence and the decrease of the carried out task quality. Therewith this leads to favoring the fraud risk emergence, provided that the increase in the non audit fees is more significant than the increase in the fees.

**Conclusions**

Based on the results, the work hypothesis were validated. Thus, the importance of the audit and non-audit fees impact on companie’s predictability on fraud risk has been emphasized. Within this context, the research highlights that more expenditures designed to monitoring the managers’ activity, by using financial audit fees, lead not only to a truthful company image reporting, but also to preventing the fraud risk emergence both in the current and future exercises.

Concomitant, the increase in the non-audit fees has a negative influence on the auditor’s independence. In this case, expressing a favourable opinion for the managers (the ones in charge of administration) is conditioned by the maintenance of the contractual relations in carrying out non-audit services and implicitly their remuneration. Thus, auditor’s affection may lead to the emergence of significant misrepresentations in the financial situations, also caused by financial fraud.

Future trends of the research aim to the analysis of the causality relationships established at the level of audit and non-audit fees, with a significant impact on the fraud risk.

**References**


