ASSOCIATION BETWEEN CORPORATE GOVERNANCE AND FRAUD DETECTION: EVIDENCE FROM BORSA ISTANBUL

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ABSTRACT

Purpose- Corporate Governance establishes valuable pillars in order to guard shareholders’ interests by the use of firm governance devices. It is evidently a philosophy rather than a palliative solution. However, while there is some evidence to prove that corporate governance enhances corporate performance and fraud detection; such hypotheses has not been tested within Borsa Istanbul. The aim of this paper is to make an attempt to investigate whether there is an association between corporate governance practices and detecting fraud.

Methodology- A logistics regression model is constructed with non-financial data. The analysis contains categorical dependent data which needs a binary response model. 134 firms from manufacturing industry of Borsa Istanbul construct the data set.

Findings- No evidence found about the impacts on selected corporate governance activities on the risk of financial statement frauds.

Conclusion- Although it was assumed that corporate governance applications have an effect to lessen the manipulations on financials at the beginning of the study, test results are not sufficient to prove the relationship. Nevertheless, existence of such practices are good messages of companies about their attitudes toward fraud.

Keywords: Corporate governance, Fraud, Borsa Istanbul, Corporate governance index
JEL Codes: M14, M40, M42

1. INTRODUCTION

Corporate governance is defined as “a set of mechanisms through which outside investors protect themselves against expropriation by the insiders” (LaPorta, Lopez-De-Silanes, and Shleifer, 1999). In 1992 Cadbury Code, Sir Adrian Cadbury stated, “Corporate governance is holding the balance between economic and social goals and between individual and communal goals.” The purpose of this philosophy is to align the interests of individuals, corporations, and the society on an enhanced ground. One of the main incentives is to discourage fraud and mismanagement. However, some firms are structured to emphasize the board of directors’ ability to monitor and control management while other firms are not (Dorata and Petra, 2011). The introduction of other stakeholders raises the question of where exactly the shareholders’ interests rank in terms of directors’ priorities (Handley-Schachler et al., 2007). In 1996, Shleifer and Vishny conducted a survey about theoretical structure on corporate governance. They conclude that U.K. and U.S. have governance systems characterized by strong legal protection for investors. They state that all successful governance models are characterized by protecting the investors efficiently. Corporate governance relies more in large investors and banks to monitor managers in Continental Europe and Japan. Legal protection for investors is weaker (Bouheni, Ammi, and Levy, 2016). Although there is some common ground, philosophy of corporate governance varies from country to country due to the national conditions.

Farber (2005) conducted research on corporate governance and stock price performances on fraud-detected firms. 87 firms that have fraud and manipulating activities on their financial statements were included in the study. They resulted that fraud detected firms have poor governance, and have few proportionate of outside board members. They have less Audit Committee meetings and fewer financial experts on that committee. A smaller percentage of the fraud-detected firms are audited by the Big 4 audit firms, and a higher percentage of CEOs who are also chairmen of the board of directors are observed.
compared to other firms within the sampling period (Xue, 2008). After improving their governance within three years, they achieved similar corporate governance characteristics as the control firms. Additionally, investors appreciate corporate governance improvements because fraud detected firms that made changes achieved better stock performance. Moreover, Kaya and Aslan (2013) state that there is an association between companies that are compliant with corporate governance and corporate performance.

Gillian and Starks examined the relationship between corporate governance and ownership structure in 2003, and they found that institutional investors are more powerful. Brown and Caylor (2004) stated in their study that better governed firms are more profitable, less risky, more valuable, and pay out more of their cash to shareholders compared to other firms.

After corporate scandals and collapses, Accounting Industry Reform Act 2002 passed the Sarbanes-Oxley (SOX) Act in US. Companies registered on the US Securities and Exchange Commission (SEC) are subject to SOX Act. Ceteris paribus, SOX has had substantially positive impact on establishing a more transparent reporting environment due to numerous improvements. Since the establishment of SOX, audit committees do hire auditors, companies must disclose off-balance sheet transactions and must have codes of ethics, financial expert must reside on audit committee, whistle blower are better protected, higher penalties for white-collar crime have been put in action, and CEOs and CFOs must now certify financial reports (Donaldson, 2007). The Organization for Economic Co-operation and Development (OECD) also works on the issue, and OECD principles of corporate governance were published in 1991 and updated in 2004. According to OECD, there is no single corporate governance model that can be applied to all countries; there are main principles that state common characteristics essential for good governance. OECD principles are organized under six headings which are ensuring the basis for an effective corporate governance framework, the rights of shareholders, equitable treatment of all shareholders, the role of shareholders in corporate governance, disclosure and the responsibility of the board of directors.

Capital Markets Board of Turkey issued Corporate Governance Principles of Turkey in 2003. Principles of Turkey consist of four sub-sections; shareholders, disclosure and transparency, stakeholders and board of directors sections (CMB, 2003a).

In the literature review part of this paper, corporate governance principles are discussed in details with the concepts of financial fraud and corporate governance index. Data selection process is defined; the methodology and the hypotheses are explained in the following part. The paper is finalized with the discussions about the findings, and conclusion part includes an overview about the limitations of this study in Turkey.

2. LITERATURE REVIEW

2.1. Corporate Governance Index

BIST Corporate Governance Index (XKURY) includes the companies that apply Corporate Governance Principles. This index aims to measure the price and return performances of the companies on Borsa Istanbul (except companies in Watchlist Companies Market and List C). Corporate governance ratings should be minimum 7 over 10 as a whole and minimum of 6.5 for each main section. The rating institutions that are in the list of CMB rating agencies determine the corporate governance rating based on their assessment of the company’s compliance with the corporate governance principles (Borsa Istanbul, February 2016).

Corporate Governance Index was first calculated on 31.08.2007 with the initial value of 48,082.17. Ratings of companies included in BIST Corporate Governance Index are announced under the company disclosures part on the Public Disclosure Platform (PDP).

2.2. Corporate Governance Principles

There are four main principles of corporate governance. Investors, and all other stakeholders can use Corporate Governance Index and Public Disclosure Platform as the main source for measuring the key figures.

Equality establishes the equal treatment of share and stakeholders by the management in all activities of the company. The aim at equality concept is to prevent all possible conflicts of interest (CMB, 2003a). Transparency aims to disclose financial and non-financial information of the company to the public in a timely, accurate, complete, clear, construable manner. The information should be able to reach at low cost easily. Transparency does not mean announcing the trade secrets of the company with undisclosed information (CMB, 2003a). Accountability is accounting the company as a corporate body to the shareholders. This is the obligation of the board of directors. The company should be controlled effectively, and the Board should bear the accounting responsibility for both company itself and its shareholders (Akdemir, 2010). Responsibility defines the conformity of all operations performed on behalf of the company with the legislation, articles of association and in-house regulations together with the audit (CMB, 2003a).
2.3. Misstatements in Financials, and Fraud

Association of Certified Fraud Examiners (ACFE) defines fraud from the Black’s Law Dictionary (2004) as, “A knowing misrepresentation of the truth or concealment of a material fact to induce another to act to his or her detriment”. Thus, fraud includes any intentional or deliberate act to deprive another of property or money by guile, deception, or other unfair means.

Firms can make some intentional mistakes when preparing their financial statements in order to show their performance more successful. The aims of fraudulent financial statements can be listed as:

- To show the firm (more) profitable.
- To show the firm is in less debt, or debt is properly managed.
- To show the firm’s working capital is feasible for operating successfully.
- To show the firm’s asset management is successful.
- To postpone the bankruptcy of the company and/or show as if it is not in failure.
- To attract stakeholders (banks and/or credit institutions for credibility, shareholders for equity continuity, governmental institutions for reliability).

3. DATA AND METHODOLOGY

The aim at this study is to set a logistics regression model to detect the fraudulent financial statement risk of Borsa Istanbul firms with variables of corporate governance implications. The main purpose is to investigate whether corporate governance practices (applied or not applied by firms) have an effect on the fraudulent representations.

The relationship between dependent and independent variables is indicated with logistics regression, because the analysis contains categorical dependent data which needs a binary response model (Wooldridge, 2012). The logistic function is represented as below;

\[
\text{Prob} (y = 1) = \frac{\exp(b_1 x_1 + b_2 x_2 + \cdots + b_n x_n)}{1 + \exp(b_1 x_1 + b_2 x_2 + \cdots + b_n x_n)}
\]

The dependent variable of the model is selected as “Fraudulent Financial Statement” and is displayed with “FFS”. This representation is same as in Spathis’ studies (2002). The aim is to find the prediction probability of fraudulent financial statement risk via a logistics regression constructed with non-financial variables. FFS is a categorical dependent, and have values of “1” for fraudulent financial statement observations, and “0” for non-fraudulent financial statement observations.

Another approach for interpreting the variable can be “1” for the firms that have high risk of fraudulent activities, and “0” for the firms that have no or less risk of fraud in their financials.

Independent variables of this study are selected after investigation of prior studies, also considering Turkish business environment and corporate governance applications. According to literature review, 19 out of 31 studies (61%) worked with logit analysis as algorithm of their model.

The variables about firms’ corporate governance practice:

**Ethics Code (Code of Ethics):** Corporate governance principles require employees and professionals to be act in ethical behaviors. Code of Ethics should be announced in the organization in order to guide people about their business manners. All personnel should also be aware towards the codes, and be responsible to communicate and report non-compliance with Code of Ethics, and illegal actions (Mandaci, and Kahyaoglu, 2012). Policy violations damage and hazard the corporate governance practices of the firm. Firms in this study are classified into two groups for this variable; “0” for the firms that have no Code of Ethics; and “1” for the firms that have.

**Existence in corporate governance index:** The purpose of BIST Corporate Governance Index (XKURY) is to measure the price and return performances of companies in Borsa Istanbul. This index requires that all companies included applying the corporate governance principles (transparency, equality, accountability, and responsibility) properly, and gives ratings to them based on their application performance. The expectation is that the firms listed in the corporate governance index are applying the corporate governance principles more effectively, so fraudulent financial statement risk decreases compared to firms that are not listed in the index. Firms in this study are classified into two groups for this variable; “0” for the firms that do not be listed in BIST Corporate Governance Index (XKURY); and “1” for the firms that are listed.

**Independent auditor rotation:** Carcello and Neal (2000) suggest that hiring external auditors who are more independent is associated with the audit committee’s effectiveness. Auditors with greater industry expertise are preferred by the firms to achieve more efficient audit functions (Abbott and Parker 2000). In the mandatory type of independent auditor rotation, calculations are made considering ten (10) years retrospectively, and if an auditor audits a firm seven (7) years in total, rotation is made for three years and gives a break for the auditing relationship between parties according to Turkish Commercial Law, no. 6102. Firms can also change their independent auditors discretionally. There are many reasons to cancel,
or not to renew the contract with the audit company and/or the auditor. A dissatisfaction of service received, expertise capabilities, and financial issues are some example reasons. On the other hand, a firm publishing falsified financial statements, or committing a fraud tends to change its auditor in order to benefit from new relationship (The new auditor is in the recognition step of the audit commitment, and the firm). They do not want to generate close and long-term relations between auditors. Such kind of firms has higher possibility of switching the auditors frequently. Thus, independent auditor rotation can be a red flag for fraudulent activity. The expectation is that a company doing audit contracts rotation, bears more risk of fraudulent financial statement. Firms in this study are classified into two groups for this variable; “0” for the firms that have no independent auditor rotation for the stated year; and “1” for the firms that have the rotation. Table 1 summarizes the variable characteristics as below:

<table>
<thead>
<tr>
<th>Type of data</th>
<th>variable</th>
<th>acronyms</th>
<th>measurement</th>
<th>dependent / independent variable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-financial</td>
<td>fraudulent financial statements</td>
<td>FFS</td>
<td>categorical</td>
<td>dependent variable</td>
</tr>
<tr>
<td>Non-financial</td>
<td>ethics code</td>
<td>EC</td>
<td>categorical</td>
<td>independent variable</td>
</tr>
<tr>
<td>Non-financial</td>
<td>existence in corporate governance index</td>
<td>ECGI</td>
<td>categorical</td>
<td>independent variable</td>
</tr>
<tr>
<td>Non-financial</td>
<td>independent auditor rotation</td>
<td>IAR</td>
<td>categorical</td>
<td>independent variable</td>
</tr>
</tbody>
</table>

The research was conducted on the publicly available stock companies that are listed in Borsa Istanbul (formerly known as Istanbul Stock Exchange) for five years period from 2010 to 2014. All other industries except manufacturing industry have insufficient number of firms for a study of regression analysis. The number of firms available for sampling was 134 from manufacturing industry. With five years period, we obtained 670 (134 x 5) observations set.

In data collection process, relevant financial information was obtained from financial statements of the companies that are announced at “Public Disclosure Platform”. Corporate Governance Compliance Reports and the company websites were other sources for investigating the variable of “ethics code” existence. Moreover, weekly Capital Markets Board Bulletins was reviewed for fraud announcements, tax penalties news, and other related issues about firms.

In the first step for classifying the firms into two, (“1” for the companies that have a risk of publishing fraudulent financial statement, and “0” for the companies that have no/less risk of fraud in their financials) all “material event disclosures” about the companies in the sample set have been read and documented from Public Disclosure Platform. The auditors’ reports and their decisions were other sources in the classification.

Every company was classified based on following criteria;

- Is there a fraud announcement made by the company or by a regulator?
- Is there an error announcement of the company about their financial statements?
- Does the company have a penalty for this period?
- Is there any court proceeding, and if yes, what is the content?
- Is there any material event disclosure requested by Borsa Istanbul about stock price movements?
- Are there any important events indicating fraud or misappropriation?

The classification resulted that 71 firms out of 134 (52.99%) were classified as “1” which means bearing the risk of publishing fraudulent financial statements, and 63 firms out of 134 (47.01%) were classified as “0” which means there is no sign for a fraudulent activity based on determined criteria.

3.1. Hypotheses Development

Corporate governance index is the measure of the four main principles; disclosure and transparency, equality, responsibility, and accountability. Independency is also an important milestone for corporate governance. Code of Ethics and the rotation of independent auditors is the requirement of corporate governance practices. The purpose is to investigate effect of the application of these basic principles on prevention from fraudulent financial statements.

The expectation is that the application of corporate governance principles decreases the risk of fraud in companies, thus the risk of fraudulent financial statements.

Hypothesis: Corporate governance practices and FFS have a negative relationship.

- Hypothesis a: Existence of an ethics code and FFS have a negative relationship.
- Hypothesis b: Existence in corporate governance index and FFS has a negative relationship.
Hypothesis c: Increase in independent auditor rotation is a signal for the possibility of fraud in the financial statements.

4. FINDINGS AND DISCUSSIONS

EViews 9 SV package is the software used for the calculations of this study. A logistics regression was conducted with 670 observations from 134 companies.

\[
\text{Prob (FFS = 1)} = \Pi ((b_0 + b_1 (EC) + b_2 (ECGI) + b_3 (IAR))) \tag{2}
\]

Where:
- FFS = False Financial Statements
- \(\Pi\) = cumulative distribution fit of a logistic random variable
- EC = Ethics code
- ECGI = Existence in corporate governance index
- IAR = Independent auditor rotation

In this model, independent variables EC, ECGI, and IAR are dummy variables, which were coded as “1” for the existence cases, and “0” for the reverse. Table 2 summarizes the descriptive statistics of the variables:

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>Median</th>
<th>Std.Dev.</th>
<th>Skewness</th>
<th>Kurtosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>FRAUD</td>
<td>0.53</td>
<td>1</td>
<td>0.5</td>
<td>-0.12</td>
<td>1.01</td>
</tr>
<tr>
<td>EC</td>
<td>0.75</td>
<td>1</td>
<td>0.43</td>
<td>-1.18</td>
<td>2.39</td>
</tr>
<tr>
<td>ECGI</td>
<td>0.12</td>
<td>0</td>
<td>0.32</td>
<td>2.35</td>
<td>6.51</td>
</tr>
<tr>
<td>IAR</td>
<td>0.19</td>
<td>0</td>
<td>0.4</td>
<td>1.55</td>
<td>3.39</td>
</tr>
</tbody>
</table>

Table 3 reports the results for the stepwise logistic regression for model.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>z-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>EC</td>
<td>-0.265</td>
<td>0.209</td>
<td>-1.265</td>
<td>0.206</td>
</tr>
<tr>
<td>ECGI</td>
<td>-0.01</td>
<td>0.247</td>
<td>-0.039</td>
<td>0.969</td>
</tr>
<tr>
<td>IAR</td>
<td>0.168</td>
<td>0.213</td>
<td>0.791</td>
<td>0.429</td>
</tr>
<tr>
<td>C</td>
<td>1.52</td>
<td>0.373</td>
<td>4.073</td>
<td>0</td>
</tr>
</tbody>
</table>

McFadden R-squared = 0.092
S.D. dependent var = 0.5
Mean dependent var = 0.529
LR statistic = 85.247
Prob(LR statistic) = 0

The overall test result of the relationship between fraud and corporate governance necessities was significant although none of the independent variables were resulted significant with p values > 0.05 at 95% confidence level.

In linear regression, adjusted R-squared gives the researchers an opinion about the explanatory power of the model. It indicates how well data fits a line with R-squared. However, it cannot determine whether the predictions are prejudiced and coefficients are biased (Frost, 2013). In logistic regression, there is no linear relationship between dependent and independent variables, so revised version of R-squared is calculated instead of basic adjusted R-squared. Such R-squared ratios are generally called “pseudo-R squared”. Cox and Snell R Squared (1989), Nagelkerke R Squared (1991), McFadden R-squared (1974), and Tjur (2009) are the ones that used in binary regression models (Allison, 2013). As a rule of thumb, R-Squared results are expected to be higher. Although, prediction ability of the model is measured with R-squared percentages.
in linear regressions, pseudo-R squared results are not primary indicators in logistics regression interpretations. Eviews package calculates McFadden R-squared for logistic regression models as pseudo-R squared. In our test results, a low percentage (0.092%) is calculated. This means the explanatory power of the model is low. However, this result cannot demonstrate that the model has no prediction ability, since R squared percentage is not a critical indicator in logistic regression.

In the light of these findings, hypotheses can be evaluated as shown in Table 4. Independent variables ethics code (EC), existence in corporate governance index (ECGI), and independent auditor rotation (IAR) were tested in order to find the effect of corporate governance practices on fraudulent financial statements, and resulted as insignificant.

Table 4: Summary of Findings

<table>
<thead>
<tr>
<th>Main Hypothesis</th>
<th>Sub-Hypothesis</th>
<th>Independent Variables Used for Testing</th>
<th>Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>H: Corporate governance practices and FFS have a negative relationship.</td>
<td>Ha: Existence of an ethics code and FFS have a negative relationship.</td>
<td>Ethics code</td>
<td>Not supported</td>
</tr>
<tr>
<td>H: Corporate governance practices and FFS have a negative relationship.</td>
<td>Hb: Existence in corporate governance index and FFS has a negative relationship.</td>
<td>Existence in corporate governance index</td>
<td>Not supported</td>
</tr>
<tr>
<td>H: Corporate governance practices and FFS have a negative relationship.</td>
<td>Hc: Increase in independent auditor rotation is a signal for the possibility of fraud in the financial statements.</td>
<td>Independent auditor rotation</td>
<td>Not supported</td>
</tr>
</tbody>
</table>

To summarize, there is no evidence found about the impacts on selected corporate governance activities on the risk of fraudulent financial statement frauds.

5. CONCLUSION

This study focuses on the association between corporate governance and fraud. In the agenda of Turkish firms, corporate governance receives a great deal of importance. Turkish government places special emphasis on these issues, and takes actions to regulate the practice of corporate governance practices via introducing new laws. Turkish firms are mostly family-owned companies, and the most important problem they face is sustainability of the organizations from generation to generation. Properly applied corporate governance principles lead to a sustainable and successful business life.

The time interval selected for the study is between 2010 and 2014. 134 companies and 670 observations are included in this 5-year period. Firm selection, classification and data collection processes were followed fussily and in detail.

After the classification step, 71 firms out of 134 (52.99%) were classified as “1”, which means bearing the risk of publishing fraudulent financial statements, and 63 firms out of 134 (47.01%) were classified as “0”, which means there is no sign of a fraudulent activity based on determined criteria.

Anticipation prior to the conducted study was to discover relationship between corporate governance practices and fraud. It was assumed that corporate governance practices have an effect to lessen manipulation on financials. If so, the existence of these practices would be the indicators of less risk in publishing fraudulent financial statements. However, findings are not sufficient to prove the relationship. Nevertheless, the existence of code of ethics or being listed in corporate governance index is a good message about the companies’ attitude toward fraud.

Especially in Turkey, total awareness on fraud and its consequences are relatively new notions with their different dynamics compared to other countries. Due to cultural and organic structure of Turkey, fraud detection is a tough job. Turn to prosecution when detecting a fraud or manipulation is an out of favor action according to Turkish custom. Thus, many fraud cases are accepted as undiscovered, and are not announced to public. As a Type I error, a company involved in fraudulent action could be classified as non-fraud in data selection process (Kirkos et al., 2007).

Years from 2010 to 2014 are selected in order to minimize the missing data risk in this study. Further research can investigate different and more recent time intervals. The expectation is that the corporate governance principles will settle in time, and prospective benefits will be more visible. Thus, new studies with same or different samples with the data after 2014 can be conducted in order to observe the improvement, and/or comparing the results with this study.

As a limitation, only the manufacturing industry has been selected form Borsa Istanbul companies in this study. Companies operating in other industries within BIST or Turkish companies that are not traded in stock exchange can be selected for further studies.
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