

# Is Corporate Governance A Determinant of Auditor Choice?-Evidence From Turkey

*Kurumsal Yönetim Denetçi Seçiminde Belirleyici midir?-Türkiye'den Bulgular*

Yasemin ZENGİN KARAİBRAHİMOĞLU<sup>1</sup>

## ABSTRACT

External independent audit is an important component of strong corporate governance. The choice of independent external auditor is determined by several different factors. Besides all firm-specific factors, corporate governance might be a determinant of external auditor choice. The relation between auditor choice and corporate governance varies in accordance with the "substitution or complementary effect". Firms may prefer to demand less effective and low quality audit and substitute the quality of audit services by a strong corporate governance structure. Alternatively, firms may demand a high quality audit in order to complement and support firms' corporate governance structure. Therefore it is important to understand how a strong corporate governance structure is associated with auditor choice to reveal the effect of each corporate governance mechanisms on Big-4 and industry-specialist auditor choice.

The main aim of this study is to investigate the association between corporate governance and auditor choice by using a sample of 805 firm-year observations from Istanbul Stock Exchange (ISE) between the years 2005-2009. Overall findings show that, firms' auditor choice in terms of Big-4 and audit firm industry specialization is affected by the firm-level corporate governance mechanisms of firms, particularly, board of directors' composition and ownership structure.

**Keywords:** Auditor choice, corporate governance, Turkey

## ÖZET

Bağımsız dış denetim, güçlü kurumsal yönetimin önemli bir bileşenidir. Bağımsız dış denetçi seçimi birçok farklı etken tarafından belirlenir. Firmaya özgü faktörlerin yanı sıra, kurumsal yönetim, dış denetçi seçiminin bir belirleyicisi olabilir. Denetçi seçimi ve kurumsal yönetim arasındaki ilişki "ikame veya tamamlayıcı etkisi" ne göre değişiklik göstermektedir. Firmalar, bir taraftan güçlü bir kurumsal yönetim yapısı ile denetim hizmetlerinin kalitesini ikame ederek, daha az etkili ve düşük kalitede denetimi talep etmeyi tercih edebilirken, diğer taraftan kurumsal yönetim yapısını tamamlamak ve desteklemek için yüksek kaliteli denetim de talep edebilirler. Bu nedenle, kurumsal yönetim mekanizmalarının dört büyük denetim firması ve uzman denetçi seçimi üzerindeki etkisini ortaya çıkarmak için, güçlü bir kurumsal yönetim yapısının denetçi seçimi ile ilişkisini anlamak önem arz etmektedir.

Bu çalışmanın amacı, İstanbul Menkul Kıymetler Borsasında (İMKB'de) işlem gören firmaların 2005-2009 yılları arasındaki 805 firma-yıl verisi kullanılarak, kurumsal yönetim ve denetçi seçimi arasındaki ilişkiyi araştırmaktır. Genel bulgular dört büyük denetim firması ve uzman denetçi seçiminin, özellikle yönetim kurulu ve ortaklık yapısı gibi, içsel kurumsal yönetim mekanizmalarından etkilendiğini ortaya koymaktadır.

**Anahtar Kelimeler:** Denetçi seçimi, kurumsal yönetim, Türkiye

## 1. INTRODUCTION

External independent audit and corporate governance are two important factors that have significant influence on financial reporting quality and accuracy of the information disclosed in those reports. The effectiveness of both the external independent audit and corporate governance depends on several firm-specific factors. The ability of corporate governance mechanisms to fulfill controlling, monitoring and communicating role is highly associated with the ownership structure and the composition and characteristics of board of directors. Similarly, the ability of external independent audit to be effective in financial reporting is highly associated with its quality. Recent regulations in terms of auditing standards, corporate

governance principles, financial reporting standards and the legal enforcements in capital markets support the theory and confirm the importance of auditing and corporate governance in financial reporting (e.g. Cadbury, 1992 in UK; Hampel, 1998 in EU; Blue Ribbon, 1998; SOX, 2002 in US; CMB, 2003).

Firms face with a trade-off in the auditor choice decision (Lin and Liu, 2009). In theory (due to several different incentives; substitution, insurance needs, signaling), it is assumed that there is an association between audit quality and various governance mechanisms (Yeoh and Jubb, 2002). Mainly, there is a substitution or complementary effect of firm-level corporate governance mechanisms on the choice of external independent auditor. A firm may prefer to demand less effective and low quality audit and substitute the quality of audit services

<sup>1</sup> Assist. Prof., İzmir University of Economics, Faculty of Economics and Administrative Sciences, Department of Business Administration, yasemin.zengin@ieu.edu.tr

by a strong corporate governance structure. Alternatively, firms may demand a high quality audit in order to complement and support firms' corporate governance structure. Thus, it is important to understand how a strong corporate governance structure is associated with auditor choice.

The aim of this study is to understand the magnitude and the direction of the relation between firm-level corporate governance mechanisms and audit quality, in terms of auditor choice in Turkey.

Turkey is a developing country with an emerging capital market. The overall governance structures of Turkish listed firms are characterized by relatively weak investor protection and minority rights (Durukan et al., 2009), family controlled ownership with complex-pyramidal structure where family members are CEOs, boards members or top managers (Demirağ and Serter, 2003) and concentrated ownership (Ararat et al., 2010; Hacimahmutoğlu, 2007). In order to enhance the corporate governance in listed companies, in 2003, the capital markets board of Turkey (CMB) issued Corporate Governance Principles of Turkey based on Corporate Governance Principles of OECD employing a "comply or explain" approach and effective starting from 2005, the CMB required all listed firms to present a Corporate Governance Compliance Report in their annual financial reports, explaining their level of compliance and any reason for non-compliance in accordance with the guidelines. Also, in order to assure the accuracy of the financial reports, in 2006, the CMB issued The Communiqué on Independent Auditing Standards in Capital Markets (Serial: X, No: 22) which defines the legal requirements and the independence of auditors, regulates the quality of auditing services by describing their scope, identifies the auditor tenure and introduces auditing standards in line with International Standards on Auditing (ISAs). According to the Communiqué, listed firms in the ISE are required to have independent external audit for the year-end financial reports. Subsequently, in order to improve the financial reporting, auditing and corporate governance, the new Turkish Commercial Code has been issued, effective from July, 1, 2012.

In Turkey, agency problems are more likely to occur between major or family shareholders and minority shareholders. Therefore, corporate governance external independent audit gains more attention in such a business environment to reduce the information asymmetry between major and

minor shareholders and increase the transparency of the firms. Also, Turkey is described as a country with lack of equity culture (IIF, 2005). So, in order to increase public trust to capital markets, independent external audit and strong governance structure is important. Thus, the recent regulations to develop capital markets and the business environment make Turkey an ideal environment to examine the association between corporate governance structure and the auditor choice.

Overall findings of this study suggest that firms' auditor choice is affected by the firm-level corporate governance structure of firms, mainly, board of directors' composition and ownership structure.

The literature on the role of corporate governance and auditor choice is very limited. This study provides empirical findings on how firm-level governance structure affects the auditor choice in Turkey. It is important for policy makers, managers and regulators, especially in the emerging markets to examine whether there is a substitute or complementary relation between firm-level corporate governance structure and auditor choice. It contributes to the limited literature on this issue and reveals the magnitude and direction of the relation between corporate governance and auditor choice.

## **2. LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT**

Corporate governance defined by LaPorta et al. (2000) as "a set of mechanisms through which outside investors protect themselves against expropriation by the insiders" and aims efficient use of companies' assets in the interests of the stakeholders and protects investors from opportunistic behaviour (Gillan, 2006). It surrounds all the provisions, instruments and mechanisms intended to monitor the activities of management and align the management incentives with all capital lenders (García-Osma, 2006). Therefore, any internal and external mechanism that plays a role in mitigating the agency problem and increases the efficiency in the use of organizations' assets, builds corporate governance.

A strong corporate governance structure requires an effective board of directors and ownership structure. In literature, it is theoretically proposed that strong corporate governance is associated with an independent well functioning board of directors, representing all shareholders with optimum number experienced and diversified members and an

effective audit committee free of CEO influence, non-occupation of CEO and chair positions by the same person and diversified ownership structure with institutional shareholders. A board with independent members is objective in decision making and it improves the monitoring and controlling activities over management (CMB, 2003). Also, the board is less likely to be effective and functional in financial reporting oversight due to the coordination and communication problems among board members in the large boards. Thus, a small board may be more effective and functional in performing its duties (Jensen, 1993). Occupation of both CEO and the chairman positions by the same person leads to a power concentration which is likely to decrease the controlling and monitoring ability of the board over management's activities. Therefore, in order to avoid the power concentration and balance between management and control, for a strong governance structure, the roles of the chairman and CEO should be separated (Jensen, 1993). Audit committee is responsible for the coordination between internal and external audit and assuring the independence of external auditors (McMullen and Raghunandan, 1996). For that reason, the existence and size of the audit committee is vital to effectively fulfill its coordination and oversight roles. Institutional investors are more sophisticated and experienced and also, they have timely access to relevant information (Balsam et al., 2002) they are more effective in controlling and monitoring of managements' activities than individual investors (Siregar and Utama, 2008). A high ownership concentration might lead controlling shareholder(s) to have higher incentives for opportunistic behaviour.

External audit assures all users of accounting information about the quality, accuracy and reliability of information in financial reports It plays an important role in reducing information asymmetry and mitigating agency problems between management and owners and as well as between minor and major shareholders (Jensen and Meckling, 1976; Willenborg, 1999). From the information hypothesis and agency theory, for the accuracy of the information presented in financial reports, an independent external audit is demanded. Any improvement in the auditing quality would increase the transparency of firms and help all users to have more reliable information. Therefore, the external independent audit plays a crucial role for strong corporate governance (Watts and Zimmerman, 1986).

Although, independent external audit is considered as an external corporate governance mechanism and an essential component of strong corporate governance, in literature, studies concerning the relation between external audit and firm-level corporate governance mechanisms are limited.

The relation between audit quality and corporate governance is two folded and varies in accordance with the "*substitution or complementary effect*". The substitution effect suggests that corporate governance mechanisms are interchangeable amongst each other (Yeoh and Jubb, 2002). A strong corporate governance structure might substitute higher quality external audit and demand less quality in the auditor choice (Williamson, 1983). On the other hand, in accordance with the complementary effect, strong corporate governance might demand more external audit quality to assure the quality of financial reporting because of the insurance and signaling needs of the firms. According to the insurance hypothesis, firms may prefer to be audited by more qualified auditors in any case (Wallace, 2004). This need for insurance drive firms to demand big auditors (DeAngelo, 1981) to provide insurance to the investors about fair and accurate presentation of the information in financial reports and assurance by a publicly trustable audit firm. Also, auditor choice and demand for high quality audit comes from the signaling effect based on agency theory that argues that managers and/or directors impart to the market additional information about their company and their own behavior (Yeoh and Jubb, 2002). Thus, based on insurance and signaling hypothesis, there is a complementary relation between audit quality and corporate governance structure and firms are more likely to demand high quality audit to assure and signal investors about the quality of the financial reports even they have a strong corporate governance structure.

Anderson et al. (1993) examined the relation between three monitoring mechanisms used for corporate governance; external auditing, internal auditing, and directorships and found that the monitoring role of board of directors is substitutable with internal audit and external audit quality. On the other hand, Yeoh and Jubb (2002) examined the association between audit quality and corporate governance and the results of his study showed that good internal governance will never eliminate the demand for quality auditors. Similarly, Abbot et al. (2007) studied the demand for high audit quality by

audit committee and found that firms with effective audit committees demand higher audit quality, which is measured as the percentage of hours and the proportion of various non-audit services provided by the external auditor of firms. Mayoral and Segura (2008) analyzed the factors driving auditor choice and found that the auditor choice in terms of audit quality is not only determined by the need to mitigate agency problems and avoid associated costs, but also in terms of the corporate governance mechanisms. Their findings provide significant impact of the ownership concentration, the independence and activity of the board of directors and audit committee and the size of audit committee on the auditor choice. Lin and Liu (2009) examined the impact of corporate governance on the auditor choice and found that firms with larger controlling shareholders, with smaller size of supervisory board, or in which CEO and board of directors' chairman are the same person are less likely to hire a Top10 (high-quality) auditor. Adyemi and Fagbemi (2010) studied the demand for audit quality for firms with independent board of directors and report that non-executive directors' ownership is significantly associated with high audit quality.

Turkey is an emerging economy with developing capital markets. In order to attract more equity investors to the capital markets, firms and regulators go at assuring the reliability of accounting information and enhancing firms' accountability and transparency in financial reporting. Thus, following substitution effect, in order to gain public trust, in Turkey, it is expected that firms with weak corporate governance structure demands higher quality audit. In other words, firms with less independent board of directors, larger board and audit committee size, CEO duality, non-institutional owners and high ownership concentration are more likely to demand higher audit quality. In other words, in Turkey, strong corporate governance structure substitutes audit quality.

The quality of audit services is highly associated with internal and external factors, auditors' characteristics (e.g. experience, competence, ethical conduct etc.) auditors' independence (dependence on clients, the competition in the market etc.), the regulatory environment (mandatory rotations, audit and non-audit services etc.). It is not obvious which factor is more descent in determining auditors' ability. Balsam et al. (2003) claim that the quality of auditor is "multidimensional and unobservable" and "there is no single auditor characteristic that can be used to proxy

for it". In accounting and auditing literature, several proxies are used to capture the quality association of audit services with auditor characteristic (e.g. auditor size, industry specialization, auditor tenure, and audit versus non-audit fees).

In literature, the most commonly used proxy is "auditor size" (e.g., Van Tendeloo et al. 2008; Piot and Janin, 2006; Krishnan, 2003; Vander Bauwhede et al., 2000; Becker et al., 1998). DeAngelo (1981) examines the relation between audit quality and auditors' size, theoretically and argues that, as big audit firms have more clients and total fees over the clients allocated widely, their dependency over the clients decrease. Therefore, a more independent auditor would provide higher audit quality. Similarly, Dye (1993) argues that big audit firms have a higher audit quality because their opportunity cost, in terms of losing their wealth, is higher in case of any litigation. In addition, as Big-4 auditors has reputation and they are more experienced (Krishnan, 2003) and more conservative in their opinion (Piot and Janin, 2006). Since it is presumed theoretically that Big-4 audit firms provide more qualified auditing services, based on the substitution effect, in Turkey, firms with strong corporate governance structure are less likely to demand auditing by Big-4 auditors.

*H<sub>1</sub>: As strong corporate governance structure substitutes audit quality, firms with independent board of directors, small board and audit committee size, separation of the CEO and chairman position, institutional owners and dispersed ownership are less likely to choose Big-4 auditors.*

Another proxy is "auditors' industry specialization". As auditors specialized in a given industry and have more industry specific knowledge, they are expected to be more capable of detecting misstatements relative non-specialist auditors. Therefore, they provide more effective and high quality audit (Solomon et al., 1999; DeFond et al., 2000). If industry specialization is positively associated with audit quality, it is obvious that industry specialization is more likely to result with high quality financial reporting. Schauer (2002) studies the association between industry specialization and information asymmetry and finds that firms audited by industry specialist have lower levels of information asymmetry. Since industry specialization is positively associated with audit quality, based on the substitution effect, in Turkey, it is expected that firms with a strong corporate governance structure are less likely to demand auditing by industry specialist auditors.

$H_2$ : As strong corporate governance structure substitutes audit quality, firms with independent board of directors, small board and audit committee size, separation of the CEO and chairman position, institutional owners and dispersed ownership are less likely to choose industry specialized auditors.

### 3. RESEARCH DESIGN

#### 3.1. Sample

The study uses data from non-financial firms listed in the Istanbul Stock Exchange (ISE) between the years 2005-2009 (post-IFRS period). Firms in the financial sector were excluded from the sample

because financial firms are subject to different regulations and their performance indicators have different characteristics comparing to non-financial firms. In the sample, due to the panel regression analysis and the number of the independent variables in the research model, it is presumed that econometrically, only the industries with 10 or more firms should be included. After excluding the firms with missing observations, the final sample comprises of 805 firm-year observations. Table 1 presents the sample composition.

Table 1: Sample Composition

Industry	2005	2006	2007	2008	2009	Total
Basic Metal Industries	13	13	13	13	13	65
Chemicals, Petroleum Rubber and Plastic Products	24	24	24	23	23	118
Fabricated Metal Products, Machinery and Equipment	26	26	28	27	26	133
Food, Beverage and Tobacco	20	21	22	22	22	107
Information Technology	-	-	11	11	11	33
Non-Metallic Mineral Products	26	26	26	26	26	130
Paper and Paper Products, Printing and Publishing	14	14	14	14	14	70
Textile, Wearing Apparel and Leather	31	31	30	30	27	149
TOTAL	154	155	168	166	162	805

#### 3.2. Research Model

This study uses an empirical model based on multinomial logit and panel regression analysis of Big-4 and audit firm industry specialization as

dependent variables and corporate governance variables as independent test variables.

The regression model is specified as follows;

$$AUD_{it} = \beta_0 + \beta_1 B\_IND_{it} + \beta_2 B\_SIZE_{it} + \beta_3 CEO\_D_{it} + \beta_4 ACC\_SIZE_{it} + \beta_5 INST\_OWN_{it} + \beta_6 OWN\_CNCT_{it} + \beta_7 SIZE_{it} + \beta_8 DEBT/EQUITY_{it} + \beta_9 ROA_{it} + \varepsilon_{it} \quad (1)$$

- $AUD_{it}$  = Auditor choice as  $BIG - 4_{it}$  and  $AUD\_IND\_SPEC_{it}$   
 $BIG - 4_{it}$  is dummy variable which takes the value of 1 when the firm is audited by Big-4, 0 otherwise in the period (t),  $AUD\_IND\_SPEC_{it}$  is Industry Specialization of audit firm.
- $B\_IND_{it}$  = Independence of board of directors and equal to the proportion of the number of independent directors in the board to the number of all board members in the period (t),
- $B\_SIZE$  = Board size and measured as the number of directors in the board of directors in the period (t),
- $CEO\_D_{it}$  = CEO duality and it takes the value of 1 if CEO and the chairperson positions are held by the same individual, 0 otherwise in the period (t),
- $ACC\_SIZE_{it}$  = Audit committee size and measured as the number of directors in the audit committee in the period (t),
- $INST\_OWN_{it}$  = Institutional ownership and it takes the value of 1 if the largest shareholder is an institutional or incorporated body, 0 otherwise in the period (t),
- $OWN\_CNCT_{it}$  = Ownership concentration and measured by the percentage of equity shares owned by the largest shareholder in the period (t),
- $SIZE_{it}$  = Size of the firms and measured the natural logarithm of total assets in the period (t).
- $DEBT/EQUITY_{it}$  = Leverage measured as the proportion of debt to equity in the period (t),
- $ROA_{it}$  = Return on Assets measured as the proportion of net income to total assets in the period (t).

$t =$  the event quarter,  $i =$  the firm.

### 3.3. Variable Measurement

#### 3.3.1. Corporate Governance Measure

In this study, the following firm-level corporate governance characteristics; board of directors' independence, board of directors' size, CEO duality, audit committee size, institutional ownership and ownership concentration were used.

The corporate governance data were hand-collected. Mainly, the information about board of directors, CEO and ownership structure was gathered through Company Year Books provided on ISE website. Additional information was gathered from Company News files published on ISE website, firms' Corporate Governance Principles Compliance Reports and the web site of Public Disclosure.

A board member is considered independent if the person has (i) no ownership in the firm, (ii) no previous employment in the firm, except the board membership, or in any subsidiary of it and (iii) no family tie with firms' owner. Considering the independence definition, in this study, a board member is defined as independent if the person meets all of the criteria above. Following the determination of the board members as dependent or independent, the board of directors' independence was measured as the proportion of independent directors on the board to the board size (Klein, 2002; Beasley, 1996). Board of directors' independence data was gathered through several different sources using a retrospective approach. Starting from 2009, using the information disclosed in the Corporate Governance Principles Compliance reports and on Public Disclosure Platform, the independence of the board members is applied for prior years. Measuring the board of directors' independence is complicated if it is not disclosed by firm. If the board member is disclosed as dependent in 2009, it is considered as dependent for all previous years if any. If the member is disclosed as independent, to assure this information's reliability, it is checked from different sources; firms' Corporate Governance Principles Compliance Reports, the web site of Public Disclosure Platform and Company News files. If there is no other information declaring the opposite such as previous employment in the company, family tie, shareholding, related party relations etc., the member is considered as independent.

CEO duality is the situation where the person holds both the CEO and the chairman of the board of directors' positions. Based on this definition, CEO duality was measured by a dichotomous variable

that takes the value of 1 if both the chairman and the CEO are the same person and 0 otherwise.

Board of directors' size and audit committee size were measured as the number of board members in the board and audit committee, respectively.

Institutional ownership is the situation where the equity shares of firms are held by large financial institution, pension funds, or other incorporated bodies. In this study, based on the definition, institutional ownership was measured by a dichotomous variable that takes the value of 1 if the largest shareholder is an institution and 0 otherwise.

Ownership concentration is the distribution of the shares among investors. In this research, ownership concentration was measured as the percentage of shares held by the largest shareholder.

#### 3.3.2. Audit Quality Measures

Auditor data was hand-collected from firms financial reports downloaded from ISE and Public Disclosure Platform website. In this study, the auditor choice was measured by the following audit firm attributes; Big-4, and audit firm specialization. BIG-4 is a dichotomous variable that takes the value of 1 if the audit firm is one of the Big-4 and 0 otherwise.

Industry specialization refers to the experience of audit firms in a specific industry. As it is not possible to observe the industry specialization of auditors or audit partners using the auditor characteristics or educational background or experience spent in a specific industry, in literature industry specialization is measured indirectly. In this study, industry specialization of audit firm was measured as the market share of audit firms in percents and calculated as the proportion of total assets of clients audited to the sum of total assets of all firms in a specific industry. First, the market share of each audit firm, in terms of total asset was calculated for each year and industry, separately. Then, the calculated market share of the audit firms was divided to total assets of firms in a specific industry and in a specific year, to compute an industry specialization index.

## 4. RESEARCH RESULTS

### 4.1. Descriptive Statistics

Table 2 presents descriptive statistics for all firm-year observations containing mean, median, standard deviation minimum and maximum value of all variables. Big-4 has a mean of 0.48, demonstrating that while 48% of sample ISE firms were audited by Big-4 audit firms, 52% of them were audited by Non-

Big-4 auditors. Mean and median of value of industry specialization is 17.15% and 6.9%, respectively, sign of that on average, sample ISE firms are audited by a lower level of industry specialist auditors. Mean and median proportion of independent board members

to board of directors' size is 3.6% and 0 (zero), respectively, implies a quite low level of board of directors' independence relative to that of US and UK firms reporting 58% (Klein, 2002) and 43% (Peasnell et al., 2000).

**Table 2:** Descriptive Statistics

Variables	Mean	Median	Standard Deviation	Minimum	Maximum
BIG – 4 <sub>it</sub>	.4819876	0	.4999861	0	1
IND_SPEC <sub>it</sub>	.1715441	.0698549	.2010541	.0003433	.8428066
B_IND <sub>it</sub>	.036256	0	.1016546	0	.66667
B_SIZE <sub>it</sub>	6.253416	6	1.926608	3	14
CEO_D <sub>it</sub>	.1540373	0	.3612089	0	1
ACC_SIZE <sub>it</sub>	1.941772	0	.6538581	2	3
INST_OW <sub>it</sub>	.8194271	0	.3849036	1	1
OWN_CNCT <sub>it</sub>	49.50211	49.42	22.42166	.78	99.28
SIZE <sub>it</sub>	19.00681	18.97	1.46143	15.65	23.2
DEBT/EQUITY <sub>it</sub>	1.071267	.68	9.003047	-206.12	122.72
ROA <sub>it</sub>	.0055888	.025	.2026431	-3.228	1.005

(Notes: n=805 firm-year observations. p-values are reported in parentheses below parameter estimates. BIG – 4<sub>it</sub>, dummy variable which takes the value of 1 when the firm is audited by Big-4, 0 otherwise; IND\_SPEC<sub>it</sub>, Industry Specialization of audit firm; B\_IND<sub>it</sub>, Independence of board of directors and equal to the proportion of the number of independent directors in the board to the number of all board members; B\_SIZE<sub>it</sub>, Board size and measured as the number of directors in the board of directors; CEO\_D<sub>it</sub>, CEO duality and it takes the value of 1 if CEO and the chairperson positions are held by the same individual, 0 otherwise; ACC\_SIZE<sub>it</sub>, Audit committee size and measured as the number of directors in the audit committee; INST\_OW<sub>it</sub>, Institutional ownership and it takes the value of 1 if the largest shareholder is an institutional or incorporated body, 0 otherwise; OWN\_CNCT<sub>it</sub>, Ownership concentration and measured by the percentage of equity shares owned by the largest shareholder; SIZE<sub>it</sub>, Size of the firms and measured the natural logarithm of total assets; DEBT/EQUITY<sub>it</sub>, Leverage measured as the proportion of debt to equity; ROA<sub>it</sub>, Return on Assets measured as the proportion of net income to total assets.)

The results report that majority of sample ISE firms have no independent member in the board of directors. Mean and median of board of directors' size are 6.23 and 6, respectively; representing that sample ISE firms have on average 6 directors (3-14 directors) in the board of directors. Mean and median of CEO duality is 0.15 and 0 (zero), respectively, signifying that on average, only in 15% of sample ISE firms CEO position are held by the chairman of the board of directors. Mean and median of audit committee size are 1.94 and 2, respectively, suggesting that sample ISE firms have on average 2 members in the audit committee.

This number demonstrates that sample ISE firms mostly meet the minimum requirement set by Capital Markets Board of Turkey (CMB) regardless the number of directors in the board and the firm's size. Mean and median of institutional ownership are 0.81 and 0 (zero), respectively, showing that 81% of sample ISE firms have institutional owner. Mean and median percentages of ownership concentration illustrate a value of 49.50 and 49.42, respectively, indicating that

in sample ISE firms, 49.5% of total shares are held by big shareholder. Mean and median values of firm size measured by natural logarithm of total assets are 19.0 and 18.47, respectively. Mean and median debt-equity are financial debt ratio is 1.07 and 0.68, respectively and the mean and median value of the return on asset are .005 and 0.025, respectively.

#### 4.2. Findings

Table 3 documents the results of the multinomial logit regression with Big-4, as dependent variable (Model 1) and the multiple panel regressions for audit firm industry specialization, as dependent variables (Model 2). Firm level corporate governance and control variables explain 22.40% of Big-4 auditor choice, and 28.33% of industry specialist auditor choice.

Regression results in Model 1 point out that, some of the firm-level corporate governance mechanisms have significant influence on firms' choice of Big-4 and industry specialist auditors. According to the coefficient parameters, the significant negative coefficient of board independence in Model 1 at

1% significance level, indicating that firms with higher board of directors' independence demand less Big-4 auditor. On average, 1% increase in board independence decreases the likelihood of Big-4 auditor choice by 2.31. These findings might be interpreted as independent members might substitute the audit quality demanded from Big-4, consistent with the substitution effect proposed by Williamson (1983) and the findings of Anderson et al. (1993) and Yeoh and Jubb (2002) that effective internal monitoring devices substitute the demand for high quality external monitoring.

A positive significant coefficient of board of directors' size in Model 1 indicates that firms with larger board of directors demand more Big-4. The coefficient estimates of board size is 0.12, indicating

that as board sizes increases the likelihood of Big-4 auditor choice increases by 0.12. These findings might be a sign of that as larger boards might suffer from the coordination and communication problems among board members, the board is less likely be effective and functional in financial reporting oversight and demand Big-4 auditor.

The significant positive coefficient of ownership concentration level points out that firms with more concentrated ownership are more likely to choose Big-4 auditors, consistent with Yeoh and Jubb (2002). The coefficient estimates for ownership concentration is 0.030, indicating that as ownership concentration increases by 1%, the likelihood of Big-4 audit demand increases by 0.030. As higher ownership concentration is associated

**Table 3:** Multivariate Regression of Audit Quality Attributes on Firm-level Corporate Governance Mechanisms

	Exp.Sign	Model 1 Dependent Variable: BIG - 4 <sub>it</sub>	Model 2 <sup>4</sup> Dependent Variable: IND_SPEC <sub>it</sub>
Constant		-13.37055 (0.000)***	-6043775 (0.000)***
B_IND <sub>it</sub>	(-)	-2.319699 (0.008)**	.1889679 (0.043)*
B_SIZE <sub>it</sub>	(+)	.1241445 (0.020)**	.0100188 (0.003)***
CEO_D <sub>it</sub>	(+)	-.317267 (0.221)	-.0478519 (0.007)**
ACC_SIZE <sub>it</sub>	(+)	.260192 (0.085)	-.0109681 (0.369)
INST_OWN <sub>it</sub>	(-)	.2392575 (0.434)	.0643377 (0.021)**
OWN_CNCT <sub>it</sub>	(+)	.0302157 (0.000)***	-.0001657 (0.679)
SIZE <sub>it</sub>	(+)	.5474568 (0.000)***	.0364537 (0.000)***
DEBT/EQUITY <sub>it</sub>	(-)	-.0048084 (0.672)	.0002136 (0.561)
ROA <sub>it</sub>	(+)	.4239467 (0.428)	.0055806 (0.769)
LR Chi-square or Wald Chi-square		244.23 (0.000)	70.07 (0.000)
Pseudo or Adjusted R-square		0.2240	0.2833

(Notes: n=805 firm-year observations. p-values are reported in parentheses below parameter estimates. Model 1 is estimated using logit regression. Model 2 is estimated using panel regression controlled for industries and year effects. All coefficient estimates are robust estimates of White corrected standard errors. BIG - 4<sub>it</sub>, dummy variable which takes the value of 1 when the firm is audited by Big-4, 0 otherwise; IND\_SPEC<sub>it</sub>, Industry Specialization of audit firm; B\_IND<sub>it</sub>, Independence of board of directors and equal to the proportion of the number of independent directors in the board to the number of all board members; B\_SIZE<sub>it</sub>, Board size and measured as the number of directors in the board of directors; CEO\_D<sub>it</sub>, CEO duality and it takes the value of 1 if CEO and the chairperson positions are held by the same individual, 0 otherwise; ACC\_SIZE<sub>it</sub>, Audit committee size and measured as the number of directors in the audit committee; INST\_OWN<sub>it</sub>, Institutional ownership and it takes the value of 1 if the largest shareholder is an institutional or incorporated body, 0 otherwise; OWN\_CNCT<sub>it</sub>, Ownership concentration and measured by the percentage of equity shares owned by the largest shareholder; SIZE<sub>it</sub>, Size of the firms and measured the natural logarithm of total assets; DEBT/EQUITY<sub>it</sub>, Leverage measured as the proportion of debt to equity; ROA<sub>it</sub>, Return on Assets measured as the proportion of net income to total assets. There is no multicollinearity among variables.)

with higher information asymmetry, to gain the public confidence and signal to investors that the information disclosed in the financial reports are audited by an experienced and high quality auditor, firms with concentrated ownership are more likely to choose Big-4.

Hypothesis 1 is supported only for board independence, board size and ownership concentration and it is concluded that strong corporate governance substitutes audit quality. Thus, firms with low independent board of directors, large board size and high ownership concentration are more likely to choose Big-4 audit firms.

Regression results in Model 2 demonstrate a significant positive coefficient for board independence, indicating that firms with higher board independence demand more industry specialist auditors. On average, 1% increase in board independence increases the demand for industry specialist auditors by 0.18.

A positive significant coefficient of board size indicates that firms with larger board of directors demand more industry specialist auditor. The coefficient estimate of board size is 0.010, indicating that as board sizes increases industry specialist auditor choice increases by 1%. Similar to Big-4 auditor choice this might be because of the possible coordination and communication problems among board members, which decreases the effectiveness of the board in financial reporting oversight and demand more industry specialist auditor.

There is a negative association between industry specialization of auditor in and CEO duality. The coefficient of CEO duality is -0.04, significant at 1% level, implying that the presence of CEO duality decreases the demand for industry specialist auditor choice by 4.7%. CEO duality leads a power concentration and this power concentration and the overlapping of the management and controlling roles are more likely to the existence agency problems. Therefore, theoretically, for the effectiveness of financial reporting audit and to mitigate agency problems, it is expected a demand for a higher quality audit in terms of industry specialist auditors. One of the reasons of this inverse relation might be the influence of the CEO, as a board chairman in the appointment of external auditors.

Institutional ownership has a significant positive coefficient of 0.064 for industry specialization, indicating that on average the presence of institutional owners increase the industry specialist

auditor choice by 6.4%. As institutional investors are more sophisticated, according to the substitution effect, it is expected that firms with institutional owners are less likely to choose industry specialist auditors.

Hypothesis 2 is supported only for board size. It is concluded that firms with large boards are more likely to choose industry specialist audit firms. On the contrary of the substitution hypothesis, unexpected results show that, firms with independent board members, no-CEO duality and institutional ownership demand more industry specialist auditors, implying a complementary effect.

Multivariate regression models were controlled for firm size, debt to equity and return on asset. The coefficient estimates of controlling variables show that firm size positively affects firms' choice of Big-4 and industry specialist auditors, suggesting that big firms are more likely to prefer Big-4 and industry specialist auditors. However, these findings might also be interpreted differently, considering the market competition among auditors and the beating power of the Big-4 audit firms in the market; Big-4 audit firms are more likely to retain their client relation with big firms.

## 5. CONCLUSION

In recent years, with the intention of developing capital markets and attracting more local and foreign investors, in Turkey, corporate governance and auditing attain considerable importance. Independent external audit is considered as an important corporate governance mechanism and the external auditor choice founded on the board of directors' decision. Thus, following the substitution effect, in order to gain public confidence, in Turkey, weak corporate governance structure, low level of board independence and high ownership concentration demands higher audit quality.

This study examined the association between corporate governance and auditor choice. Overall findings show that, in Turkey, firms' auditor choice in terms of Big-4 and audit firm industry specialization is affected by the firm-level corporate governance structure, particularly, board of directors' composition and ownership structure. Board independence, board size and ownership concentration have significant influence on Big-4 auditor choice. On the other hand, it is found that only board independence, board size, CEO duality and institutional ownership have significant relation with industry specialist auditor choice. Moreover, corporate governance

has relatively higher influence on Big-4 auditor choice comparing to industry specialist auditor choice. These findings support Mayoral and Segura (2008), Anderson et al. (1993) and Yeoh and Jubb (2002), that due to several different incentives such as the substitution of external audit quality by internal governance mechanisms (Williamson, 1983) or signalling to market about the accuracy of the information in financial reports, firms' firm-level corporate governance structure have significant influence on auditor choice.

The findings of the study clearly support the substitution relation between firm-level corporate governance and audit. Firms with low independent board of directors, large board size and high ownership concentration choose Big-4 audit firms, implying that firms blot out the weakness of their governance structure by signalling minor or potential investors about the quality of their financial reports which are audited by Big-4 auditor. Similarly, firms with large boards are more likely to choose industry specialist audit firms in order to assure the outsiders about the quality of their financial reports.

As it is mentioned before, Turkey is a country with weak corporate governance structure, particularly low board of directors' independence and ownership concentration. In Turkey, as agency problems occur between major or family and minority shareholders, if the capital markets' regulations are not adequate to protect the minority shareholders' and investors' rights, those groups would prefer to abstain to make investment due to the information asymmetry or misleading information disclosed by firms. By protecting minority shareholders' and investors' right, a strong corporate governance structure

facilitates and contributes the developments of capital markets. Still, if the corporate governance structure is not strong effective, at least independent external audit seems like insurance by investors that ensure the accuracy of the information presented by firms. This study make significant contributions to the literature by providing empirical findings on the aptitude of Turkish firms in auditor choice behavior, in order to substitute weak corporate governance structure by high audit quality.

According to the report of Institute of International Finance (IIF) (2005), the main problem in the application of corporate governance principles in Turkey is the lack of a legal enforcement mechanism. Although Capital Markets Board plays an essential role in the regulation of the exchange markets and makes contributing recommendations, the "comply or explain" approach, as an enforcement mechanism does not fit with Turkish Continental Europe model legal framework (Hacımahmutoğlu, 2007). Therefore, as a further policy implication, the corporate governance structure of Turkish firms should be strengthening by new regulations.

Although this research was conducted based on a theoretical background and research design it has some limitations, particularly, due to the nature of the research methodology and data constrains. The study uses secondary data both for corporate governance and audit. Using primary data by gathering through interviews and questionnaire may improve the interpretation of the findings. As a further research, the relation between corporate governance and auditing might be investigated by considering the voluntary and mandatory auditor change, auditor opinion, auditor tenure.

## END NOTES

<sup>1</sup> In the new commercial code, the rules about website, which will be used as a communication tool to disclose publicly available information, will be effective starting from July, 1, 2013 and the rules about the implementation of IFRSs will be effective starting from January, 1, 2013.

<sup>2</sup> The original Herfindahl index is a measure for market concentration and computed as a measure of the size of firms in relation to the industry (Hirschman, 1964)

<sup>3</sup> Consistent with previous studies, Big-4 audit firms are as follows; Pricewaterhousecoopers, Ernst and Young, Deloitte Touche Tohmatsu and KPMG.

<sup>4</sup> The chi-square value 59.63 (0.000) in Hausman test indicates that a random effects model is not appropriate. Therefore fixed effect model is used.

<sup>5</sup> This study has been derived from a chapter of the unpublished PhD thesis "The Role of Corporate Governance on Earnings Management: Quarterly Evidence from Turkey" submitted to the Graduate School of Social Sciences of Izmir University of Economics.

## REFERENCES

- Abbott, L.J., Parker, S., Peters, G.F. ve Rama, D.V. (2007) "Corporate Governance, Audit Quality, and the Sarbanes-Oxley Act: Evidence from Internal Audit Outsourcing" *The Accounting Review*, 82(4):803-835.
- Adyemi, S.B. ve Fagbemi, T.O. (2010) "Audit Quality, Corporate Governance and Firms Characteristics in Nigeria" *International Journal of Business and Management*, 5(5):169-179.
- Anderson, D., Jere, R.F. ve Donald J.S. (1993) "Auditing, Directorships and the Demand for Monitoring" *Journal of Accounting and Public Policy*, 12(4):353-375.
- Ararat, M., Orbay, H. ve Yurtoğlu, B.B. (2010) "The Effects of Board Independence in Controlled Firms: Evidence from Turkey" Working Paper Series.
- Balsam, S., Krishnan, J. ve Yang, S.J. (2003) "Auditor Industry Specialization and Earnings Quality" *Auditing: A Journal of Practice & Theory*, 22(2):61-96.
- Becker, C.L., DeFond M.L., Jiambalvo, J.J. ve Subramanyam K.R. (1998) "The Effect of Audit Quality on Earnings Management" *Contemporary Accounting Research*, 15(1):1-24.
- Beasley, M.S. (1996) "An Empirical Analysis of the Relation between the Board of Directors and Financial Report Fraud" *The Accounting Review*, 71(4):443-465.
- Blue Ribbon Committee (1999) "Report and Recommendations of Blue Ribbon Committee on Improving the Effectiveness of Corporate Audit Committees" *The Business Lawyer*, 54(3):1067-1095.
- Cadbury Committee (1992) "Report of the Committee on the Financial Aspects of Corporate Governance" [www.uksa.org.uk/Corporate\\_Governance\\_Cadbury\\_1992.pdf](http://www.uksa.org.uk/Corporate_Governance_Cadbury_1992.pdf), (07.09.2010)
- Capital Markets Board (2003) "Corporate Governance Principles" <http://www.spk.gov.tr/indexcont.aspx?action=showpage&menuid=10&pid=0>, (07.09.2010)
- Capital Markets Board (2006) "Communiqué on Independent Auditing Standards in Capital Markets" <http://spk.gov.tr/apps/teblig/index.aspx?lang=T&submenuheader=-1>, (07.09.2010)
- De Angelo, L.E. (1981) "Auditor Size and Audit Quality" *Journal of Accounting and Economics*, 3(3):183-199.
- DeFond, M.L., Jere J.F. ve Wong, T.J. (2000) "Auditor Industry Specialization and Market Segmentation: Evidence from Hong Kong" *Auditing: A Journal of Practice & Theory*, 19(1): 49-66.
- Demirag, I. ve Serter, M. (2003) "Ownership Patterns and Control in Turkish Listed Companies" *Corporate Governance: An International Review*, 11(1):40-51.
- Durukan, M.B., Özkan, S. ve Dalkılıç, A.F. (2009) "The Effectiveness of The Turkish Corporate Governance System: CEO Changes and Performance Measures" Working Paper Series.
- Dye, R.A. (1993) "Auditing Standards, Legal Liability, and Auditor Wealth" *The Journal of Political Economy*, 101(5):887-914.
- García-Osma, B. (2006) "Earnings Quality, Auditor Monitoring and Corporate Governance Mechanisms" Unpublished PhD Thesis, United Kingdom, Lancaster University.
- Gillan, S.L. (2006) "Recent Developments in Corporate Governance: An Overview" *Journal of Corporate Finance*, 12(3):381-402.

- Hacımahmutoğlu, S. (2007) "The Problems of Minority Protection and their Solutions within the Legal Framework" *Journal of Banking Regulation*, 8(2):131-158.
- Hampel Committee (1998) "Final Report on Corporate Governance" [http://www.ecgi.org/codes/documents/hampel\\_index.htm](http://www.ecgi.org/codes/documents/hampel_index.htm), (07.09.2010).
- Institute of International Finance (2005) "Corporate Governance in Turkey, an Investor Perspective" [www.goodprogram.org/docs/IIFCorpGovTurkey\\_0405.pdf](http://www.goodprogram.org/docs/IIFCorpGovTurkey_0405.pdf), (01.09.2010)
- Jensen, M.C. veMeckling, W.H. (1976) "Theory of the Firm: Managerial Behaviour, Agency Costs and Ownership Structure" *Journal of Financial Economics*, 3(4):305-360.
- Jensen, M.C.(1993) "The Modern Industrial Revolution, Exit, and the Failure of Internal Control Systems" *The Journal of Finance*, 48(3):831-880.
- Klein, A. (2002) "Audit Committee, Board of Director Characteristics, and Earnings Management" *Journal of Accounting and Economics*, 33(3):365-400.
- Krishnan, G.V. (2003) "Does Big 6 Auditor Industry Expertise Constrain Earnings Management?" *Accounting Horizons*, 17(1):1-16.
- LaPorta, R., Lopez-de-Silanes, F., Shleifer, A. ve Vishny, R. (2000) "Investor Protection and Corporate Governance" *Journal of Financial Economics*, 58:3-27.
- Lin, Z.M. ve Liu, J. (2009) "The Impact of Corporate Governance on Auditor Choice: Evidence From China" *Journal of International Accounting, Auditing and Taxation*, 18:44-59.
- Mayoral, J.M. ve Segura, A.S. (2008) "Corporate Governance, Agency Conflicts and Auditor Choice" *Revista Espanola De Financiacion Y Contabilidad-Spanish Journal of Finance and Accounting*, 37(137):113-135.
- McMullen, D.A. ve Raghunandan, K. (1996) "Enhancing Audit Committee Effectiveness" *Journal of Accountancy*, August, 69-81.
- Peasnell, K.V, Pope P.F. ve Young, S. (2000). "Accrual Management to meet Earnings Targets: UK Evidence Pre-and Post-Cadbury" *British Accounting Review*, 32(4):415-445.
- Piot, C. ve Janin, R. (2006) "External Auditors, Audit Committees and Earnings Management in France" *European Accounting Review*, 16(2):429-454.
- Schauer, P.C. (2002) "The Effects of Industry Specialization on Audit Quality: An Examination Using Bid-Ask Spreads" *Journal of Accounting and Finance Research*, 10(1): 76-86.
- Siregar, S.V. ve Utama, S. (2008) "Type of Earnings Management and the Effect of Ownership Structure, Firm Size, and Corporate Governance Practices: Evidence from Indonesia" *The International Journal of Accounting*, 43(1):1-26.
- Solomon, I., Shields, M.D. ve Whittington, O.R. (1999) "What Do Industry-Specialist Auditors Know?" *Journal of Accounting Research*, 37(1):191-208.
- The Sarbanes-Oxley Act.(2002) [news.findlaw.com/cnn/docs/gwbush/sarbanesoxley072302.pdf](http://news.findlaw.com/cnn/docs/gwbush/sarbanesoxley072302.pdf), (07.09.2010).
- Wallace, W. (2004) "The Economic Role of the Audit in Free and Regulated Markets: A Look Back and A Look Forward" Working Paper Series, No:17.
- Watts, R.L. ve Zimmerman, J.L. (1986) *Positive Accounting Theory*, New Jersey, Prentice Hall.
- Willenborg, M. (1999) "Empirical Analysis of the Economic Demand for Auditing in the Initial Public Offering Market" *Journal of Accounting Research*, 37(1):225-238.
- Williamson, O.E. (1983) "Organizational Form, Residual Claimants, and Corporate Control" *Journal of Law and Economics*, 26(2):351-366.
- Bauwhede, H.V., Willekens, M. ve Gaeremynck, A. (2000) "Audit Quality, Public Ownership and Firms" Discretionary Accruals Management" Working Paper Series, No:53.
- Van Tendeloo, B.V ve Vanstraelen, A. (2008) "Earnings Management and Audit Quality in Europe: Evidence from the Private Client Segment Market" *European Accounting Review*, 17(3):447-469.
- Yeoh, E. ve Jubb, C.A. (2002) "Governance and Audit Quality: Is there an Association?" American Accounting Association Auditing Section Midyear Conference, Orlando, Florida, United States.