

REPUBLIC OF TURKEY
ÇUKUROVA UNIVERSITY
INSTITUTE OF SOCIAL SCIENCES
DEPARTMENT OF BUSINESS ADMINISTRATION

**THE IMPACT OF AUDIT COMMITTEES ON FIRM PERFORMANCE: AN
APPLICATION ON BIST COMPANIES**

Ferah HASSAN

MASTER THESIS

ADANA / 2019

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Supervisor: Prof. Turgut ÇÜRÜK

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MASTER THESIS

ADANA / 2019

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Ferah HASSAN

ABSTRACT**THE IMPACT OF AUDIT COMMITTEES ON FIRM PERFORMANCE: AN
APPLICATION ON BIST COMPANIES****Ferah HASSAN****Master Thesis, Department of Business Administration****Supervisor: Prof. Turgut ÇÜRÜK****February 2019, 97 pages**

Recently, corporate governance mechanisms, such as the audit committee, have gained importance in order to protect the interests of shareholders and stakeholders following the occurrence of several accounting and audit scandals. Therefore, Turkey, as well as a number of countries, are required to establish audit committees in public companies.

The purpose of this study is to investigate the impact of audit committee characteristics (audit committee independence, financial expertise, gender, meeting frequency, and age average) on the firm performance of listed companies in Borsa Istanbul (BIST). Return on Assets (ROA), Return on Equity (ROE), and Tobin's Q were used as proxies for firm performance based on former academic research in this related area of study. Data was obtained from a sample of 102 non-financial companies listed on BIST for the period 2006-2016 which was analyzed using multiple linear regression analysis.

Findings show that there is a positive significant relationship between independence and gender of audit committee members and ROA, ROE, and Tobin's Q. However, age average has a negative significant relationship with ROA and ROE. Financial expertise and meeting frequency revealed no significant relationship between all the dependent variables.

Keywords: Audit committee, corporate governance, firm performance

ÖZET

DENETİM KOMİTELERİNİN FİRMA PERFORMANSI ÜZERİNE ETKİSİ: BİST ŞİRKETLERİ ÜZERİNE BİR UYGULAMA

Ferah HASSAN

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Son yıllarda yaşanan muhasebe ve denetim skandalların ardından, özellikle hissedarların ve menfaat sahiplerinin çıkarlarını korumak adına, denetim komitesi gibi kurumsal yönetim mekanizmaları önem kazanmıştır. Bu nedenle, birçok ülke gibi Türkiye’de de halka açık şirketlerin denetim komitesi kurmaları gerekmektedir.

Bu çalışmanın amacı, denetim komitesi özelliklerinin (denetim komitesi bağımsızlığı, finansal uzmanlık, cinsiyet, toplantı sıklığı ve yaş ortalaması) Borsa İstanbul’da listelenen şirketlerin firma performansı üzerindeki etkisini araştırmaktır. Literatürdeki mevcut çalışmalardan hareketle, Aktiflerin getirisi (ROA), Özkaynak getirisi (ROE) ve Tobin’s Q’nun firmaların performans göstergesi olarak kullanıldığı bu çalışmada, 2006-2016 döneminde BIST’te işlem gören 102 mali olmayan şirketin faaliyet raporundan elde edilen veriler çoklu regresyon analizi kullanılarak analiz edilmiştir.

Araştırma bulguları, denetim komitesi üyelerinin bağımsızlığı ve cinsiyetleri ile ROA, ROE ve Tobin’in arasında pozitif yönde anlamlı bir ilişki olduğunu göstermiştir. Ancak, yaş ortalaması, ROA ve ROE ile negatif yönde anlamlı bir ilişki bulunmuştur. Finansal uzmanlık ve toplantı sıklığı tüm bağımlı değişkenler arasında anlamlı bir ilişki olmadığını ortaya koymuştur.

Anahtar Kelimeler: Denetim komitesi, kurumsal yönetim, firma performansı

ACKNOWLEDGEMENTS

As the business environment becomes more competitive, it has become more challenging for companies to sustain in the market. An effective corporate governance system is necessary in order to maintain a profitable position in highly competitive markets. The audit committee was initiated, developed, and required in several countries as a means of strengthening companies in every way possible after the occurrence of financial scandals. This master's thesis aims to contribute to literature by studying the effect of the audit committee on the firm performance of companies.

First and foremost, I would like to express my sincere thanks to my thesis advisor, Prof. Turgut Çürük for his patient supervision, valuable time, and great advice. I truly appreciate his fundamental role in the completion of my thesis and I am grateful for all the assistance he has provided.

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LIST OF ABBREVIATIONS

AC	: Audit committee
AICPA	: American Institute of Certified Public Accountants
BIST	: Borsa İstanbul
BRC	: Blue Ribbon Committee
CGP	: Corporate Governance Principles
CMB	: Capital Markets Board
COSO	: Committee of Sponsoring Organizations of Treadway Commission
EVA	: Economic Value Added
FINRA	: Financial Industry Regulatory Authority
MVA	: Market Value Added
NPV	: Net Present Value
NYSE	: New York Stock Exchange
POB	: Public Oversight Board
ROA	: Return on Assets
ROCE	: Return on Capital Employed
ROE	: Return on Equity
SOX	: Sarbanes-Oxley Act
SEC:	: Securities and Exchange Commission

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CHAPTER I

INTRODUCTION

Following the collapse of companies such as Enron and WorldCom, corporate governance has gained a new perspective and has become the focus of all firms aiming to sustain in fierce and competitive markets. Corporate governance has allowed management to concentrate on transparency and the disclosure of information in order to prevent misbehavior of management and safeguard the rights of stakeholders. Several weaknesses in financial reporting at the time of economic turmoil and financial crisis captured the attention of many (Issarawornrawanich, 2015). The acknowledgement of such fraudulent cases and the negative experiences faced by companies lead many countries to pass laws and/or reform current laws in favor of establishing certain measures of corporate governance, one of them being audit committees. Arı (2008) states that the audit committee is a corporate governance mechanism that observes the financial reporting process of companies to assist them in presenting objective and credible financial information, protects the interests of stakeholders by preventing possible mistakes and frauds, and oversees independent audit and internal audit activities. Briefly, audit committees act on behalf of the board of directors, and provide reasonable assurance in areas of internal audit, external audit, financial reporting, and internal controls (TÜSİAD, 2012). While some countries made it mandatory for publicly listed companies on the stock exchange to form audit committees, other countries made it voluntary or optional.

1.1. Problem Statement

In recent years, there has been an increasing amount of attention on the matter of responsible financial reporting, taking a highly competitive market and an increasing focus on corporate earnings into consideration. Many countries have applied new standards and mechanisms to improve financial reporting systems and to better manage the risks faced by companies. Firms have begun forming audit committees, now mandatory in most countries, as a means of improving audit quality by having good corporate governance.

Review of related literature indicates that the formation of audit committees occurred much earlier in developed countries than in most developing countries. For

instance, Canada was the first country to require firms to establish audit committees in 1971, followed by the United States in 1978, Australia in 1991, and the United Kingdom in 1992 (Sori, Abdul Hamid, Saad, Evans, & Nassir, 2006). As a result, there exists several studies on audit committees in these countries. However, Turkey required publicly listed companies to form audit committees in 2006. Therefore, the audit committee in Turkey is relatively new and likely to be underdeveloped in comparison to the developed countries.

The main problem of this study is that due to the audit committee being new in Turkey, there is limited amount of research carried out on the topic of the impact of the audit committee on firm performance. This study intends to close the gap in this field by contributing to theoretical and empirical literature and providing numerous benefits to Turkish companies, investors, and financial statement users.

1.2. Purpose of the Research

The main purpose of this study is essentially to determine which audit committee factors are predominant in affecting firm performance of publicly listed companies in Turkey, which is not explored as often as other developed countries. The study further aims to discover the presence of a meaningful relationship (positive or negative) between the variables to reach a conclusion that will benefit all companies operating in Turkey.

Upon examining related literature review, the audit committee and firm performance factors that have been frequently used are reviewed. In this study, audit committee independence, financial expertise of audit committee members, gender diversity, age average, and meeting frequency are used as independent variables. The dependent variable firm performance is measured by accounting measures such as ROA, ROE, and Tobin's Q.

1.3 Methodology of the Research

The purpose of this research is to examine the effect of audit committee characteristics on the firm performance of Borsa Istanbul (BIST) companies in Turkey for the period 2006-2016. Audit committee independence, financial expertise of members, gender diversity, age average, and meeting frequency are labeled as the independent variables, whereas the dependent variable firm performance is represented

by performance measures such as ROA, ROE, and Tobin's Q. The multiple linear regression analysis is employed and is applicable for the study because it demonstrates the relationship between two or more independent variables and a dependent variable.

The research has derived hand-collected secondary data from the audited annual reports and websites of listed companies to gather information related to audit committee characteristics and firm performance measures. Aside from annual reports, other sources such as books, journals, and articles have also been reviewed by means of online sources and various databases.

1.4. Contribution to Literature

After examining literature on the subject of the relationship between audit committees and firm performance, a number of studies have been found in developed countries, where laws on establishing audit committees have been enacted earlier than in Turkey. These studies, which aim to enhance current audit committees and provide information as to how companies can improve them to achieve higher performance, have had considerable contributions to the countries they have been performed in. The number of studies performed on this topic in developing countries such as Turkey, however, is rather limited and require further research. Therefore, this study is expected to contribute to literature by filling the gap in this area of research.

1.5. Plan of the Thesis

This thesis, which examines the impact of audit committees on firm performance, consists of six chapters. The detailed structure of the thesis is as follows:

The first chapter is the introduction. A general overview of the thesis is presented and a general understanding of the topic is provided before continuing to the theoretical sections of the work. The introduction chapter includes the problem statement, the purpose of the study, methodology and its contribution to literature.

In the second chapter, the audit committee is explained in detail, from its history to its current state. The various definitions available on audit committees, its roles and responsibilities, its functions, laws that mandated the committee and its establishment in Turkey and in other countries are mentioned. In short, the chapter summarizes the fundamental information and gives a thorough background regarding audit committees.

Following the chapter on audit committees, the third chapter provides a comprehensive research on firm performance. It provides a list of definitions and elaborates on several performance measures used in researches.

The fourth chapter includes the main theories that provide the basis of performing this study and a literature review on previously performed researches related to the topic of the thesis.

The fifth chapter covers the empirical application on BIST companies and its results, distinguishing this academic work from all other works.

Finally, the sixth and last chapter, is the conclusion and provides a brief summary, along with recommendations, and limitations of the study.



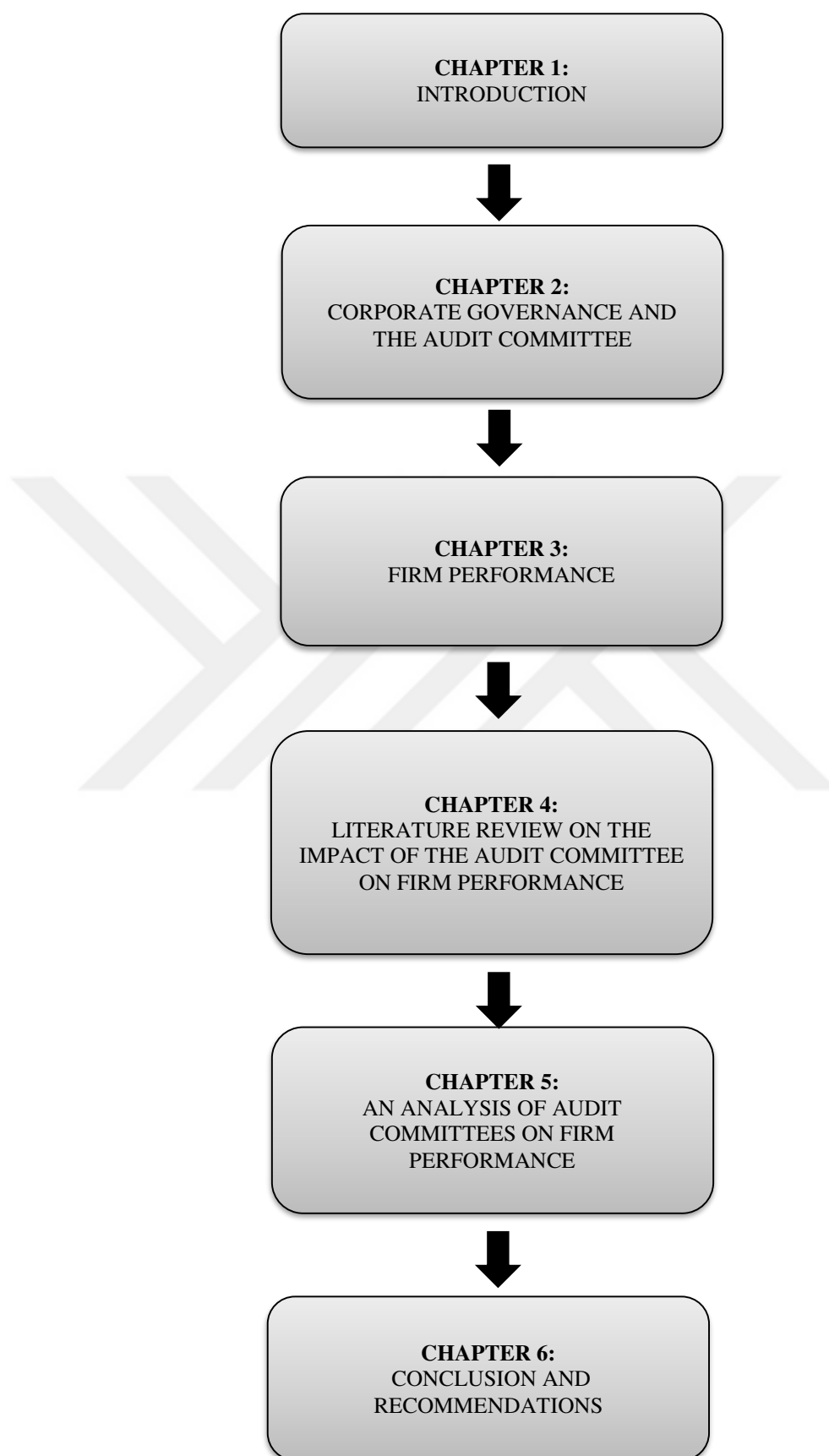


Figure 1. Plan of the thesis

CHAPTER II

CORPORATE GOVERNANCE AND THE AUDIT COMMITTEE

2.1. Corporate Governance

The term *governance* is derived from the Latin word *gubernare*, which means to steer, and is referred to the steering of a ship. Hence, this suggests that corporate governance involves giving direction as a form of guidance, rather than fully controlling (Dibra, 2016, p.283). As stated in the Cadbury report (1992), corporate governance is the system which is used to direct and control companies. The Organization for Economic Cooperation and Development (2004) defines corporate governance as “a set of relationships between a company’s management, its board, its shareholders and other stakeholders” (p.11). In a narrower sense, it refers to all kinds of laws, regulations, codes and practices that allow an institution to attract human and financial capital, work effectively, and create economic value for the partners in the long term (Demirbaş & Uyar, 2006).

It presents companies with a structure by which they are able to set their objectives and determine the measures of achieving them. The structure is generally maintained with a board of directors appointed by shareholders, who has responsibility over the governance of the company they are in. A strong corporate governance framework is crucial in that it protects stakeholders, builds investor confidence, and attracts foreign direct investment.

The purpose of audits is to promote confidence and trust in financial information. The agency theory sheds some light on the concept of corporate governance. This theory points out that principals appoint agents and delegate some decision-making authority to them, hoping that these agents will act in the principals’ best interests. However, information asymmetries can occur between principals and agents, causing principals to lack trust in their agents. Therefore, the need for mechanisms may emerge to reinforce this trust. The collapses of major corporations that occurred because of insufficient corporate governance mechanisms have shown that improvements must be made internationally in relation to corporate governance (Dibra, 2016).

Corporate governance regulates relations between shareholders, the board of directors, personnel, and both inside or outside regulators of the company (Al-Matari,

Al-Swidi, & Fadzil, 2014). In addition, the audit committee has been recognized recently as a corporate governance mechanism which is progressively gaining significance in companies. Managing corporate governance well in a business environment could be an effective method to lessen the uncertainty and risk, hence attracting investment (Ghabayen, 2012).

2.2. Definition of an Audit Committee

Established by the board of directors, the audit committee is a committee that is responsible for monitoring and overseeing the accounting and financial reporting processes of the company and audits of the financial statements of the company (SOX, 2002, p. 3). The audit committee is a committee with the function of overseeing the effectiveness, implementation and adequacy of the internal and external audit process, implementation efficiency, value added, accounting, financial reporting and internal controls (TÜSİAD, 2012).

The board of directors appoints an audit committee aiming to protect the best interest of shareholders. Being an independent committee in most cases, the committee offers its impartial opinions and visions counterbalancing the seldom interaction between management and shareholders (Nuhoğlu & Armağan, 2013). By somewhat eliminating the lack of trust between the two parties, the audit committee forms a bridge between management, the board, and the auditor. Çatıkkaş and Yurtsever (2007) propose that an audit committee is an administrative committee responsible for supporting and promoting independence of independent auditors, alongside observing the internal controls and external financial reporting process of the entity. Audit committees serve as a key monitoring mechanism in corporate governance, such that in the aftermath of greatly publicized corporate scandals, such as Enron, WorldCom, and Tyco, the Sarbanes-Oxley Act of 2002 augmented the committee's responsibility requiring transparency and an internal control structure over financial reporting (Chien et al., 2010).

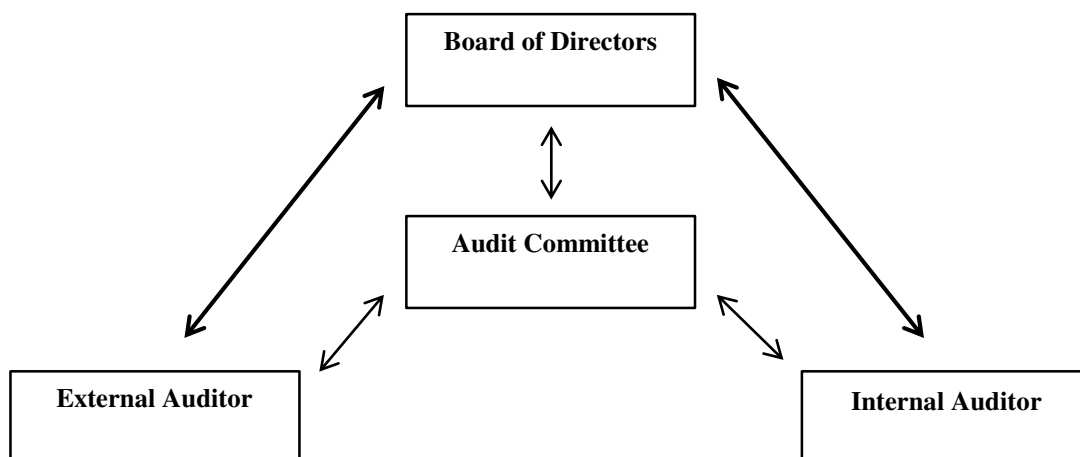


Figure 2. Relationships between parties within a company

Source: Eşkazan, 2003

The audit committee has a significant role within corporate governance, as it serves to oversee and monitor financial reporting activities, internal audits, and external audits (Braiotta, Gazzaway, Colson, & Ramamoorti, 2010). Appointed by the board of directors and accountable to them, the audit committee aids the board of directors in regards to the development and implementation of an applicable framework within an environment suitable for credible financial reporting. It assists the board in matters pertaining to creating or making changes to financial accounting policies essential for meeting the needs of interested parties.

Two important characteristics audit committee members should have when performing their duty is sufficient knowledge and experience. It is also expected that committee chairpersons possess strong leadership and objectivity skills, and committee members to encourage efficient business conduct between management, internal and external auditors (TÜSİAD, 2012).

2.3. Historical Development of Audit Committees

The history of the audit committee dates back to the 1940s, with the well-publicized scandal of McKesson & Robbins. In response to subsequent cases of fraudulent financial reporting following this scandal, a number of reports regarding the importance of establishing an audit committee have been published and will be explored in this section.

2.3.1. McKesson & Robbins

McKesson & Robbins was one of the most prominent and influential frauds of the 20th century. The concept of an audit committee was first globally open to debate in 1939, at the time the McKesson and Robbins case was under investigation. Within months of the discovery of the McKesson & Robbins fraud, in the same year, the American Institute of Certified Public Accountants (AICPA) employed its first standing committee on auditing procedures (Clikeman, 2003).

In the late 1960s, many companies began to establish audit committees. In 1967, AICPA announced that for corporate governance reasons, public companies should appoint audit committees with independent directors to protect public interest and uphold the integrity of the country's financial markets (Sori, Abdul Hamid, Saad, Evans, & Nassir, 2006). Likewise, the New York Stock Exchange (NYSE) strongly urged public companies to establish audit committees during the 1970s. In 1973, NYSE advised every listed company to have an audit committee consisting of three to five independent directors. In December 1976, the NYSE adopted a policy which became mandatory in 1978, stating that every domestic company which has common shares traded on the Exchange must establish an audit committee (The Commission on Auditors' Responsibilities, 1978, p.106). Hence, regulated corporate governance through the use of audit committees began in 1978 with the Cohen Committee audit committee requirements taken into account (Hayes et al., 2005, p.612).

2.3.2. Cohen Commission

In 1978, the Cohen Commission published a report on the proposals for auditor responsibilities and for developing and determining the responsibilities of independent auditors. According to this report, management will present its judgment on the entity's accounting system and controls. In so doing, it will explain the limitations inherent in the control system and the answers to the material errors identified by the independent auditor. The report states that in order to attain and uphold balance in the management and independent auditor relationship, the most effective medium is an audit committee along with a board of directors. (The Commission on Auditors' Responsibilities, 1978, p.106). The Commission considers such measures to be important and believes auditors, regulatory authorities, and boards should take action when needed. Furthermore, depending on the size and conditions of the company, the formation of an audit

committee and a board consisting of independent members is preferred. For audit committees to be effective, they should include competent, independent, and reasonably active outside members of the board. The Commission report emphasizes the importance of the board having independent members and allowing the independent auditor to directly communicate with these members. Moreover, when the board of directors consists of outside members, they can better act in favor of shareholders, supervise management operations, assist the independent auditor, and make modifications in the company (The Commission on Auditors' responsibilities, 1978, p.106). The Commission believes the board of directors, with the help of outside members or an audit committee, should interact with shareholders on the issue of appointing independent auditors. In addition, the Board of Directors should be responsible for evaluating the relationship between the auditor and management.

2.3.3. The US Treadway Commission

In 1978, the US Treadway Commission recommended that there should be strong internal controls for the assurance in prevention and detection of fraud (Hayes et al., 2005, p.614). The internal control guidelines were later published in the Committee of Sponsoring Organizations of Treadway Commission (COSO) Report in 1992. The Commission presented its work on fraudulent financial reporting as a report in October 1987 and several recommendations were made to reduce the number of fraudulent financial transactions in the report. Eleven of these recommendations relate to the establishment and maintenance of a corporate audit committee. Of the recommendations, the report endorses the establishment of audit committees comprised of only outside directors in all public companies (Nowak & Liang, 2003). The Treadway report made it mandatory for companies listed on the NYSE, AMEX, and NASDAQ stock exchange to establish audit committees. The Treadway report identified standards based on best practices rather than general regulations. Hence, the report is regarded as the first official document on the committee's responsibilities.

The Treadway Commission has recommended that the management and audit committee be established to ensure that internal audit is included in the audit of the entire financial reporting process. The Treadway Commission also calls for the Securities and Exchange Commission (SEC) to require companies to disclose annual reports along with audit committee reports each year. The head of the audit committee

should sign the audit committee report which covers the functions the committee has performed.

2.3.4. Committee of Sponsoring Organizations of Treadway Commission

Found in the US in 1985, COSO sponsored the National Commission on Fraudulent Financial Reporting to explore the reasons behind fraudulent financial reporting. The committee also offered recommendations for public companies, independent auditors, educational institutions, SEC, and other regulators (<http://www.coso.org>).

In 1992, COSO created a model for the evaluation of internal controls, which became the generally accepted framework for internal control as well. Many organizations have been using it as a standard to determine how effective their internal control systems actually are. The updated version of the COSO Framework, issued in May 2013, puts emphasis on the position of the board and the audit committee in maintaining a successful control environment and developing a strong risk assessment process which can identify and address fraud risks.

2.3.5. Cadbury Committee

The Cadbury Committee was formed in March 1991 by the Financial Reporting Council, the London Stock Exchange, and the accountancy profession to manage corporate governance. The committee's goal is to help increase corporate governance standards and the degree of assurance in financial reporting and auditing by clarifying the duties of those accountable for achieving this objective (Cadbury Report, 1992).

In 1978, the establishment of audit committees with independent members in all public companies was made obligatory by the NYSE. Strengthening this decision, the American Treadway Commission in its report published in 1987 acknowledged the importance of having audit committees as a means of disclosing reliable financial reports.

The Cadbury Report recommends that audit committees possess the following criteria (Cadbury Report, 1992):

- Audit committees should be established in a formal way and make sure a transparent relationship exists between the committee and the boards which

they are accountable to and which they should report to on a regular basis. Written information should be handed to the members addressing their duties, membership, authority, and number of meetings (at least twice a year).

- The committee should consist of at least three non-executive three members, most of the non-executive members being independent.
- The external auditor should typically be present at audit committee meetings. If they desire, other board members can also attend the meetings. At least once a year, the committee should converse with the external auditors to make sure that all issues are resolved.
- The audit committee should be authorized to delve into any matters within its scope of responsibilities, retrieve resources needed in the process, and should be able to obtain all necessary information with ease. If required, professional advice from outside the company should be accessible.
- The needs of a company should determine the duties that audit committee members will perform.
- If there is an internal auditing department in the company, the audit committee should make sure it has enough resources.
- The chairman should be able to respond to questions pertaining to its tasks at the yearly meeting.

2.3.6. Public Oversight Board

The Public Oversight Board (POB) is an independent body responsible for administering the quality control systems of public accounting firms that audit public companies in the US. In 1994, the POB appointed an Advisory Panel on Auditor Independence to evaluate criticisms about the professionalism of independent auditors and consider how to better assure the reliability and impartiality of their judgments about the implementation of generally accepted accounting principles.

The Panel suggests that boards and audit committees of companies should obtain correct oral reports and independent auditors should deliver these reports promptly in the quality appropriate for financial reporting. The POB is certain that if corporate directors and audit committees support the Panel's recommended practices, there will be more credible financial reporting. The POB advises that audit committees should make

sure their terms of reference include an expectation that financial management and the independent auditor converse with the audit committee their views about the appropriateness of accounting principles and financial disclosure practices (AICPA, 1995).

2.3.7. Blue Ribbon Committee

The SEC, NYSE, and the National Association of Securities Dealers came to an agreement that they would sponsor a Blue Ribbon Committee (BRC) and they released a report called *Improving the Effectiveness of Corporate Audit Committees*. It was formed in September 1998. A few of the recommendations of the BRC include the following (Braiotta et al., 2010):

- The NYSE and the Financial Industry Regulatory Authority (FINRA) should adopt certain define independence for purposes of service on the audit committee for public companies.
- The NYSE and FINRA should oblige listed companies to have an audit committee made up of only independent directors.
- The NYSE and FINRA should require listed companies to have an audit committee made up of a minimum of three directors and at least one member should have expertise in accounting or financial management.
- The NYSE and FINRA should oblige the audit committee of each public company to prepare a formal written charter and it should be reassessed every year.
- The SEC should promote rules that oblige the audit committee of each reporting company to disclose the company's proxy statement and learn whether the audit committee has a written charter and whether it has fulfilled its responsibilities the year before.

2.3.8. Sarbanes-Oxley Act

In the early 2000s, accounting and auditing scandals in big corporations such as Enron Corporation, Tyco International plc, and WorldCom, caused great destruction to investors as well as to the entire public. The huge losses that emerged because of frauds triggered doubt of the credibility of financial statements and turned all attention to

corporate governance. The Sarbanes–Oxley Act (SOX) of 2002 was passed by the US Congress on 30 July 2002. This act was enacted following the various scandals to reclaim the trust in financial disclosures and was meant to increase the responsibility of public companies, audit firms, management of companies, and financial analysts (Peterson & Fabozzi, 2006). In addition, it intended to increase the transparency of financial statements, making it easy for investors to understand the company's situation. According to SOX, the audit committee is required to (Ernst & Young LLP, 2014):

- Evaluate the independent auditor's report which explains the auditor's internal quality control measures, affiliations between the auditor and the company, and contemporary issues along with the initiatives directed towards tackling those issues
- Gather to talk over both annual and quarterly financial statements and disclosures of the company with management and the independent auditor
- Speak about the earnings and press releases of the company
- Evaluate policies regarding assessing and managing risk
- Have meetings periodically with management, independent auditors, and internal auditors only.
- Assess any problems within the company with the independent auditor
- Inform the board of directors routinely

SOX Section 301 improved SEC and US stock exchange rules. SOX necessitates that all audit committee members of listed companies be independent. According to SOX, audit committee members must not be compensated by the company for serving on the committee whether directly or indirectly. Rather, they should only be compensated for being on the board. SOX Section 301 classifies audit committee members as “independent” when they do not receive any kind of fees (consulting, advisory, or other fees) or are not an “affiliated person” of the company.

Section 407 obliges companies to publicize whether they have a financial expert, and if not, to explain the reason. It believes that the presence of a member with financial expertise will place the audit committee in a greater position to better perform duties (SOX, 2002).

As discussed above, a number of reports and regulations have been issued over the years, mostly in the USA, addressing the need for audit committees and the structure it should be built upon. The main innovations brought about by these regulations and the reports leading to the formation of audit committees are shown in chronological order in Figure 3.



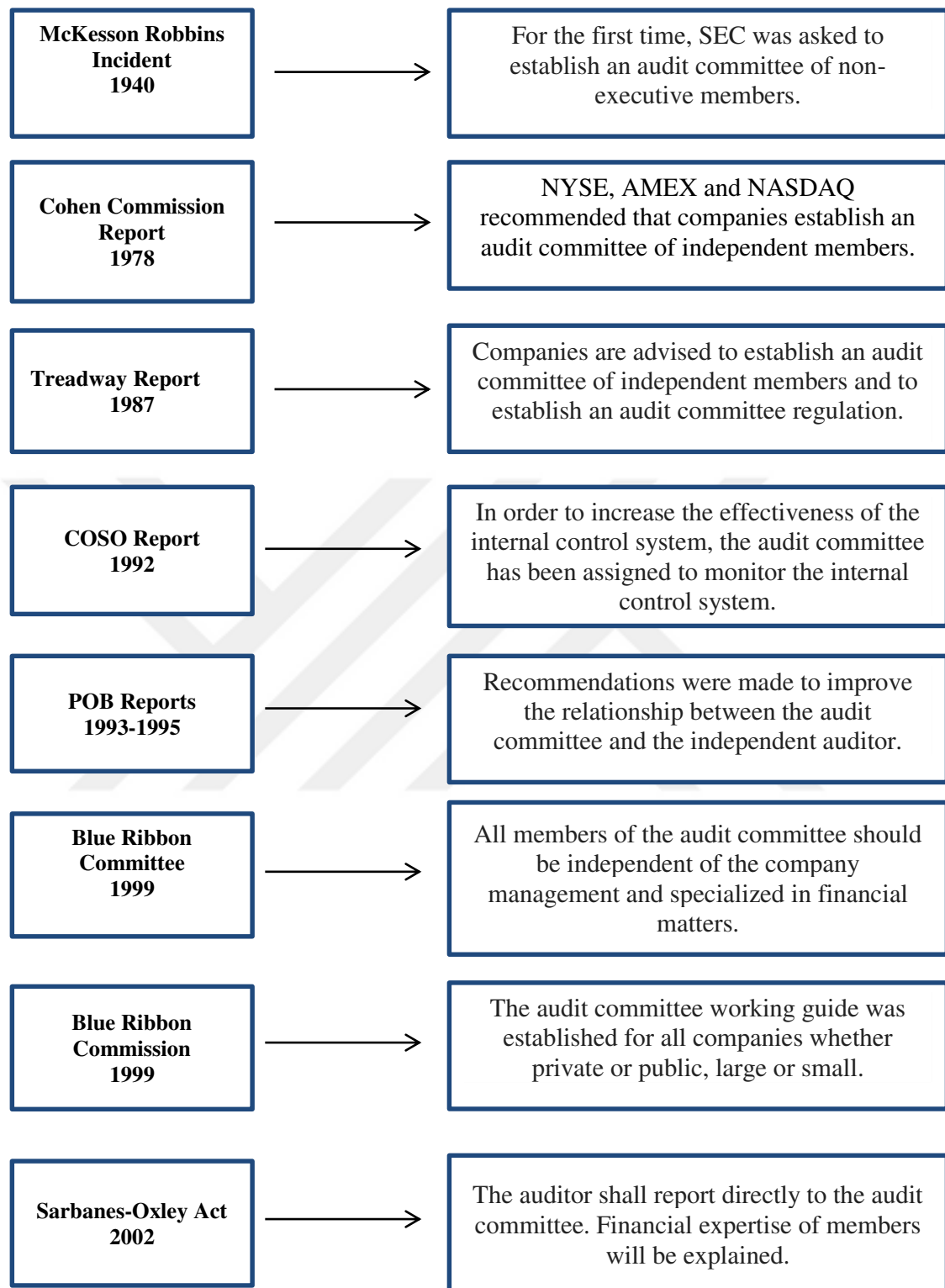


Figure 3. Historical development of the audit committee.

Adapted from *Kurumsal Yönetim İlkeleri ve Denetim Komitesi* (p.113), by M. Demirtaş & S. Uyar, 2006

2.4. Development of Audit Committees in Turkey

In practice, the audit committee is still very new in Turkey. Corporate governance, although not a new concept in Turkey, has recently been introduced in the literature. The Capital Markets Board, Turkish Commercial Code, and Corporate Governance Principles build the foundation which leads to companies in Turkey creating a separate committee called the audit committee.

2.4.1. Capital Markets Board

The first comprehensive regulation in Turkey on the need for an audit committee was brought up by the Capital Markets Board (Çatıkkaş & Yurtsever, 2007). The audit committee was first introduced by the Corporate Governance Principles (CGP) and later brought up by the Capital Markets Board (CMB) in 2003 (Çatıkkaş & Alpaslan, 2013). The CGP in a way familiarized public companies with the audit committee by providing information on their functions, duties, and responsibilities. It was not until 2006 that the establishment of audit committees in listed companies became mandatory after the Communiqué Serial No:22 was released. Subsequently, in 2011, the CMB issued Communiqué Serial IV No. 54 which later was substituted by Communiqué Serial IV No.57 in 2012. This is the latest communiqué on CGP and it slightly alters the structure of the audit committee and brings forth greater independence to it (Nuhoglu & Armağan, 2013). Corporations (except banks) whose shares are traded in the stock market must establish a committee responsible for the audit consisting of at least two members elected from among its members by the board of directors (SPK, Seri:X No:19). Audit committee members are required to be selected among independent board members. The formation of an audit committee for corporations whose shares are not traded in the stock exchange is optional (SPK, Sermaye Piyasası Kurumsal Yönetim İlkeleri, 2012, p. 23). In enterprises where there is no obligation to establish an audit committee, the board of directors does the work of the audit committee (SPK, Seri: X No:22).

According to the regulation on the audit committee by the Capital Market Board for public enterprises (SPK, Seri:X, No:22):

- The audit committee should supervise the accounting system of the corporation, financial information disclosed to the public, independent audit,

and the operation and effectiveness of the internal control system of the corporation.

- The selection of the independent audit firm, the preparation of the independent audit contracts, and the work of the independent audit firm at every stage must be carried out under the supervision of the audit committee.
- The independent audit firm and the services to be obtained from the firm shall be determined by the audit committee, and notified to the board of directors for approval by the general assembly.
- The independent audit firm should notify the audit committee in written form about matters related to the corporation's accounting policy and its practices, alternative practices in consistency with accounting standards and principles, public disclosure options and their possible consequences.
- The methods and criteria to be applied for the examination and evaluation of complaints of the corporation regarding the accounting, internal control system, and the independent audit of the corporation will be determined by the audit committee. The methods and criteria to be applied for the evaluation of notifications regarding accounting and independent auditing will be determined by the audit committee within the scope of the confidentiality principle.
- The audit committee shall notify the board of directors in written form regarding the accounting principles, fairness and accuracy of the annual and interim financial statements that will be disclosed to the public. In doing so, the committee should consider its own evaluations, as well as take the opinion of managers and independent auditors.
- The audit committee can benefit from the opinions of independent experts on matters that it considers necessary in relation to its activities. The cost of the consultancy services needed by the audit committee is covered by the corporation.
- The audit committee shall gather at least once every three months (at least four times a year) and the results of the meeting shall be linked to the records and presented to the management board. The audit committee shall

immediately notify the management board in writing of the findings and proposals that have been received in relation to its duty and responsibility.

- The duties and responsibilities of the audit committee do not remove its responsibility arising from the Turkish Commercial Code.

2.4.2. Turkish Commercial Code

The Turkish Commercial Code No. 6102 was published on the Official Gazette on 14 February 2011 and came into force as of 1 July 2012. Article 366 highlights that the application of the audit committee currently practiced in only publicly owned companies may be extended to all companies in Turkey (New Turkish Commercial Code No.6102 Article 366).

As stated in Article 366, the board of directors may form committees and commissions with the objective of monitoring the course of business, preparing reports regarding matters to be presented to the board, and enforcing decisions taken by the board of directors or for internal audit purposes” (New Turkish Commercial Code No.6102 Article 366). The text of the law clearly states that these committees and commissions may not be established if they are not thought to be necessary. Due to the formation of the audit committee in companies being optional according to the Turkish Commercial Code, its implementation in all companies will take a lot of time.

2.4.3. Corporate Governance Principles of Turkey

The Corporate Governance Principles issued by the Capital Markets Board of Turkey (CMB) consists of four sections which are: Shareholders, Public Disclosure and Transparency, Stakeholders, and Board of Directors.

- There is a section within the Corporate Governance Principles of Turkey which is titled “Committees Created within the Board of Directors”. It states a number of committees that are recommended to be established, the qualifications and requirements of its members, and its duties. To appropriately carry out the duties and responsibilities of the board of directors, an Audit Committee, Corporate Governance Committee, Nomination Committee, the Early Detection of Risk Committee and a Remuneration Committee is established. However, where the board is not

able to establish a separate Nomination Committee, Early Detection of Risk Committee and Remuneration Committee, the Corporate Governance Committee fulfills the duties of these committees.

- The duty areas of the committees, working principles and which members the committees will be composed of is determined by the board of directors and announced to the public.
- All members of the audit committee, and the chairmen of the other committees, are selected from among independent board members.
- An executive chairman or general manager cannot serve in the committees.
- It is recommended for a board member not to work on more than one committee.
- All the sources and assistance required for the committees to fulfill their duties is provided by the board of directors. Committees can invite the manager they need to their meetings and take their views.
- Committees can benefit from the opinions of independent experts in matters related to their activities when needed. The counseling services that the committees need are paid by the company.
- Committees shall keep record of all their work in writing. The meeting frequency of committees is as required for the effectiveness of work and as stated in the working principles. Information related to their work and reports pertaining to the results of meetings are presented to the board of directors.

The CMB regulation has obligated businesses whose stocks are traded in the stock exchange to establish an audit committee. This regulation includes all publicly-funded enterprises, with the exception of banks. Banks are not subject to this Communiqué of the CMB, even if they have been offered to the public. The reason for this is based on the Article 24 of the Banking Law No. 5411 and the "Regulation on Internal Systems of Banks", which is mandatory for all banks, whether they are offered to the public or not. In this Regulation, the working procedures and principles of audit committees for banks, Duties and responsibilities of members of the audit committee and the attributes are described in detail.

The audit committee is responsible for supervising the efficiency and adequacy of the internal systems of the bank on behalf of the board of directors, the performance of internal, accounting, and reporting systems within the context of the law and related regulations, and ensuring the reliability of the information produced (Regulation on Internal Systems of Banks, 2006).

2.5. Functions of the Audit Committee

The functions of the audit committee are shaped by its structure, role attributed to it in the company, requirements with regards to its duties and responsibilities, as well as the financial expertise of its members.

2.5.1. Structure of an Audit Committee

One crucial quality of a good board is being persistent and hard-working in matters of clarifying the board's role, structure, responsibilities, and duties. Members who are aware of what is expected of them will undoubtedly perform better than those who are not. Therefore, an effective audit committee is one in which all members are mindful of their responsibilities, as an outcome of a charter that provides complete information about the committee. With a written charter, the structure, role, and practices of an audit committee can be explained straightforwardly using formal guidelines and other thorough explanations. Transparency in all aspects of governance is especially desired by investors, financial statement users, and the board of directors.

The structure of the audit committee determines the effectiveness of the committee, such that having independent members increases the likelihood of effectiveness in a company. In the regulation of the CMB on corporate governance principles, it is obligatory that all of the committee members should be elected from independent board members.

Although establishing an audit committee is mandatory for only publicly traded companies, it is recommended for all companies. In order for the board of directors to manage business activities efficiently and have vast control over the internal control system, the establishment of an audit committee is advocated even for non-public companies.

A strong communication environment is required between the board of directors and the audit committee. Management should know that the audit committee has an

important role and therefore should consult them before making major decisions. Continuous communication will help build a trust-based relationship between the audit committee and management.

2.5.2. Role of an Audit Committee in a Company

Aside from Turkey, countries such as USA, UK and Canada, Australia, France, New Zealand, Hong Kong, Singapore, India, Malaysia, the Netherlands, and Thailand have either recommended or obliged publicly-traded companies to establish audit committees (Çatıkkaş & Alpaslan, 2013). The audit committee in accordance with the board of directors monitors the internal control, finance, accounting and reporting processes of the company and also sees whether the operations and activities of the business are in compliance with the laws and regulations. Çatıkkaş & Alpaslan (2013) define the role of an audit committee as a committee that assists management, facilitates the disclosure of authentic financial reports by monitoring the financial reporting process, safeguards the interests of partners by preventing error, fraud, and management's failures, and finally observes the works of the independent auditor and internal controls while helping them as well. However, the creation of an audit committee does not mean the legally taking over of the duties and authorities of a single decision-making and responsible management board. The audit committee also has the task of supervising management together with the task of supervising and providing guidance to the management board (Külte, 2013).

Figure 4 illustrates the role of the audit committee within a company and its relationship with various stakeholders. The audit committee oversees and monitors the independent auditors and internal auditors, maintaining an independent environment. As shown in Figure 4, it reports to the board of the directors, which then reports to the external environment consisting of stockholders, credit grantors, regulatory agencies, and the public.

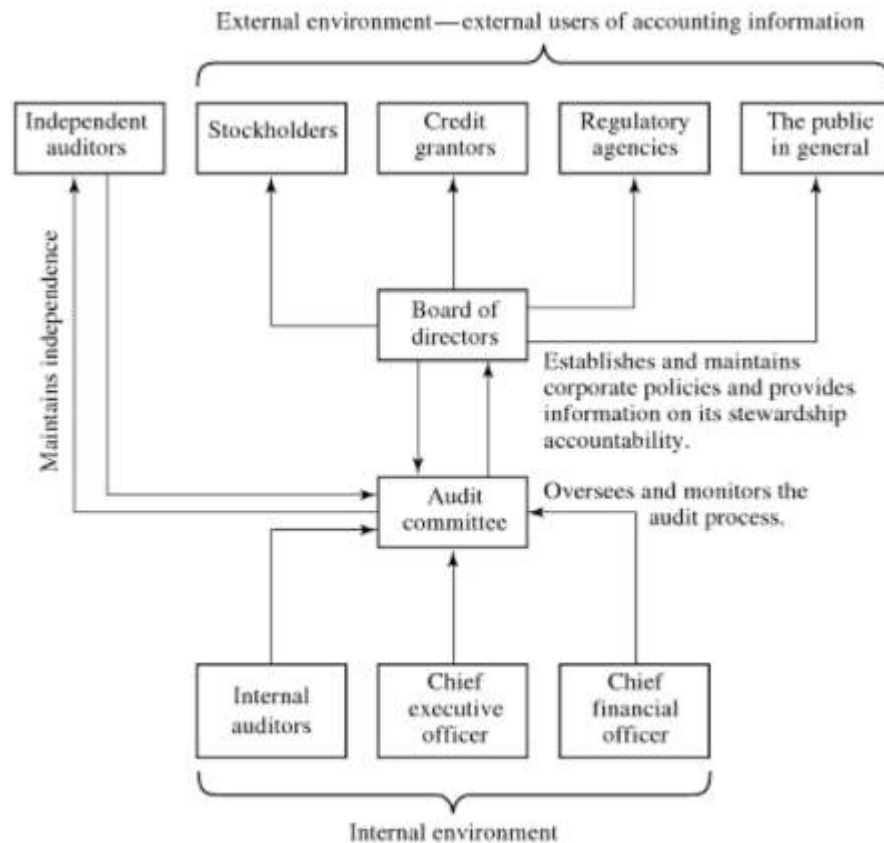


Figure 4. The audit committee's accountability relationship

Source: Braiotta et al., 2010

Figure 1 indicates that the audit committee oversees and monitors the audit process in the internal environment and independent auditors. The audit committee then reports directly to the Board of Directors which later provides information to the external environment.

As stated in Sections 205 and 301 of the Sarbanes-Oxley Act of 2002, three roles of audit committees are mentioned (Braiotta et al., 2010):

- Supervise the company's accounting and financial reporting processes and its financial statement audits.
- Employ, compensate, and monitor the external auditor.
- Create measures for receipt, retention, and treatment of complaints regarding accounting, internal control, or auditing matters.

Shareholders typically demand sufficient, accurate and timely information from management regarding the financial situation of the company. They desire to know how the company they have invested in is performing and whether its future is profitable. In such cases, the audit committee eases the burden of the management board by providing shareholders with the necessary information. An audit committee is established when there is a need for the board to fulfill its responsibility to ensure that an adequate control system exists and is maintained. In addition, the audit committee strengthens the internal control system, internal audit activities, and better supervises the independent external auditor.

2.5.3. Audit Committee's Duty and Responsibilities

The primary responsibility of the audit committee is to assist the Board of Directors in carrying its duties related to the company's accounting policies, internal audit and financial reporting (Çatıkkaş & Yurtseven, 2007).

In 1939, when the committee first started to be implemented, the duties and responsibilities of the audit committee started with reviewing the audited financial statements of the company, making proposals for the board of directors, monitoring the relationship between the internal auditor and the independent auditor, and reviewing the reports submitted by the internal audit to the management.

According to the Treadway commission report, the company should be well-informed about the internal control system and financial reporting process, should conduct the necessary reviews, and work with independent auditors and internal auditors in this process. The committee should work on situations that may affect auditors' selection process and independence of auditors. In addition, institutional practices aimed at preventing fraud and corruption should be observed. Some responsibilities audit committee members should have are (TÜSİAD, 2012):

- Have knowledge about the company's goals and have a say on important agenda items,
- Know the organizational structure and culture of the company,
- Possess knowledge, competence and experience in technical issues related to accounting, risk management, auditing and company activities,
- Know the sector in which the company is located,

- Be familiar with national and international legislation and all other rules that the company is subject to,
- Have sufficient knowledge to understand financial results and activities,
- Have time and commitment,
- Understand the risks that the company faces and the controls that are identified with those risks, and
- Have a broad perspective on the company by going beyond financial and technical information.

2.5.4. Independence of an Audit Committee

Various countries have made it obligatory for their companies to establish audit committees, comprised up of either a majority or entirely of independent members, as is the case in Turkey. The term *independent* is classified and defined differently when associated with committees in different countries. Generally, the laws that are promulgated in favor of establishing an audit committee provide a list of requirements which highlight the qualifications that must be met to be classified as an independent member.

The CMB required listed companies to establish audit committees consisting of at least two members selected from among independent board of directors in 2006 (SPK, Seri:X No:19). The boards of many companies in Turkey are made up of a mix of non-independent and independent members. The Corporate Governance Principles of Turkey, which was first issued in 2003 and later amended in 2012, has clarified the criteria of an independent board member as follows:

- Not to have any direct or indirect relationship of interest in terms of employment, trade or capital, and commerce with the company, its affiliates, or subsidiaries and himself/herself, his/her spouse and his/her blood or affinity relatives by up to the second degree within the last five years,
- Not to be employed in an audit or consultant firm, which engages in any kind of activity and organization with the company and not to have served as a board member there within the last five years,

- Not to be an employee, partner, or board member in any of the firms which provide substantial services and products to the company within the last five years,
- In the case where the board member is also a shareholder, his/her share being not more than 1% and not privileged,
- The independent board member should have professional education, knowledge and experience to fulfill duties as required,
- Appropriate with the legislation the member is bound to, not working full-time (except for university lecturers) after being selected as a member of public institutions and organizations,
- Having settled in Turkey according to the Income Tax Law,
- Possessing strong ethical standards, professional reputation, and experience by which they will provide positive contributions to the company's activities, safeguard their impartiality in conflicts of interest between partners, and freely decide taking into account the rights of stakeholders,
- Devoting the necessary amount of time in the company to track the operation of company activities and fulfill the requirements of the tasks it undertakes.

2.5.5. Financial Expertise

The Sarbanes-Oxley Act of 2002 (SOX) states some rules in section 407 about appointing an audit committee financial expert in a listed company. This act requires public companies to announce whether they have a financial expert as part of the audit committee. In the case where there is not a financial expert in the committee, the company must disclose the reasons lying beneath this decision. The U.S. Securities and Exchange Commission (SEC) defines a “financial expert” as an individual who has education and experience as a public accountant, auditor, controller, or a principal financial/accounting officer. In addition, a person who is not classified as one of the above can still be a financial expert if they are able to comprehend the generally accepted accounting principles and financial statements. Furthermore, a financial expert is one who has experience in preparing or auditing financial statements, in the application of GAAP, with internal accounting controls, and audit committee functions. BRC (1999) defines financial expertise as experience from being previously employed in a finance or accounting position, obligatory professional certification in accounting,

or similar experience or background that makes an individual financially sophisticated, such as being or having been a chief executive officer or other senior officer partaking in financial oversight responsibilities. It states that the audit committee should include a total of three financially literate members and one member with financial management expertise (Nuhoğlu & Armağan, 2013).

The CMB of Turkey does not have any financial expert member requirements for the audit committees of public companies. However, possibly having one or more members possessing the qualifications above as opposed to ordinary members with no skills most certainly will have a significant positive effect on Turkish companies. Therefore, the CMB should consider amending the communiqué on the subject of the audit committee member characteristics to include financial expertise as one of the necessities.

An ideal audit committee is one which includes independent and experienced members who are cognizant of their role, duty, and responsibility within a company. The audit committee is of particular importance for users of the financial statements, particularly for shareholders, not only because it affects the quality of financial reports, but also, is likely to affect the financial performance of the companies.

CHAPTER III

FIRM PERFORMANCE

3.1. Introduction

In the business environment, corporate governance and firm performance is interconnected, such that with better and more effective corporate governance mechanisms, higher firm performance can be achieved. An evident increase in firm performance most certainly results in more investment and a maximization of company funds (Al-Matari, Al-Swidi, & Fadzil, 2014, p.26). Performance is one of the most important factors investors evaluate before investing in international companies. With many well-operating companies in the market, there are many options to choose to invest in. Therefore, those interested seek assurance and make a decision by studying the company beforehand, paying utmost attention to its performance.

There is a large amount of financial information about companies that can be readily accessed by financial analysts and investors. Analyzing financial information is most often called financial analysis, the act of selecting, evaluating, and interpreting financial data and other related information to help in assessing the company's performance and financial condition (Peterson & Fabozzi, 2006, p.4). Financial analysts use information disclosed in annual reports of companies, press releases, and related reports. As a tool of financial analysis, financial ratios are a method of evaluating firm performance and its values can be utilized by all stakeholders of the firm. By using information derived from financial statements, financial ratios are easily computed to show the financial situation of companies. Financial ratios also allow companies to compare their ratios with the ratios of other companies in the industry, between industries, or within themselves. They are only informative when analyzed with other financial ratios and standards. Using these financial ratios, comparisons can be made across companies within an industry, between industries, or within a firm itself utilizing previous-year ratios. Furthermore, when there is a variety of different sized companies in the industry, financial ratios can be helpful in comparing their relative performance. Without comparison, the ratios yield no meaningful result.

3.2. Financial Performance and Measurement Methods

For a company to be able to sustain its existence and to gain a competitive advantage over other companies is crucial for its competitive stance in the market. The ability to sustain in such an environment, undoubtedly determines the company's future and long-term success. Performance measurement gives the opportunity for an organization to evaluate its progress in the path of reaching its planned and targeted objectives, detect areas of strengths and weaknesses, and ease future efforts on increasing performance (Yasin & Gomes, 2010). While affecting the strategic decisions of businesses, it also determines the direction that will be taken in the future. Both financial and non-financial measures can be used for the purpose of assessing firm performance. However, financial measures are used more frequently among firms to acquire knowledge of their current situation. This analysis, when performed properly, can display the performance of the business and becomes of importance to managers and potential investors alike.

Nearly all organizations measure performance, sometimes systematically, other times occasionally. Performance is the qualitative or quantitative evaluation of all planned efforts and results for the achievement of the objectives (Akman, Özkan, & Hatice, 2008, p.94). It is the ability to obtain outcomes within a defined timeframe for specific targets and priorities. Moreover, performance measurement in general is described as the quantification of the efficiency and effectiveness of an action (Gunasekaran & Kobu, 2007). Some reasons that lie behind performance measurement can be listed as follows (Parker, 2000, p.63):

- Identify success;
- Ascertain whether customer requirements are met;
- Make organizations familiar with their processes;
- Demonstrate where problems are located and where improvements are needed;
- Confirm that all decisions are based on true information; and
- Evaluate the implementation of improvements planned beforehand.

Firm performance is a term used generally to express the achievements attained in the course of accomplishing certain targets within a certain period of time and along

with the circumstances that occur in this process, while also depending on environmental factors (Çalık, Altunışık, & Sütütemiz, 2013). A number of different ratios can be, and have been, used as a tool to measure and assess the performance of firms.

3.3. Liquidity Ratios

In terms of financial analysis, liquidity denotes the ability of a company to easily convert its assets into cash to meet its short-term obligations (Peterson & Fabozzi, 2006, p.100). Liquid assets, or those assets that are quickly converted into cash, appear in the balance sheet as current assets. These assets are normally used by companies to meet their short-term liabilities, which is important for the sustainability of companies. As a matter of fact, a company that is unable to pay its short-term debts will not be able to pay its long-term debts (Arkan, 2016). Two liquidity ratios always used by companies are current ratio and quick ratio.

3.3.1. Current Ratio

The current ratio is basically current assets divided by current liabilities and it shows the ability of a company to pay its short-term debts. It is defined as (Moyer, McGuigan, & Rao, 2007):

$$\text{Current ratio} = \frac{\text{Current assets}}{\text{Current liabilities}}$$

3.3.2. Quick Ratio

The quick ratio, often referred to as the acid test ratio, is fairly similar to the current ratio. The only difference is that it deducts the inventory value from the current assets value in the numerator (Peterson & Fabozzi, 2006, p.105).

$$\text{Quick ratio} = \frac{\text{Current assets} - \text{Inventory}}{\text{Current liabilities}}$$

The reason behind deducting inventory from current assets is to remove the asset that is the least liquid out of all other current assets to reach a conclusion on whether a

company can fulfill its current liabilities with only its most liquid assets. Obtaining a large value for both liquidity ratios is favorable for a company because it signifies that a company can pay off its short-term liabilities with its current assets, without resorting to its long-term assets. Nevertheless, very high liquidity ratios can indicate that a company has invested in current assets to a large extent and therefore, is not making use of its assets effectively.

3.4. Profitability Ratios

When measuring firm performance, profitability ratios are one of the first measures that stakeholders look for to assess the company. In fact, Return on Assets (ROA) and Return on Equity (ROE) are the most commonly mentioned performance measures (Peterson & Fabozzi, 2006, p.203). Investors, shareholders, top management, and other interested parties are fascinated with companies that have the ability to successfully create, sustain, and increase profits over a long period of time. They usually are accounting-based and often involve the division of values found on income statements and balance sheets by each other. The profitability ratios of other companies, the general condition of the economy, and the effects of inflation are taken into account in the process of evaluating these ratios.

The income statement displays profit in many levels, so it is important to know which profit value must be used in the calculation of firm performance measures. For instance, in some calculations, net income after taxes is used and is found by deducting the costs of all goods and/or services, period expenses, taxes, and other liabilities from net sales. Also, since depreciation, tax, and other liabilities that are not in the control of the company, profitability ratios may vary among companies and from period to period within the company. This variation may lead to incorrect inferences and give a distorted image of the company's situations.

Although profitability ratios are commonly used to measure the performance of firms, it is also criticized in many ways for reasons such as being open to manipulation, using past data in calculations, and disregarding risk and cost of capital. Nonetheless, performance measures are continued to be employed for many years because they are easily accessed and calculated, as opposed to other complicated performance measures.

3.4.1. Return on Assets

Return on assets (ROA) is one commonly used measurement of firm performance and has been frequently employed in previous academic studies. This profitability ratio shows how efficiently the firm exploits its total assets in order to produce its products and earn revenue (Çetenak, 2012). ROA is computed by the division of net profit after taxes from the income statement by total assets from the balance sheet. The formula is additionally shown below (Nuhu, 2014):

$$ROA = \frac{\text{Net profit after taxes}}{\text{Total assets}}$$

A high ROA is always desirable and is vital when measuring performance because it shows that the firm is able to utilize available assets to create added value. The greater the coefficient of ROA, the more likely it is that the company's assets have been successfully used to generate profits. It is also worthy to note that the asset structure of a company may vary depending on the sector in which it operates, which is why it's preferable to compare the ROA ratios of companies from the same sector to get more accurate results.

3.4.2. Return on Equity

Another firm performance indicator is Return on Equity (ROE), which is an accounting measure that represents the ability of a company to earn a return on its invested capital (Nuhu, 2014). It measures how much profit is generated for each currency unit of shareholders' equity. This ratio is calculated by dividing the net profit after tax value from the income statement of the company by the equity value from the balance sheet. ROE is defined as (Monea, 2009):

$$ROE = \frac{\text{Net profit after taxes}}{\text{Shareholder's equity}}$$

ROE allows investors to gain information on whether they are getting a good return on their investment, and it gives the opportunity for companies to gauge how efficiently they are exploiting shareholder's equity. This calculation can be used in comparing current ROE values to historical ROE values of the company and to the

industry's ROE average. A high ROE in comparison with the industry's ROE average would indicate that the company has a significant competitive advantage over other companies. Furthermore, it can suggest that a company is good at generating shareholder returns by means of reinvesting its earnings in valuable high-quality assets, whereas a low ROE can indicate that the company is poorly investing capital in assets.

3.4.3. Net Profit Margin

Net Profit Margin is one of the most fundamental ratios used to measure the profitability of sales. Basically, it shows the percentage of revenue remaining after deducting all expenses from sales. Using this measurement, the amount of after-tax profit that a business can obtain for every currency unit it generates in revenue or total sales is realized. Net sales can be found by subtracting all kinds of sales deductions from gross sales. Net Profit Margin can be expressed with the following formula (Moyer, McGuigan, & Rao, 2007):

$$\text{Net Profit Margin} = \frac{\text{Net profit after taxes}}{\text{Net sales}}$$

This ratio gives some implications regarding the efficiency of business operations and the extent to which policies on financial issues such as pricing or reimbursement are as should be. Just as other profitability ratios, profit margins vary between different sectors and industries, but a high net profit margin is always desired by companies.

3.4.4. Return on Capital Employed

Return on Capital Employed (ROCE) is a long-term profitability ratio that demonstrates how well a company can generate profits from its capital employed. The result shows how much in profits is made with each currency unit of capital employed. It also takes long-term financing into account which explains why it's useful for those who wish to evaluate the longevity of a company. The ROCE formula uses operating profit, also referred to as EBIT or earnings before interest and taxes, instead of net income. EBIT illustrates the amount earned from merely operations, and can be found by deducting cost of goods sold and operating expenses from revenues. Capital

employed is generally described as total assets minus all current liabilities. ROCE formula is as follows (Singh & Yadav, 2013):

$$ROCE = \frac{\text{Earnings before interest and tax (EBIT)}}{\text{Capital employed}}$$

ROCE is mainly beneficial for companies with high debt and in capital-intensive sectors because it considers both debt and other liabilities. A high ROCE means the company is efficiently using its employed capital. The ROCE value should exceed the rate at which a company borrows in order to prevent a reduction in shareholders' earnings (Vasilescu, 2011).

3.4.5. Earnings Per Share

As its name suggests, the Earnings Per Share (EPS) ratio is all about the earnings generated by the business for its shareholders during a specific time period. It shows how much profit is earned for every outstanding share after the business has fulfilled its activities and obligations. The International Accounting Standards Board (IASB) defines EPS in its International Financial Reporting Standard as the company's net after-tax earnings of equity shareholders divided by the number of outstanding shares (IFRS, 2018). Theoretically, shares are divided into ordinary shares and preference shares. EPS is calculated using ordinary shares, usually referred as common shares, where the number of preference shares is not included. EPS is computed as follows (Seetharaman & Raj, 2011, p.115):

$$EPS = \frac{\text{Net income belonging to equity shareholders}}{\text{Total number of outstanding common shares}}$$

This ratio is especially important potential investors in the business because it determines whether business activities will ensure enough income to the company's owners or partners. In many cases, investors consider the Earnings per Share ratio as an appropriate indicator of stock performance by studying the trend of the ratio over the course of multiple years. In general, most investors are interested in the quality of earnings rather than fluctuating profits. Instead of a rapid growth in profits, investors

desire a steady and non-volatile growth. To be able to compare EPS of a company for the current year with its previous years and with other companies depends on the accuracy of financial data employed in the computation. As is known, the number of outstanding shares cannot be changed, whereas the net profit figure can be manipulated from time to time in favor of the company's interests (İçten, 2015).

3.5. Cash Flows

As previously mentioned, depending only on certain items from the balance sheet and income statement for measuring firm performance can often produce erroneous results due to the accounting policies of financial statements and their openness to managerial manipulation. Using the statement of cash flows in some cases provides more reliable information. For example, when analyzing the liquidity of a company, cash flow information may be a better choice to use because it records the changes in the other statements and shows the amount of cash available for operations and investments. On the other hand, balance sheet information is static, demonstrating the company's financial situation at a point in time. Likewise, the income statement consists of non-cash values such as depreciation and amortization (Ryu & Jang, 2004).

The Statement of Cash Flows is a vital performance measurement containing information related to a company's liquidity, growth, and profitability. According to International Accounting Standards, this statement is divided into three segments:

- Cash flow resulting from operating activities.
- Cash flow resulting from investing activities.
- Cash flow resulting from financing activities.

That is, cash flows can be generated from operating, investing, and financing activities. Operating activities are activities excluding investing and financing that produce revenue and include cash taken from customers and cash paid to suppliers and employees (iasplus.com, 2018). Investing activities are related to the purchase and sale of long-term assets and other investments that are not regarded as cash equivalents (iasplus.com, 2018). Financing activities are activities that change the equity capital and borrowing structure of the company (iasplus.com, 2018).

Mills and Yamamura (1998) believe that the most useful cash flow ratios can be categorized into two: solvency and liquidity ratios and those that can be used on a constant basis to evaluate a company's strength. For the first category, they list operating cash flow (OCF), funds flow coverage (FFC), cash interest coverage (CIC) and cash debt coverage (CDC). For the second category, they are convinced that total free cash (TFC), cash flow adequacy (CFA), cash to capital expenditures and cash to total debt ratios are beneficial.

3.6. Market Value Ratios

Market-based ratios are utilized to assess the current share price of a publicly-held company's stock. They are exploited by existing and potential investors to find out if a company's shares are over-priced or under-priced. These ratios are also used to compare similar companies operating in the same sector. The three most common stock market ratios are Market-to-Book, Price-to-Earnings, and Tobin's Q ratios. Market ratios point towards a firm's performance in relation to the price of its shares as well as dividends and the number of shares in issue (Masa'deh, Tayeh, Al-Jarrah, & Tarhini, 2005).

3.6.1. Market-to-Book Ratio

The Market-to-Book ratio's purpose is to determine the value of a company by means of comparing the market value of a company to its book value. The market value is the current stock price of all outstanding shares, or basically, how much the market labels as the company's worth. On the other hand, the book value is the net amount that would remain if the company sold all of its assets and repaid all of its liabilities. In short, the book value is equivalent to the net assets of the company and can be attained from the balance sheet. To finish off, the ratio is used to compare a business's existing net assets with regards to the sales price of its stock. This ratio is calculated with the formula below (Sarwendhi & Samekto, 2014):

$$MB = \frac{\text{Market Value}}{\text{Book Value}} \times 100$$

Where:

Market Value = Share price × the total number of shares outstanding

$$\text{Book Value} = \text{Assets} - \text{Liabilities}$$

If the market-to-book value ratio is less than one, the stock is inexpensive and a profitable return can be achieved with the purchase of the stock. However, if the ratio is greater than one, the stock is considered expensive and it is better to sell it off. This ratio is generally used by investors to value insurance and financial companies, real estate companies, and investment trusts. It displays how the market perceives a specific stock's value.

The market-to-book ratio can be calculated by dividing the current closing price of the stock by the book value per share as well.

3.6.2. Tobin's Q

This market-based ratio was first found by Nobel laureate James Tobin in 1969 and unlike many accounting measures depicts the value of a firm as a whole. The Tobin's Q ratio is a criterion used to measure financial performance by dividing the firm's market value by the cost of replacing its assets (Canbaş, Doğukanlı, Düzakın, & İskenderoğlu, 2005). It is a good measurement to evaluate firm performance because it reflects the past, current, and future performance of the company. This ratio was first proposed by Tobin in 1969 and later studied by other researchers. The idea behind such a ratio is that more economic value is created by well-performing firms for a certain amount of assets (Dezsö & Ross, 2012).

As mentioned previously, some researchers have worked with this ratio and have developed different approaches in calculating it. However, amongst the ratios brought forth, Chung and Pruitt's (1994) method of calculating Tobin's Q is the most practical. The reason lying behind this opinion is that it is quite difficult to calculate the replacement cost of assets in Turkey (Canbaş et al., 2005). Since Chung and Pruitt consider the book value of total assets as their replacement value, the ratio is computed easily. They have calculated the approximate Tobin q ratio as follows (Chung & Pruitt, 1994):

$$\text{Approximate } q = \frac{MVE + PS + DEBT}{TA}$$

Where:

MVE = a firm's share price $\times$ number of common stock shares outstanding

PS = the firm's outstanding preferred stock

DEBT = firm's short-term liabilities net of its short term assets + book value of long-term debt

TA = book value of total assets

Tobin's Q ratio shows whether companies are more valuable than they are in the market or have less value than they should be. The Tobin Q rate gives information about the past and future performance of companies, as the company uses both accounting and market data. Having a Tobin's Q ratio less than one means the marginal return of investment is below the cost of capital. Having a Tobin's Q ratio more than one means that the company has a high competitive advantage. Such companies are preferred companies for equity investors. The Tobin's Q ratio gives information to investors related to the growth opportunities of the company. Having a ratio equal to one indicates that the investment opportunities of a firm are equal to the cost of capital. In this situation, investors remain unaware of the prospects for growth and the company's growth potential (Canbaş et al., 2005).

3.6.3. Price-Earnings Ratio

Price-Earnings (P/E) ratio is another well-known ratio for valuing a company's stocks and denotes the relationship between profit per share and the stock price of the stock. It basically measures a company's current share price relative to its per-share earnings and is mostly preferred by investors and potential investors. P/E ratio can be computed using the following formula (Shen, 2000):

$$P/E = \frac{\text{Market price per share}}{\text{Earnings per share}}$$

This ratio can yield meaningful results when compared with the ratios of similar companies, which perform in the same sector of business. A high P/E ratio signifies an expectation of significant growth in future earnings for investors, while a low P/E ratio suggests an expectation of lower growth in future earnings (Ghaeli, 2017). As with

many other ratios, a company's P/E ratio provides meaningful results when compared with the related ratios of other companies in the same sector.

3.7. Value-Based Performance Measurements

Value-based performance measures generally focus on the income of shareholders. In this thesis, three value-based performance measurements (Net Present Value, Economic Value Added and Market Value Added) are explained.

3.7.1. Net Present Value

Net present value (NPV) is a formula which takes the time value of money into account. Such that, it gives an estimate of the amount a potential project will add to shareholder wealth (Brigham & Houston, 2007). Briefly, it assumes that money spent or received in the present does not have the same value as money spent or received in the future (Law, 2004). It is the difference between the present value of cash inflows and the present value of cash outflows over a certain period of time. A positive net present value denotes that the projected earnings created by a project or investment (in present dollars) exceed the anticipated costs (also in present dollars). In general, a positive NPV indicates that the investment will be profitable, while a negative NPV indicates a future loss. The present value of the expected cash flows is found by discounting them at the required rate of return. NPV is computed with the following formula (Zizlavsky, 2014):

$$NPV = \sum_{t=0}^n \frac{NCF_t}{(1+r)^t}$$

Where:

NPV= net present value

NCF_t = net cash flow generated by project in year t

r= discount rate

3.7.2. Economic Value Added

One of the most widely adopted financial performance measurements by firms today is EVA and is one of the best in depicting the true economic profit of a company.

Introduced by Stern Stewart & Company, EVA emphasizes shareholder wealth and how much economic value management is able to add for the shareholders. It is the difference between net operating profit and cost of capital invested in an enterprise. The formula used to compute EVA for a given period is as follows (Vijayakumar, 2011):

$$\begin{aligned} \text{EVA} &= \text{NOPAT} - \text{Cost of Capital Employed} \\ &= \text{NOPAT} - (\text{WACC} \times \text{CE}) \end{aligned}$$

Where:

NOPAT= Net Operating Profit After Taxes

WACC=Weighted Average Cost of Capital

CE=Capital Employed

A positive EVA means the company creates shareholder wealth, while a negative EVA means that shareholder wealth is destroyed (Shil, 2009).

3.7.3. Market Value Added

Market Value Added (MVA) is another measure similar to EVA which evaluates whether the company has created shareholder value. The difference between the two is that while EVA measures shareholder value added of a company with regards to its economic performance, MVA presents the market's assessment of a company's value (Vijayakumar, 2011). It is fairly easy to compute; it is found by deducting capital from the market value of the firm (Peterson & Fabozzi, 2006, p.221).

$$\text{Market value added} = \text{Market value of the firm} - \text{Capital employed}$$

What is meant by market value is the market value of the public firm's equity (number of shares outstanding multiplied by their share price) in addition to the book value of debt. Moreover, the capital employed value in the formula simply refers to the book value of debt and equity. Hence, the formula becomes:

Market Value Added (MVA) = Market value of equity - Book value of equity
When the total market value of a company exceeds the amount of invested capital, the company has created shareholder value. On the other hand, when the amount of

invested capital exceeds market value of a company, shareholder value is destroyed. It primarily illustrates how the company's management has used its invested capital and whether it was able to increase added value (Peterson & Fabozzi, 2006, p.221). As with other ratios, evaluating performance can be done by comparing the MVA of a company for a specific year with previous years. Looking at the change in MVA over a period will always provide more useful results.

Briefly, financial performance of companies may be assessed using liquidity ratios, profitability ratios, cash flows, market value ratios, and value based ratios. Most of the ratios examined have been used by researchers who performed studies on the audit committee.



CHAPTER IV

LITERATURE REVIEW ON THE IMPACT OF THE AUDIT COMMITTEE ON FIRM PERFORMANCE

Performing a literature review is essential for any type of study because it displays all the relevant sources (books, articles, theories) related to a particular area of research. It gives an idea of what, why, and how studies were performed in the previously. In this part of the thesis, first the main theories that are associated with the research to be undertaken in this study are reviewed, followed by a review of the prior studies and ending with tables summarizing the works.

4.1. Main Theories

Researchers have linked corporate governance with financial performance using a number of theoretical frameworks. The main theories that are commonly encountered in studies are The Agency Theory, Stewardship Theory, Stakeholder Theory, and Resource Dependence Theory. Hence, these theories form the theoretical framework by which the relationship between audit committee characteristics and firm performance will be examined.

4.1.1. Agency Theory

The corporate scandals that have occurred over the twenty-first century have highlighted that it is quite challenging for shareholders to effectively control managers. Thus, they rely on a proper corporate governance system to fulfill this duty so as not to encounter a conflict of interest between the two parties (John and Senbet, 1998). Corporate governance is usually associated with the agency theory because it addresses the principal-agent problems in companies. The board of directors plays an important role by acting as a monitoring mechanism, reducing the conflicts that occur in a relationship where the principal is the owner and the agent is the manager of the company.

Jensen and Meckling (1976) define an agency relationship as a contract whereby one or more individuals known as the principal(s) appoint another individual known as an agent to act on their behalf, which involves giving the agent some authority in

decision making matters. Such a relationship can be observed in all types of organizations such as in mutual companies, governmental organizations, universities, unions, and in all other organizations managed by people. This theory proposes that the agent will not take measures in favor of the principal's best interests, especially in the case where both parties of the relationship are those who maximize utility. Jensen and Meckling further continue stating that by incurring monitoring and bonding costs, the principal is able to limit the agent's activities to a certain extent. For the purpose of avoiding deviant behavior and activities, the principal is subjected to monitoring costs. They assert that without incurring any costs, it is not possible for the agent to act in the principal's best interest. Consequently, they describe agency costs as the accumulation of monitoring expenses by the principal, the bonding expenses by the agent, and the residual loss. Although agency costs may be a burden for both the principal and agent, both parties are able to exploit a number of information systems and control devices to reduce agency costs related to information asymmetry (Jensen and Meckling, 1976). Pincus, Rusbarsky, and Wong (1989) claims that when there are high agency costs, forming an audit committee is beneficial because an increase in monitoring. He then puts forth that audit committees are an efficient and effective way of reducing information asymmetries that have occurred internally and externally.

With the principal-agent relationship, firms can achieve a higher performance and enhance shareholder wealth. There has been some research carried out on the subject of audit committees based on the agency theory. McMullen (1996) discovers that there is a positive relationship between the existence of an audit committee and the reliability of financial statements. Felo, Krishnamurthy, and Solieri (2003) found a positive relationship between audit committee size and quality of financial statements.

4.1.2. Stewardship Theory

Contrary to what the agency theory claims, the stewardship theory has a quite different approach. It emphasizes that the executive manager fundamentally has good intentions and wishes to protect corporate assets in the best way possible (Donaldson and Davis, 1991, p.51). Managers are believed to be good stewards, as the theory's name suggests, who will behave and act in favor of shareholders. Under this theory, the manager's ultimate goal is to maximize firm performance because when the firm is performing well, the manager is satisfied in terms of having achieved and succeeded in

acting as a component of the success (Kyereboah-Coleman, 2008, p.4). In circumstances where firm performance is not as desired, the structural situation in which the manager is placed in is believed to be the reason of the performance variations. When the organizational structure of firms is supportive and helpful with respect to facilitating the implementation of plans and aiding in the achievement of objectives, the firm is more likely to perform well. Hence, the stewardship theory emphasizes facilitative, empowering structures, and the cooperation of CEO and chair members in being effective and providing greater returns. One way of establishing such a structure is by adopting good corporate governance principles that all personnel are familiar with. What differentiates this theory from the agency theory is that it places a greater trust on managers and does not support the idea of managerial opportunism, the self-serving behavior of managers.

4.1.3. Stakeholder Theory

Having separated ownership and control, the matter of corporate governance is basically related to the way stakeholders control management. Stakeholder theory asserts that regardless of the goal of the organization, the interests of those groups and individuals who can affect or be affected by their activities must be considered (Freeman, Wicks, Parmar, 2004). It defines the role of corporate governance by including all the stakeholders of the organization such as customers, employees, creditors, suppliers, shareholders, banks, and governments. This theory essentially explains that organizations must create value for not only shareholders, but all stakeholders while also keeping their interests in balance and inclined towards the same direction for ultimate success and sustainability. While the agency theory considers shareholders as the only interest group of an entity, the stakeholder theory has a wider scope of interested parties and believes that organizations wish to attain a balance between the interests of its different stakeholders, so that each stakeholder is somewhat satisfied (Kyereboah-Coleman, 2008, p.4).

4.1.4. Resource Dependency Theory

This theory posits that organizations generally have a tendency to lessen the uncertainty of external influences by making sure that resources are available for their existence and growth. The amount of information accessible creates the strength of the

organization. Each organization may have some resource that is distinct and this allows an environment of organizations that have an interdependent relationship. The level of the dependence may vary according to the importance of the resource(s), the relative shortage of the resource(s) and the extent to which the resource(s) is concentrated in the environment (Donaldson and Davis, 1991). This theory also supports having directors on multiple boards because a wide range of information can be collected which can then be used for the advantage of the firm (Yusoff and alhaji, 2012, p. 57).

4.2. Prior Studies

Several studies were undertaken to assess the impact of audit committees on firm performance in different countries.

Bozec (2005) has studied the impact of board characteristics and market discipline on firm performance of companies in Canada. The sample size of the study consists of 25 companies from among the 500 largest companies for the period 1976-2000. Board size, board independence, and the existence of board committees such as audit, nomination, and compensation committees are taken as independent variables. The dependent variable firm performance is measured using return on sales, ROA, sales efficiency, net income efficiency, and assets turnover. Multivariate regression results have shown that there is a negative correlation between audit committee and firm performance and that larger firms tend to have audit committees.

Cengiz and Tosunoğlu (2018) have analyzed the effect of audit committee characteristics on the firm performance of BIST companies between 2012 and 2016 using panel data analysis. Firm performance is measured using ROA and ROE. The independent variables of the study are size, independence, meeting frequency, accounting/finance expertise. Only audit committee size has shown to have a positive and significant effect on ROA. Other independent variables have no significant effect on the firm performance of companies in Turkey.

Reddy, Locke, and Scrimgeour (2010) have studied the effect of the presence of audit committees on performance of companies in New Zealand for the period covering the years 1999-2007. Tobin's Q, ROA, and the ratio of market value to book value of assets are used as indicators of financial performance. Panel data are analyzed using Ordinary Least Squares and Two Stage Least Squares and findings show that the audit committee is insignificant in impacting performance.

Al-Matari, Al-Swidi, and Fadzil (2014) have examined the relationship between audit committee characteristics and firm performance of 81 non-financial companies in Oman for 2011 and 2012. The audit committee characteristics that have been labeled as independent variables are audit committee size, audit committee independence, and audit committee meeting, while Tobin's Q is used as a proxy for firm performance. Two control variables, firm size and leverage, are also used. Multiple linear regression analysis results revealed that audit committee size has a negative impact on Tobin's Q, and audit committee independence has a positive impact on performance. In addition, audit committee meeting has shown no significant relation with firm performance.

Aanu, Odianonsen, and Foyeke (2014) have researched the impact of audit committee effectiveness on firm performance using a sample of 25 manufacturing firms in Nigeria and data of the firms for the period 2004-2011. The independent variables are four audit committee characteristics: independence, financial expertise, size, and meetings. Return on Equity (ROE), Return on Asset (ROA) and Capital Employed (ROCE) are proxies of firm performance. Board size is the only control variable. The study was carried out after reportedly a combination of fraud, unethical practices, and corrupt boards began signaling significant attention towards establishing or revising current corporate governance structure. The negative events caused stakeholders to incur massive losses in their investments and a great number of companies on the Nigerian Stock Exchange Market to experience a sudden drop in their share prices. As a result, in 2011, the Nigerian Code of Corporate Governance was issued by SEC. Results of the regression analysis suggest that independence and financial expertise positively influence ROA, ROE, and ROCE. However, no significant relationship is found between audit committee size and meetings and all three performance measures.

Al-Matari, Al-Swidi, Fadzil, and Al-Matari (2012) have sought to examine the relationship between the Board of Directors, audit committee characteristics and firm performance of Saudi non-financial companies listed in the Saudi Stock Exchange. The data of a sample of 135 firms have been collected for the year 2010. The independent variables of the study are board composition, CEO duality, board size, audit committee independence, audit committee meeting, and audit committee size. The dependent variable, firm performance, is measured using the Tobin's Q ratio and the control variables are firm size and leverage. This research is theoretically strengthened by the agency theory and institutional theory to explain the relation between corporate governance mechanisms and firm performance.. Pearson correlation analysis and a

multiple linear regression analysis are performed. Prior to commencing on the regression analysis, the aspects of linearity, normality, homoscedasticity, and independent of the errors are observed. Results of the multiple regression analysis suggest that there is a positive relationship between audit committee size and firm performance, and no relationship between the other independent variables and firm performance.

Zábojníková (2016) in her dissertation work has examined the relationship between audit committee characteristics and firm performance of non-financial UK companies listed on the London Stock Exchange. A sample of 72 companies and data of the period 2011-2015 are utilized. The audit committee characteristics analyzed are audit committee size, audit committee meetings frequency, audit committee independence, and audit committee financial expertise. Firm performance is measured using ROE and Tobin's Q, the former being a purely accounting measure and the latter a mix of market value and accounting measures. The model also includes two control variables: firm size and leverage. The theories that are used as the theoretical framework for this study and provide insight in relation to corporate governance are the Agency Theory, Stakeholder Theory, Stewardship Theory and Resource Dependence Theory. Fixed effect panel data regression model is used to analyze panel data in which she applied cross-section fixed effects. Results suggest that there is a positive relationship between audit committee size, frequency of meetings, financial expertise and firm financial performance.

Bouaziz (2012) has researched the impact of the presence of audit committees on the financial performance of Tunisian companies using audit committee independence, audit committee size, frequency of meetings, and financial expertise as independent variables of the research. The dependent variable, financial performance, is measured using ROA and ROE. The two control variables are firm size and level of debt. The aim of the research is to ascertain the effect of audit committees on the financial performance of Tunisian companies post disclosure of law 2005-96. The years taken into consideration are 2007-2010 and a sample of 26 Tunisian firms is selected from the list of companies on the Tunis Stock Exchange. Two models of linear regressions are developed, one for each of the performance measurements, ROA and ROE. Bouaziz has constructed his research on the basis of two main theories relatable to audit committees, namely the agency theory and institutional theory. When financial performance is measured by ROA, results show that audit committee independence, audit committee

size, and expertise have a significant impact on financial performance. Similarly, when financial performance is measured by ROE, audit committee size and expertise prove to have a positive relationship.

Bansal and Sharma (2016) have examined the influence of both audit committee characteristics and corporate governance mechanisms on firm performance. The relevant independent variables of the research are audit committee independence and frequency of meetings. The dependent variable, firm performance, is measured using a number of proxies: ROA, ROE, Tobin's Q and market capitalization. For the purpose of controlling for industry and firm effects, firm leverage and firm age are employed as control variables. With a sample of 235 non-financial companies listed in National Stock Exchange 500 in India, the period 2004-2013 is analyzed with fixed effect panel data. Two models are used to analyze the impact of audit committee characteristics and corporate governance on firm performance. The first model includes audit committee characteristics and other components of corporate governance, while the second model excludes audit committee characteristics. Results of the research propose that frequency of audit committee meetings have a negative significant impact on firm performance with ROE. Furthermore, audit committee independence has a significant positive effect with ROE only, indicating that independence is not a strong characteristic of audit committees in contributing to firm performance.

Amer, Ragab, and Shehata (2014) have studied the relationship between audit committee characteristics and firm performance of companies in Egypt, covering the period 2004-2012. The research has examined whether audit committee size, independence, financial expertise, and meeting frequency have an impact on firm performance represented by ROE, ROA, and Tobin's Q. The control variables consist of firm size, firm age, and firm leverage. For better representation of the Egyptian market, a sample of the 50 most active companies (excluding banks and financial institutions) listed in the Egyptian Stock Market is considered. To test the relationship between audit committee characteristics and firm performance for the nine year period, GLS random effect regression is adopted. Results show that there is a positive significant relationship between financial expertise and all three performance variables. Also, audit committee meetings has a positive and significant relationship with ROE, but a positive insignificant one with ROA and Tobin's Q. Lastly, independence is significant with ROA and Tobin's Q.

Kipkoech and Rono (2016) have conducted a study to analyze the impact of audit committee size and experience on firm financial performance of companies listed on the Nairobi Securities Exchange for the period 2006-2011. ROA is used as a proxy for firm performance and the control variables are board size, firm size, board tenure, and CEO duality. The theoretical foundation which forms the basis of the study is the agency theory. A sample of 60 listed companies is used in the multiple regression model. Data is collected through annual financial statements, annual investors' reports, magazines, and articles. Results propose that audit committee experience has a positive and significant effect on firm performance, whereas audit committee size has a negative and significant effect on firm performance.

Ali and Nasir (2015) have studied the impact of board characteristics and audit committee on the financial performance of manufacturing firms in Pakistan. They labeled board size, board independence, leadership, and audit committee as independent variables, and ROA and ROE as dependent variables. Covering the period 2007-2011 in their research, they apply the Panel data regression model. The industries that have been examined are comprised of chemical, pharmaceutical, sugar, cement, leather, paint, and steel industries. Data for the research has been collected from the annual audited financial reports of the companies for the five years and other publications related to firm performance and corporate governance. Two regression models with panel data are used for each of the dependent variables. Results put forward that all the board characteristics have a positive effect on firm performance, including the audit committee. Moreover, more non-executive directors on the board prove to be beneficial.

Ghabayen (2012) has analyzed the relationship between board characteristics and firm performance of non-financial companies in Saudi Arabia. Audit committee size, audit committee composition, board size, and board composition are taken as the independent variables, while ROA is taken as the dependent variable. A sample of 102 companies and data for the year 2011 are collected from annual reports. The aim of the study is to ascertain the impact of board characteristics on firm performance in a society where corporate governance is not fully developed and implemented. Due to its relevance, the research is particularly built on the agency theory. Multiple regression results indicate that audit committee size and audit committee composition have no impact on firm performance.

Gurusamy (2017) has analyzed the impact of board characteristics, audit committee, and ownership structure on firm performance of manufacturing firms in

India during the period starting from 2006 to 2015. The independent variables are audit committee size and audit committee independence. Firm performance is measured using Tobin's Q, ROA, and ROE, while controlled by firm size and capital gearing ratio. For a sample of 357 manufacturing firms (excluding financial and public sector firms) listed in Bombay Stock Exchange (BSE), the panel data regression analysis has been applied. The data for the research has been collected from the corporate governance reports, companies' websites, and a specific database. Results suggest that audit committee size and independence have a negative impact on firm performance. On the contrary, board size, board independence, and board meeting frequency have a positive impact on firm performance.

Nuhu, Umaru, and Salisu (2017) have performed a study on the effect of audit committee quality on financial performance of food and beverages companies in Nigeria by collecting data for the period 2007-2016. Audit committee quality is analyzed using audit committee members, audit committee meetings, and audit committee financial expertise. Financial performance is measured using ROA. Structural equation modeling (SEM) results point out that audit committee member size has a negative and insignificant effect on ROA, whereas audit committee meeting and financial expertise have a positive and significant effect on financial performance.

Issarawornrawanich (2015) has examined the relation between the board of directors' characteristics and firm performance of companies in Thailand. Excluding banking, finance, securities, and insurance industries, only companies listed on the Stock Exchange of Thailand are considered. The independent variable relevant to this study is audit committee meeting. ROA and Tobin's Q are used as proxies of firm performance. The agency theory is explained for the purpose of contributing to the theoretical background of the study. Multiple regression analysis method is adopted and results indicate that the coefficients of audit committee meeting are not significant in both ROA and Tobin's Q model.

Alqatamin (2018) has explored the impact of audit committee characteristics on firm performance of companies in Jordan utilizing data for the period 2014-2016. The audit committee characteristics taken into consideration are audit committee size, independence, experience, gender diversity, and frequency of meetings. ROA is used as a proxy for company performance and company size, industry type, leverage ratio, and dividend ratio are the control variables of the study. As a method of analysis, the panel regression random effect model is employed. After running the regression analysis,

results display a statistically positive and significant relationship between audit committee size, independence, gender diversity, and ROA.

Şengür and Püskül (2011) have studied the relationship between board of directors' structure and firm performance in Turkey for the year 2009. Using 24 firms listed in the Istanbul Stock Exchange Corporate Governance Index, factors such as board size, board gender, board independence, number of members who are executives, number of committees, chairman independence, and whether the head of the board of directors has another position are examined in relation to firm performance. Performance indicators consist of ROA, ROE, Price-Earnings Ratio (PE), Earnings per Share (EPS), and Stock Return. Results have shown that companies which have an audit committee and a corporate governance committee have greater stock returns than companies that do not have any of them.

Borlea, Achim, and Mare (2017) have researched the effect of board characteristics on firm performance in emerging economies. They take six board characteristics as independent variables, among which includes the role of the audit committee. Firm performance is measured using ROA and Tobin's Q, and the two control variables adopted are firm size and leverage. The research is performed on 55 Romanian non-financial companies listed on the Bucharest Stock Exchange in 2012. All the explanatory variables are binary, with the dependent variables and control variables being scale. The Pearson's correlation analysis is used for the scale variables, while the ANOVA analysis is used for the dummy variables. After these two analyses, multiple linear regression analysis is done. Results have presented that there is no significant relationship between the six board characteristics and financial performance.

Saibaba and Ansari (2013) have analyzed the impact of audit committees and board structures on firm performance of Indian companies. Number of audit committee meetings, and independence of the audit committee are taken as the independent variables of the study. Firm performance is measured using indicators such as EBIT/Sales, ROA, the market value to book value ratio, and an index. Hypotheses are tested using linear regression covering a period that begins in 2008 and ends in 2011. Results have revealed that the number of audit committee meetings positively and significantly affect EBIT/Sales.

Barka and Legendre (2017) have studied the impact of the board of directors and the audit committee on firm performance of firms listed on the Paris Stock Exchange. It became mandatory for firms in France to form audit committees in 2008, so this study

aims to analyze the effect of audit committees before 2008, taking the period of 2002-2006 within the scope of the research. In order to develop the hypotheses and form a conceptual framework, the agency theory and resource theory is stated. The sample size consists of 43 non-financial companies and the regression model is used to test the hypotheses. The independent variables are audit committee independence and audit committee meeting frequency. Firm performance is represented by ROA and ROE. The descriptive analysis results point out that the average audit committee consists of three members and 66% of them are independent. On the other hand, regression results suggest that audit committee independence and firm performance are inversely related. Moreover, frequent AC meetings negatively influence firm performance.

Kallamu and Saat (2015) have looked at whether audit committee characteristics are associated with firm performance of finance companies in Malaysia. This work examines the period before and after the Malaysian Code on Corporate Governance was issued. The periods taken into account are 1992-1996 and 2007-2011. A total of 37 finance companies listed on the Bursa Malaysia form the sample of the study. The theories elaborated on to provide a theoretical background are the agency theory and stewardship theory. Audit committee composition, independent audit committee chair, audit committee expertise, executive expertise, executive membership, and interlock of directors are the independent variables of the study, while ROA and Tobin's Q are used as proxies for firm performance. Results prove that for the period after the code was issued, independent directors on the audit committee have improved accounting returns of finance companies. Interlock of directors on audit and nomination committees are negatively associated with firm performance. As for the pre code period, results reveal that financial expertise has a negative effect on performance and executive experience positively affects ROA. Upon the observation of the pre and post periods, it can be seen that corporate governance has shown a drastic improvement in finance companies, which puts forth the necessity of such committees.

Al-Mamun, Yasser, Rahman, Wickramasinghe, and Nathan (2014) have examined the relationship between audit committee characteristics and firm performance of Malaysian firms. The sample consists of 32 publicly listed companies on the Bursa Malaysia over the years 2008-2010. The independent variables employed in the research are audit committee independence, audit committee meeting frequency, audit committee size, audit committee expertise, and audit quality. Firm performance is represented by Economic Value Added (EVA). Regression results point out that audit

committee independence has a positive and significant impact on firm performance, whereas audit committee meeting frequency and financial expertise have no significant effect on performance. In terms of the results for audit committee size and audit quality, they have shown to negatively impact firm performance.

Dar, Naseem, Rehman, and Niazi (2011) have examined four corporate governance mechanisms, one of which is the audit committee, on firm performance of oil and gas companies in Pakistan. The study uses 12 listed firms and the period examined covers the years 2004-2010. The firm performance indicators are ROE and profit margin. Multiple regression analysis is applied as the method of evaluating the impact of corporate governance on firm performance. Results have pointed out that there is a significant negative relationship between audit committee and ROE.

Hamid and Aziz (2012) have analyzed the relationship between board and audit committee characteristics on firm performance by examining the period 2005-2010. The data collected is separated into two groups; the first group includes data for the period 2005-2007 and the second group includes data for the period 2008-2010. Firm performance is represented by ROA and the sample size comprises of 33 Government Link Companies, all listed on Bursa Malaysia. The independent variables are audit committee independence and audit committee expertise. Based on statistical results, audit committee financial expertise has a positive and significant effect on performance after the Malaysian Code on Corporate Governance revision. Regression analysis results portray that the results have proven to be better after the revision of the code, in comparison to the years before 2007.

Yasser, Entebang, and Mansor (2015) have investigated the impact of the audit committee on firm performance, using ROE and profit margin as proxies. The research studies the top 30 companies of Karachi Stock Exchange during 2008-2009. Descriptive results show that 91% of firms have audit committees made up by non-executive members of board. Pearson correlation and ANOVA regression results indicate that there is a positive and significant relationship between the audit committee, ROE, and PM.

Kyereboah-Coleman (2008) has examined the relationship between corporate governance and performance of 103 firms in Ghana, South Africa, Nigeria, and Kenya during the period 1997-2001. Most of the data is collected using questionnaires and other available data. They use audit committee size, audit committee independence, and frequency of meetings as the independent variables, and ROA and Tobin's Q as proxies

for performance. Regression results indicate that there is a positive relationship between audit committee size and the two performance measures. Audit committee independence has shown no relationship with Tobin's Q and ROA. Lastly, the frequency of audit committee meetings is positively associated with Tobin's Q.

Darko, Aribi, and Uzonwanne (2016) have researched the impact of audit committee size and frequency of meetings on firm performance, which is measured using ROA, ROE, net profit margin, and Tobin's Q. The study includes a total of 20 companies listed on the Ghana Stock Exchange over the period 2008-2012. Firm age, firm size, and leverage are adopted as the control variables. A pool panel regression and ANOVA analysis is employed in order to test the selected hypotheses. Results have shown that there is a significant negative relationship between the number of audit committee meetings and ROE and ROA. They further find out that audit committee size does not have a significant influence on ROA and net profit margin.

As reviewed in this chapter, a number of studies assessing the impact of audit committees on firm performance were undertaken in different countries. A summary of the reviewed studies is provided in Table 1. Some reviewed studies have showed that meeting frequency have a positive impact on firm performance (See Kyereboah-Coleman, 2008; Saibaba & Ansari, 2013; Zábajníková, 2006; Nuhu et al., 2017). Other studies have revealed a positive association between audit committee independence and firm performance (See Bouaziz, 2012; Al-Mamun et al., 2014; Al-Matari et al., 2014; Aanu et al., 2014; Bansal & Sharma, 2016; Alqatamin, 2018). While performing this comprehensive literature review, a study on this topic examining the effect of audit committee characteristics on firm performance has not been encountered in Turkey.

Table 1

Summary of Literature Review

WORK	INDEPENDENT VARIABLES	DEPENDENT VARIABLES	METHOD	RESULTS
Bozec (2005)	The existence of board committees (audit, nomination, and compensation committees)	Return on sales, ROA, sales efficiency, net income efficiency, and assets turnover	Multivariate regression	Negative correlation between audit committee and firm performance and that larger firms tend to have audit committees.
Kyereboah-Coleman (2008)	AC size, AC independence, and frequency of meetings	ROA and Tobin's Q	Regression	The frequency of audit committee meetings is positively associated with Tobin's Q.
Reddy, Locke, and Scrimgeour (2010)	Audit committee	Tobin's Q, ROA, and the ratio of market value to book value	Ordinary Least Squares and Two Stage Least Squares	The audit committee is insignificant in impacting performance.
Dar, Naseem, Rehman, and Niazi (2011)	Audit committee	ROE and profit margin	Multiple regression analysis	There is a significant negative relationship between audit committee and ROE.
Şengür and Püskül (2011)	Number of committees	ROA, ROE, Price-Earning Ratio(PE), Earnings per Share (EPS), and Stock Return	T-test	Companies which have an audit committee and a corporate governance committee have greater stock returns than companies that do not have any of them.

Table 1 (continued).

WORK	INDEPENDENT VARIABLES	DEPENDENT VARIABLES	METHOD	RESULTS
Bouaziz (2012)	AC independence, AC size, frequency of meetings, and financial expertise	ROA and ROE	Multiple linear regression analysis	AC independence, AC size & expertise have a significant impact on ROA. AC size & expertise have a positive relationship on ROE.
Hamid and Aziz (2012)	AC independence and AC expertise	ROA	Regression analysis	Results have proven to be better after the revision of the code, in comparison to the years before 2007.
Al-Matari, Al-Swidi, Fadzil, and Al-Matari (2012)	Board composition, CEO duality, board size, AC independence, AC meeting, and AC size.	Tobin's Q	Pearson correlation analysis and multiple linear regression analysis	A positive relationship between AC size and firm performance and no relationship between the other independent variables and firm performance.
Ghabayen (2012)	AC size, AC composition, board size, and board composition	ROA	Multiple regression analysis	AC size, AC composition, and board size have no impact on firm performance. Board composition has a negative and significant impact on ROA.

Table 1 (continued).

WORK	INDEPENDENT VARIABLES	DEPENDENT VARIABLES	METHOD	RESULTS
Saibaba and Ansari (2013)	Board independence, CEO duality, number of board meetings, number of AC meetings, and AC independence.	EBIT/Sales, ROA, and MVBV	Linear regression analysis	The number of audit committee meetings positively and significantly affect EBIT/Sales.
Al-Mamun, Yasser, Rahman, Wickrama singhe, and Nathan (2014)	audit committee independence, audit committee meeting frequency, audit committee size, audit committee expertise, and audit quality	Economic Value Added (EVA)	Regression analysis	AC independence has a positive and significant impact on firm performance. AC size and audit quality have a negative impact firm performance.
Amer, Ragab, and Shehata (2014)	AC size, independence, financial expertise, and meeting frequency	ROE, ROA, and Tobin's Q	GLS random effect regression	Negative relationship between AC size and performance. Positive relationship between financial expertise and performance.
Al-Matari, Al-Swidi, and Fadzil (2014)	Audit committee size, audit committee independence, and audit committee meeting	Tobin's Q	Multiple regression	Audit committee size has a negative impact on Tobin's Q, and audit committee independence has a positive impact on performance.

Table 1 (continued).

WORK	INDEPENDENT VARIABLES	DEPENDENT VARIABLES	METHOD	RESULTS
Aanu, Odianonsen, and Foyeke (2014)	independence, financial expertise, size, and meetings	Return on Equity (ROE), Return on Asset (ROA) and Capital Employed (ROCE)	Regression analysis	Independence and financial expertise positively influence and ROA, ROE, and ROCE. No significant relationship is found between audit committee size and meetings and performance
Issarawornrawanich (2015)	CEO duality, board size, board composition, board meeting, AC meeting, and existence of nomination and/or remuneration committees	ROA and Tobin's Q	Multiple regression	The coefficients of audit committee meeting are not significant in both ROA and Tobin's Q model.
Ali and Nasir (2015)	Board size, board independence, leadership, and audit committee	ROA and ROE	Panel data regression model	All the board characteristics have a positive effect on firm performance,
Kallamu and Saat (2015)	AC composition, independent audit committee chair, AC expertise, executive expertise, executive membership, and interlock of directors	ROA and Tobin's Q		Post MCGG: independent directors on AC improve accounting returns of finance companies. Pre MCGG period, financial expertise has a negative effect on performance.

Table 1 (continued).

WORK	INDEPENDENT VARIABLES	DEPENDENT VARIABLES	METHOD	RESULTS
Yasser, Entebang, and Mansor (2015)	Audit committee	ROE and profit margin	ANOVA regression	Positive and significant relationship between the audit committee, ROE, and profit margin
Kipkoech and Rono (2016)	AC size and experience	ROA	Multiple regressions model	AC experience has a positive effect on performance. AC size has a negative effect on performance.
Darko, Aribi, and Uzonwanne (2016)	AC size and frequency of meetings	ROA, ROE, net profit margin, and Tobin's Q	Pool panel regression and ANOVA analysis	Significant negative relationship between the number of audit committee meetings and ROE and ROA
Bansal and Sharma (2016)	AC independence and frequency of meetings	ROA, ROE, Tobin's Q and market capitalization	Fixed effect panel data	AC meetings have a negative impact on performance with ROE. AC independence has a significant positive effect with ROE
Zábojníková (2016)	AC size, AC meetings frequency, AC independence, and AC financial expertise	ROE and Tobin's Q	Fixed effect panel data regression model	Positive relationship between AC size, frequency of meetings, financial expertise and firm financial performance.

Table 1 (continued).

WORK	INDEPENDENT VARIABLES	DEPENDENT VARIABLES	METHOD	RESULTS
Gurusamy (2017)	AC size, AC independence	Tobin's Q, ROA, and ROE	Panel data regression analysis	AC size and independence have a negative impact on performance. Board size, board independence, and board meeting frequency have a positive impact on firm performance.
Borlea, Achim, and Mare (2017)	Role of AC and five other board characteristics	ROA and Tobin's Q	Pearson correlation analysis and the ANOVA analysis	There is no significant relationship between the six board characteristics and financial performance.
Nuhu, Umaru, and Salisu (2017)	AC members, AC meetings, and AC financial expertise	ROA	Structural equation modeling (SEM)	AC meeting and financial expertise have a positive and significant effect on financial performance
Barka and Legendre (2017)	AC independence and AC meeting frequency	ROA and ROE	Regression analysis	AC independence and firm performance are inversely related.

Table 1 (continued).

WORK	INDEPENDENT VARIABLES	DEPENDENT VARIABLES	METHOD	RESULTS
Alqatamin (2018)	AC size, independence, experience, gender diversity, and frequency of meetings	ROA	Panel regression random effect model	Positive and significant relationship between AC size, independence, gender diversity, and ROA
Cengiz and Tosunoğlu (2018)	AC size, independence, meeting frequency, accounting/finance expertise	ROA and ROE	Panel data analysis	Positive and significant relationship between AC size and ROA.

CHAPTER V

AN ANALYSIS OF AUDIT COMMITTEES ON FIRM PERFORMANCE

As discussed in the first chapter, the purpose of this study is to examine the effect of audit committees characteristics on firm performance of Turkish companies listed in BIST. This chapter, which is devoted to analyze the impact of audit committees' characteristics on the firm performance of firms listed in BIST empirically, consists of three main parts. First, developed research hypotheses are presented. Subsequently, research methods, covering sample selection, data collection, and model development process, as well as statistics performed to test the hypotheses are explained. Finally, research findings (results of descriptive statistics, correlation and multiple regression analysis) are discussed.

5.1. Hypothesis Development

The purpose of this study is to examine the effect of audit committee characteristics on the firm performance of Turkish companies listed in BIST. Based on studies performed on this subject by many researchers across several different countries, there appears to be a number of factors affecting firm performance, one being the audit committee. Results pertaining to the effect of audit committee characteristics on firm performance may differ from country to country, due to each having its own set of legal rules and regulations about establishing audit committees. Based on the literature review provided in Chapter IV and the purpose of this study, the main hypothesis has been developed as follows:

H_0 : *Audit committee characteristics have no significant effect on firm performance.*

Reviewed related literature shows that different models are used as proxies to measure firm performance. ROA, ROE, and Tobin's Q are the most commonly used models in the literature and are also used in this study. Furthermore, based on the literature review and requirements as regards to the audit committee in Turkey, audit committee independence, financial expertise, gender diversity, age, and audit committee meetings are identified as audit committee characteristics likely to affect firm

performance. On the basis of the identified three models of firm performance and five audit committee characteristics, a theoretical framework is presented in Figure 5 for the development of sub hypotheses.

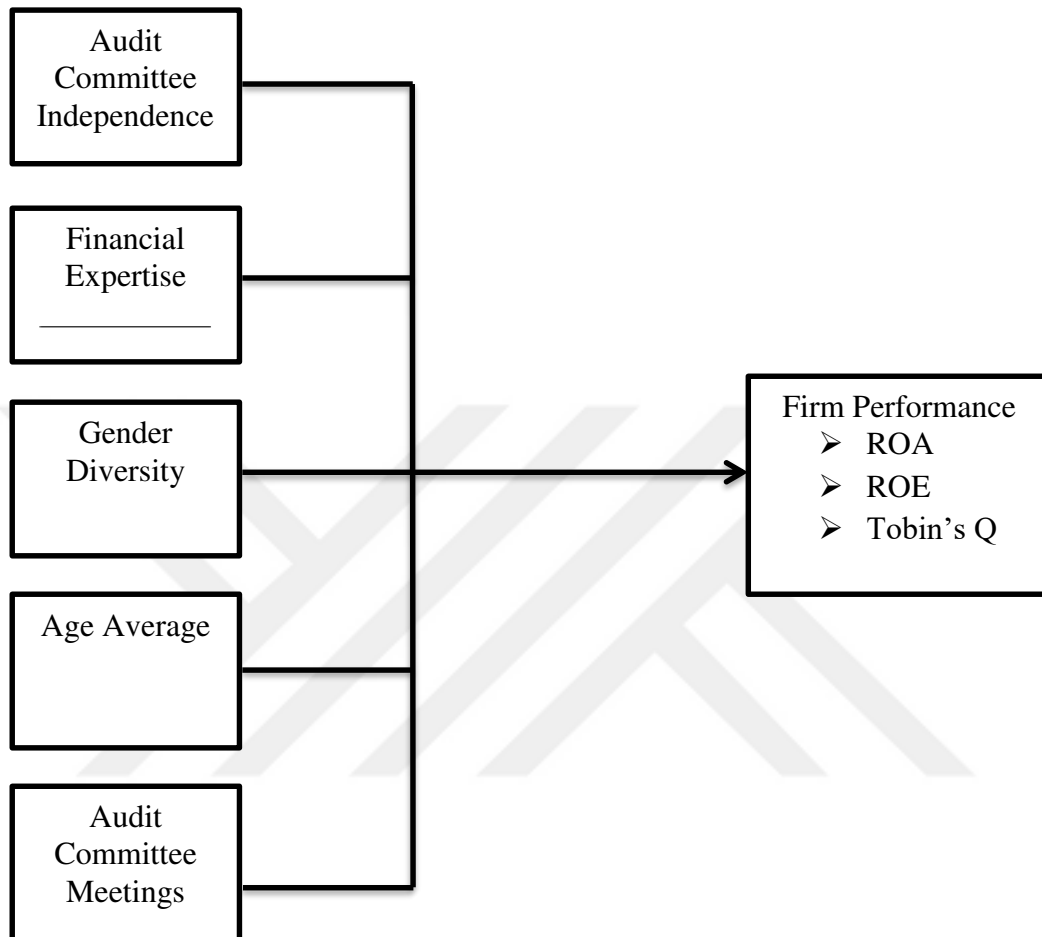


Figure 5. Theoretical Framework

Since firm performance has been analyzed on the basis of three different models, with dependent variables ROA, ROE, and Tobin's Q, the main hypothesis is divided into three sub hypotheses:

H₀₁: *Audit committee characteristics do not have a significant effect on ROA.*

H₀₂: *Audit committee characteristics do not have a significant effect on ROE.*

H₀₃: *Audit committee characteristics do not have a significant effect on Tobin's Q.*

In this study, given that five audit committee characteristics are identified as factors likely to affect firm performance, these sub hypotheses have been developed:

- H₀₁₁** : *Audit committee independence does not have a significant effect on ROA.*
- H₀₁₂** : *Financial expertise of audit committee members does not have a significant effect on ROA.*
- H₀₁₃** : *Gender diversity does not have a significant effect on ROA.*
- H₀₁₄** : *Age average of audit committee members does not have a significant effect on ROA.*
- H₀₁₅** : *Meeting frequency does not have a significant effect on ROA.*
- H₀₂₁** : *Audit committee independence does not have a significant effect on ROE.*
- H₀₂₂** : *Financial expertise of audit committee members does not have a significant effect on ROE.*
- H₀₂₃** : *Gender diversity does not have a significant effect on ROE.*
- H₀₂₄** : *Age average of audit committee members does not have a significant effect on ROE.*
- H₀₂₅** : *Meeting frequency does not have a significant effect on ROE.*
- H₀₃₁** : *Audit committee independence does not have a significant effect on Tobin's Q.*
- H₀₃₂** : *Financial expertise of audit committee members does not have a significant effect on Tobin's Q.*
- H₀₃₃** : *Gender diversity does not have a significant effect on Tobin's Q.*
- H₀₃₄** : *Age average of audit committee members does not have a significant effect on Tobin's Q.*
- H₀₃₅** : *Meeting frequency does not have a significant effect on Tobins Q.*

The method for testing the above hypotheses is as follows:

- The annual activity reports and financial statements of the selected manufacturing industry companies traded in BIST have been accessed.
- Firm performance of selected companies have been measured using ROA, ROE, and Tobin's Q,

- A multiple regression model, controlled by factors believed to affect the performance of companies, is developed that examines the effect of the audit committee on firm performance.

5.2. Research Method

Multiple regression analysis is used to study the relationships between audit committee size, audit committee independence, financial expertise, gender diversity, age average, and meeting frequency as independent variables and ROA, ROE, and Tobin's Q as dependent variables.

The data needed to test the research hypothesis generated in this study are obtained from the financial tables of companies traded in BIST. The sample selection, data collection, and models developed to test the hypotheses are presented in this section.

5.2.1. Sample Selection

The population of this study is non-financial companies regularly listed on BIST between 2006 and 2016. The period beginning in 2006 was deliberately chosen on the basis of the regulation regarding the audit committee being enforced that same year in Turkey, and desiring to hold the period range as broad as possible. According to the list obtained from BIST and Public Disclosure Platform (KAP) internet pages, we identified 170 non-financial companies regularly listed on BIST over the years covered in this study, which are specified as the population. In this study, 102 non-financial companies (60% of the population) were randomly selected as the sample size, exceeding the required sample size (90 companies) calculated by Cochran's formula (Israel, 1992). The list of the companies sampled in this study is provided in Appendix-1.

The companies that are included in the analysis operate in a total of nine industries; the most encountered being the manufacturing industry. Table 2 lists these industries one by one, along with the number of companies in each industry and the percentage. The reasoning for intentionally selecting non-financial companies is because banks operate in a more complex manner and their business transactions have a tendency to shift abruptly, making it more difficult for them to implement formal regulations (Mehran, Morrison, & Shapiro, 2011). Therefore, this thesis excludes all financial firms including banks, insurance companies, brokerage firms, and other financial institutions. Also, the reason behind including companies listed in BIST in this

work is because these companies are open to the public and only public companies are obliged to have audit committees as part of their boards according to Turkish laws and regulations.

Table 2

Sample Distribution According to Industry

INDUSTRY	FREQUENCY	PERCENTAGE
Manufacturing	71	69.61%
Wholesale and Retail Trade, Hotels and Restaurants	12	11.77%
Technology	6	5.88%
Transportation Telecommunication and Storage	4	3.92%
Construction and Public Works	4	3.92%
Electricity Gas and Water	2	1.96%
Administrative and Support Service Activities	1	0.98%
Mining	1	0.98%
Agriculture, Forestry and Fishing	1	0.98%
TOTAL	102 companies	100%

5.2.2. Data Collection

Data needed for the analysis is generally gathered from annual activity reports and annual financial reports available on the Public Disclosure Platform or each company's official website. In addition, data related to firm performance measures such as ROA and ROE values is obtained from Finnet 2000 Plus. The market value of equity values required to calculate the Tobin's Q ratio of companies for a particular year can be accessed through Finnet as well. The hand-collected data is first entered into Excel for convenience then exported to Statistical Package for Social Science (SPSS) version 24.0 software where the multiple regression analysis is performed using the method 'Enter', where all variables are entered into the model at the same time.

5.2.3. Model Specification

In order to test hypotheses, the following three econometric models were developed for purposes of analyzing the relationship between audit committee

characteristics and firm performance using multiple regression. The models are constituted of three dependent variables, five independent variables, and three control variables. The three dependent variables are namely Return on Assets, Return on Equity, and Tobin's Q and they are measures that represent firm performance. On the other hand, the independent variables are audit committee characteristics such as audit committee independence, financial expertise, gender diversity, age average, and audit committee meetings. Last but not least, the control variables are firm size, leverage, and industry type.

$ROA =$

$$\beta_0 + \beta_1 INDEP_{it} + \beta_2 FINEXP_{it} + \beta_3 GEND_{it} + \beta_4 AGEAVRGE_{it} + \beta_5 MEET_{it} + \beta_6 FIRMSIZE + \beta_7 LEV + \beta_8 IND + \varepsilon_{it}$$

$ROE =$

$$\beta_0 + \beta_1 INDEP_{it} + \beta_2 FINEXP_{it} + \beta_3 GEND_{it} + \beta_4 AGEAVRGE_{it} + \beta_5 MEET_{it} + \beta_6 FIRMSIZE + \beta_7 LEV + \beta_8 IND + \varepsilon_{it}$$

$Tobin's Q =$

$$\beta_0 + \beta_1 INDEP_{it} + \beta_2 FINEXP_{it} + \beta_3 GEND_{it} + \beta_4 AGEAVRGE_{it} + \beta_5 MEET_{it} + \beta_6 FIRMSIZE + \beta_7 LEV + \beta_8 IND + \varepsilon_{it}$$

To begin with, the dependent variable ROA is measured as the net profit after taxes divided by total assets. ROE is measured in a similar manner, with net profit after taxes divided by shareholder's equity. However, TOBINSQ has been transformed using a log transformation to attain values that conform to the assumption of normality required in multiple regression analysis. The formula used for TOBINSQ is the market value of equity plus total debt divided by the book value of total assets.

As mentioned before, there are five independent variables in the model. INDEP signifies the independence of the audit committee, which is a crucial variable because it is a requirement for audit committees in Turkish public companies. It is a dummy variable, coded 1 if the committee is comprised only of independent members, 0 if it is not. The criteria that define an independent member according to the Corporate Governance Principles of Turkey have been presented in Chapter 2. FINEXP is the proxy for financial expertise and it is measured as the proportion of members with financial or accounting expertise over the total number of audit committee members. In

this thesis, a financial/accounting expert is an audit committee member who is a public accountant, auditor, controller, or a chief executive/financial officer. In addition, being formerly employed in a finance or accounting position or possessing a certification related to accounting is also within the scope of being classified as an expert. A more detailed explanation on who is classified as a financial expert is provided in Chapter 2. GEND is another independent variable added to the analysis and is the proportion of female members over the total number of audit committee members. Gender diversity is one variable that is not frequently applied in related research, making this study distinct from other studies. AGEAVRGE, or age average, is a dummy variable and represents the average age of the audit committee members. It is separated into four groups (young, middle, old, and very old), three of which are included in the multiple regression analysis. “Young” represents the average age of audit committee members between 30-40, “Middle” to the average age of audit committee members between 41-51, “Old” to the average age of audit committee members is between 52-62, “Vold” to the average age of audit committee members is 63 and above. The first three groups are included in the analysis while the last group (Vold) is excluded according to the functioning of the dummy variable. Finally, the final independent variable MEET is the number of meetings held by the audit committee during the year.

The three control variables employed in this study are FIRMSIZE, LEV, and IND. FIRMSIZE refers to the size of the firm and is measured using the natural logarithm of total assets of the company. LEV, or leverage, is the proportion of total debts to total assets. IND is the proxy for industry type and is a dummy variable separated into three groups: manufacturing, commercial, and service. A summary of all variables used in the study is provided in the table below.

Table 3
Variable Definition

Dependent Variables	
Return on Assets (ROA)	Net profit after taxes / Total assets
Return on Equity (ROE)	Lg10 of Net profit after taxes / Shareholder's equity
Tobin's Q (TOBINSQ)	Lg10 of The market value of equity + total debt / book value of total assets
Independent Variables	
Audit Committee Independence (INDEP)	Dummy variable of "1" if all members of the audit committee are independent, "0" otherwise
Financial Expertise (FINEXP)	Proportion of audit committee members with financial/accounting expertise over the total number of members on the committee
Gender (GEND)	Proportion of female members over the total number of members on the committee
Age Average (AGEAVRGE)	A grouped variable coded; "Young" when the average age of audit committee members is between 30-40, "Middle" when the average age of audit committee members is between 41-51, "Old" when the average age of audit committee members is between 52-62, "Very Old" when the average age of audit committee members is 63 and above
Audit Committee Meetings (MEET)	Number of audit committee meetings held per year
Control Variables	
Firm Size (FIRMSIZE)	Natural logarithm of total assets of the company
Leverage (LEV)	Proportion of total debts to total assets
Industry Type (IND)	Dummy variable; INDM: manufacturing company INDT: trade company INDS: service company

5.3. Multiple Linear Regression

Regression analysis is a statistical method that is widely used in social sciences and research in other fields as well. Multiple linear regression analysis is an analysis in which the variance of the dependent variable is attempted to be explained by two or more independent variables (Doğan & Yılmaz, 2017). Multiple regression is performed

to forecast the values of a dependent variable, provided that there is a group of explanatory variables, or independent variables (Tranmer & Elliot, 2008). It is basically the extended form of simple linear regression, which only takes one independent variable into account. The difference between them is that while only one independent variable is included in the simple linear regression model, two or more independent variables are included in a multiple linear regression. The relationship between the set of variables can be expressed with the equation below (Tranmer & Elliot, 2008):

$$y_i = \beta_0 + \beta_1 x_{1i} + \beta_2 x_{2i} + \dots + \beta_p x_{pi} + e_i$$

Where:

y = dependent variable

β_0 = constant term

β_1 , β_2 , and β_p = coefficients of the first, second, and p explanatory variable respectively

x_{1i} , x_{2i} , and x_{pi} = first, second, and p independent variables

e_i = error term

Multiple regression analysis presents the interpretation of the total variance explained by the predictor (independent) variables, the statistical significance of the variance explained, the statistical significance of the predictor variables, and the interpretation of the relationship between the predictor variables and the dependent variable (Büyüköztürk, 2011). The effect of independent variables on the dependent variable is examined by R^2 , which gives the ratio of the variance explained by all the variables in Y .

When running a multiple regression, there are some key assumptions that need to be checked and met beforehand for the analysis to be correctly interpreted. These assumptions can be summed up into five: normality, linearity, homoscedasticity, no or little multicollinearity, and no auto-correlation.

One of the assumptions of linear regression is for error terms to have a normal distribution (Durmuş, Yurtkoru, & Çinko, 2011). Normality can be checked by examining skewness and kurtosis values, P-P plots, Q-Q plots, Kolmogorov-Smirnov or Shapiro Wilk tests, and other data plots (Tranmer & Elliot, 2008). Variables that are not

normally distributed tend to be skewed, kurtotic, or with significant amount of outliers causing regression results to be misleading and significance tests to be unreliable. Skewness and kurtosis values can easily be obtained through SPSS, and outliers can be recognized by visually studying histograms or by examining the z-scores of variables.

Linear regression, as the name suggests, assumes a linear relationship between dependent and independent variables. This assumption must first be investigated before running the regression. Correlation analysis and scatterplots are used to observe the linearity of the relationship between dependent and independent variables (Durmuş, Yurtkoru, & Çinko, 2011).

The assumption of homoscedasticity assumes that the residuals are the same across each level of the independent variable (Osborne & Waters, 2002). The variance of errors should be spread out evenly throughout the line of best fit. Homoscedasticity can be checked by visually inspecting a plot of the standardized residuals by the regression standardized predicted value. If the error terms do not draw a certain pattern and remain fixed as the independent variable increases, it can be said that the homoscedasticity assumption is met. Conversely, if the error terms increase or decrease as the value of the independent variable increases and show a pattern for the related variation, there is heteroscedasticity (Durmuş, Yurtkoru, & Çinko, 2011).

Multiple regression also assumes there is little or no multicollinearity between the independent variables. In the case of multicollinearity between independent variables, specific problems will occur in the model. The two criteria that are most preferred to detect multicollinearity are presented below (Durmuş, Yurtkoru, & Çinko, 2011):

- Investigation of correlation between independent variables. If there is a high correlation ($r > 0.7$) between independent variables, it is likely that there is multicollinearity.
- If the VIF (Variance Inflation Factor) value is greater than 10, it is likely that there is multicollinearity.

5.3.1. Testing for Assumptions

Before carrying out a multiple regression analysis, assumptions need to be checked for in order to proceed with interpreting the results. As stated earlier, these

consist of normality, linearity, homoscedasticity, no or little multicollinearity, and no auto-correlation.

In testing the assumption of normality, the P-P plot of the residuals was analyzed and the distribution of the residuals was found to be approximately normal, recognized by the points falling along a straight diagonal line. Moreover, normal distribution statistics (skewness and kurtosis values are within the range of ± 1.96) indicate that the data of the variables show normal distribution (Yaşar, 2011).

To test the assumption of linearity, after identifying the outliers and removing them from the data set, the relationship between the variables is understood by visually inspecting scatterplots. In doing so, a violation of the linearity assumption has not been observed and the relationships between the dependent and independent variables appear to be linear.

The homoscedasticity assumption was checked by reviewing the plot of the standardized residuals by the regression standardized predicted value. Since the error terms draw a certain pattern and remain fixed as the independent variable increases, it can be said that the assumption has been met.

For checking the multicollinearity assumption, which states that a high degree of correlation should not exist between the independent variables, the Pearson Correlation matrix and VIF were studied. Looking at the correlation matrix, there was no value above 0.7, indicating that a high correlation between the independent variables is not present. In addition, the VIF values were all less than 10, also supporting the absence of multicollinearity.

Finally, the autocorrelation assumption was checked for by using the Durbin Watson statistic, and the assumption seems to be satisfied.

5.4. Research Findings

In this study, the hypotheses that have been formulated above regarding the effect of the audit committee on firm performance have been tested with a multiple regression model. In this context, descriptive statistics of the study, correlation analysis results, and multivariate analysis are presented.

5.4.1. Descriptive Statistics

The results in Table 4 depict the descriptive statistics for all the variables used in this study. Information including the number of observations, minimum value, maximum value, mean, and the standard deviation of each variable is available in the table. The mean of ROA and ROE is 3.94 and 6.73, respectively. Tobin's Q has a mean of 0.07, which is considerably low than ROA and ROE because a log transformation was applied for purposes of normality. INDEP, a dichotomous variable, has a mean of 0.72 close to the value of 1, meaning that the audit committees of Turkish companies on average are nearly independent. The independent variable FINEXP has a mean of 45%, indicating that have less than half of audit committee members are financial experts, or possess accounting/financial expertise. The mean of GEND is 8.5%, denoting that approximately 92% of the audit committee members are males, and females occupy a very small portion in the committee of public companies in Turkey. MEET, or the number of audit committee meetings in a year, has a minimum value of 2 and a maximum value of 9. With a mean of 4.94, MEET has a mean which exceeds the minimum number of meetings required per year (at least 4 times) according to the regulation by the CMB. AGEAVRGE, or the age average of the committee members, is divided into four variables; that is, YOUNG (30-40 years old), MIDDLE (41-51 years old), OLD (52-62 years old), and VOLD (63+ years old). According to the Descriptive Statistics, the average audit committee has members which are aged between 52-62 years, because the highest mean out of the four groups belongs to the category OLD. The other variables mentioned are the control variables employed in the analysis. Regarding control variables, it is worthy to note that based on the mean of the variable INDM, the majority of companies that have been studied are manufacturing companies.

Table 4
Descriptive Statistics

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
ROA	702	-38.71	43.75	3.9419	9.02883
ROE	676	-88.12	74.73	6.7345	20.14011
TOBINSQ	654	-.47	.47	.0726	.16232
INDEP	703	0	1	.72	.451
FINEXP	661	0.00%	100.00%	45.0560%	35.98449%
GEND	698	0.00%	100.00%	8.5358%	19.93582%
MEET	259	2	9	4.94	1.222
YOUNG	463	0	1	.04	.199
MIDDLE	463	0	1	.27	.447
OLD	463	0	1	.42	.495
VOLD	463	0	1	.26	.440
LEV	703	1.43	166.00	48.9592	25.76194
FIRMSIZE	703	14.46	24.90	.19.6264	1.68106
INDM	703	0	1	.75	.431
INDT	703	0	1	.14	.350
INDS	703	0	1	.10	.305

5.4.2. Correlation Analysis

Pearson Moment Correlation has been carried out to display the correlation between the independent variables and dependent variables. In other words, it shows the correlation between independence, financial expertise, gender, meeting frequency, age average, and ROA. The correlation matrix is also examined to check for the multicollinearity assumption, which is one of the assumptions that need to be met before running the regression analysis.

Table 5 provides a summary of the correlations between the variables for ROA, ROE, and Tobin's Q. For example, independence, financial expertise, gender, middle aged members, and old aged members have a positive correlation with ROA. In contrast, meeting frequency, young aged members, and very old members showed a negative correlation with ROA. Correlation analysis additionally shows the correlations of the independent variables among each other. With regards to ROE, all the independent variables are positively correlated with ROE, except for age average which is negatively correlated. The last correlation matrix shows that audit committee independence, gender, and very old aged members have a positive correlation with Tobin's Q.

Evaluating the correlation analysis as a whole, it is noticeable that audit committee independence and gender have a positive correlation and young audit committee members have a negative correlation with all three dependent variables. This consistency in the results is important since it supports the reliability and credibility of the analysis.

Table 5

Pearson Correlation Analysis

Return on Assets (ROA)									
	ROA	INDEP	FINEXP	GEND	MEET	YOUNG	MIDDLE	OLD	VOLD
ROA	1.000								
INDEP	.225	1.000							
FINEXP	.150	.055	1.000						
GEND	.173	-.136	.067	1.000					
MEET	-.022	.212	.195	-.014	1.000				
YOUNG	-.091	.072	.178	.113	.072	1.000			
MIDDLE	.006	-.225	.102	.283	-.082	-.133	1.000		
OLD	.129	.021	.060	-.092	.045	-.191	-.481	1.000	
VOLD	-.101	.157	-.248	-.226	-.005	-.147	-.371	-.531	1.000

Return on Equity (ROE)									
	ROE	INDEP	FINEXP	GEND	MEET	YOUNG	MIDDLE	OLD	VOLD
ROE	1.000								
INDEP	.217	1.000							
FINEXP	.032	.057	1.000						
GEND	.110	-.133	.066	1.000					
MEET	.056	.210	.214	.003	1.000				
YOUNG	-.081	.074	.178	.111	.086	1.000			
MIDDLE	-.047	-.222	.100	.280	-.061	-.137	1.000		
OLD	-.012	.027	.057	-.100	.084	-.197	-.498	1.000	
VOLD	.100	.151	-.250	-.218	-.076	-.143	-.362	-.520	1.000

Tobin's Q									
	TOBINSQ	INDEP	FINEXP	GEND	MEET	YOUNG	MIDDLE	OLD	VOLD
TOBINSQ	1.000								
INDEP	.082	1.000							
FINEXP	-.167	.045	1.000						
GEND	.124	-.164	.078	1.000					
MEET	-.010	.221	.191	-.080	1.000				
YOUNG	-.022	.074	.204	.152	.082	1.000			
MIDDLE	-.081	-.251	.044	.311	-.082	-.126	1.000		
OLD	-.058	.026	.055	-.142	.002	-.191	-.470	1.000	
VOLD	.148	.170	-.196	-.207	.036	-.148	-.365	-.549	1.000

5.4.3. Multiple Regression Results

Table 6, summarizes the regression results of the three models with the dependent variables ROA, ROE, and Tobin's Q. By looking at the table, the Multiple R, R square, Adjusted R square, Standard error, F value, and significant F value of the models can be accessed. Subsequently, the beta value, standard error of the beta value, T value, and significant T value of the independent and control variables are listed.

5.4.3.1. Relation between Audit Committee Characteristics and ROA

With an F value of 9.094 and a probability of 0.000, the ROA model is significant, suggesting hypothesis "**H₀₁**: *Audit committee characteristics do not have a significant effect on ROA*" is rejected. An examination of multiple regression results reveal an **R²** value of 37.5% and an Adjusted **R²** value of 33.3%, the highest out of all three models. **R²** indicates that the independent variables account for 37.5% of the variation in ROA. Results point out that three independent variables have a significant relationship with ROA. One of the variables not frequently applied in the context of this topic, gender ($\beta = 0.117$, $P=0.001$), has a positive and statistically significant relationship with ROA at the 1% level. This result indicates that hypothesis "**H₀₁₃**: *Gender diversity does not have a significant effect on ROA*" is rejected. In addition, audit committee independence ($\beta=4.216$, $P=0.063$) has a positive and significant relationship with ROA at the 10% level, rejecting hypothesis "**H₀₁₁** : *Audit committee independence does not have a significant effect on ROA*". This result is consistent with Aanu et al., (2014) and Bouaziz (2012) where they observed that audit committee independence and ROA are positively correlated. In addition, there is a negative and significant relationship between age average (young) and ROA ($\beta = -6.958$, $P = 0.029$) at the 5% level, rejecting hypothesis "**H₀₁₄**: *Age average of audit committee members does not have a significant effect on ROA*". Out of the control variables, leverage has a negative and significant relationship with ROA. At the same time, firm size and the service sector have a positive and significant relationship with ROA. Financial expertise ($P=0.318$) and Age average (very old) ($P=0.943$) are positively correlated with ROA but are not significant. Similarly, Age average (middle) ($P=0.687$) and meeting frequency ($P=0.890$) are negatively correlated and insignificant. This suggests that financial expertise of audit committee members, very old members, middle aged members, and

meeting frequency do not influence ROA of companies in Turkey. Hence, only three variables (gender, audit committee independence and young members) are shown to have an effect on ROA.

5.4.3.2. Relation between Audit Committee Characteristics and ROE

Parallel to the ROA model, the ROE model is significant with an F value of 3.300 and a probability of 0.000, suggesting that hypothesis “**H₀₂**: *Audit committee characteristics do not have a significant effect on ROE*” is rejected. **R²** is observed as 18.2%, while Adjusted **R²** as 12.7%. In this case, the independent variables have explained 18.2% of the variation in ROE. Interestingly, the same variables that are reported significant with ROA are significant with ROE. For example, audit committee independence ($\beta=11.099$ $P=0.063$) and gender ($\beta=0.220$, $P=0.013$) have a positive association, while age average (young) ($\beta=-16.717$, $P=0.048$) has a negative and statistically significant association with ROE. Hence, three sub hypotheses, **H₀₂₁** (*Audit committee independence does not have a significant effect on ROE*), **H₀₂₃** (*Gender diversity does not have a significant effect on ROE*), and **H₀₂₄** (*Age average of audit committee members does not have a significant effect on ROE*) are rejected. As for the control variables, leverage is negatively associated, while firm size and service sector are positively associated with ROE. Financial expertise ($P=0.714$), age average (very old) ($P=0.113$), and meeting frequency ($P=0.826$) are insignificant and positively correlated, whereas age average (middle) ($P=0.864$) is negatively correlated with ROE. However, these variables have no influence on ROE.

5.4.3.3. Relation between Audit Committee Characteristics and Tobin's Q

When firm performance is measured using the Tobin's Q ratio, the model is significant with an F value 2.471 and a probability of 0.007. Therefore, hypothesis “**H₀₃**: *Audit committee characteristics do not have a significant effect on Tobin's Q*” is rejected. **R²** is 15.2% and Adjusted **R²** is 9%, the lowest percentages among the three ratios. The variables explain only 15.2% of the variation in Tobin's Q. Regression results show that gender is positive and statistically significant ($\beta = 0.002$, $P = 0.032$) at the 5% level, rejecting hypothesis “**H₀₃₃**: *Gender diversity does not have a significant effect on Tobin's Q*”. At the 10% significance level, audit committee independence is

positive and significant ($\beta = 0.089$, $P = 0.091$). Therefore, hypothesis “**H₀₃₁**: *Audit committee independence does not have a significant effect on Tobin's Q*” is rejected. Financial expertise ($P=0.502$), age average (young) ($P=0.167$), age average (middle) ($P=0.213$), and meeting frequency ($P=0.254$) are insignificant and negatively correlated, whereas age average (very old) ($P=0.415$) is positively correlated with Tobin's Q.

Table 6
Multiple Regression Results

		ROA	ROE	Tobin's Q
Multiple R		0.612	0.427	0.389
R Square		0.375	0.182	0.152
Adjusted R Square		0.333	0.127	0.090
Standard Error		7.71525	20.31765	0.17806
F value		9.094	3.300	2.471
Signif. F		0.000	0.000	0.007

Variables	Ratio	Coefficient(β)	SE β	T	Sig. T
AC independence	ROA	4.216	2.251	1.874	0.063*
	ROE	11.099	5.936	1.870	0.063*
	Tobin's Q	0.089	0.052	1.702	0.091*
Financial expertise	ROA	0.018	0.018	1.002	0.318
	ROE	0.018	0.048	0.367	0.714
	Tobin's Q	0.000	0.000	-0.673	0.502
Gender	ROA	0.117	0.033	3.508	0.001***
	ROE	0.220	0.088	2.506	0.013**
	Tobin's Q	0.002	0.001	2.167	0.032**
Age average (Young)	ROA	-6.958	3.166	-2.198	0.029**
	ROE	-16.717	8.380	-1.995	0.048**
	Tobin's Q	-0.106	0.076	-1.389	0.167
Age average (Middle)	ROA	-0.623	1.544	-0.403	0.687
	ROE	-0.698	4.067	-0.172	0.864
	Tobin's Q	-0.048	0.038	-1.249	0.213
Age average (Very old)	ROA	0.110	1.533	0.072	0.943
	ROE	6.560	4.119	1.593	0.113
	Tobin's Q	0.030	0.037	0.818	0.415

Table 6 (continued).

Meeting frequency	ROA	-0.075	0.543	-0.138	0.890
	ROE	0.326	1.485	0.220	0.826
	Tobin's Q	-0.016	0.014	-1.144	0.254
Leverage	ROA	-0.194	0.027	-7.273	0.000***
	ROE	-0.246	0.072	-3.415	0.001***
	Tobin's Q	0.002	0.001	2.421	0.017**
Firm size	ROA	0.969	0.383	2.529	0.012**
	ROE	1.966	1.017	1.933	0.055*
	Tobin's Q	-0.008	0.009	-0.872	0.385
Sector (Trade)	ROA	-1.429	1.862	-0.768	0.444
	ROE	2.612	5.099	0.512	0.609
	Tobin's Q	0.053	0.043	1.215	0.226
Sector (Service)	ROA	4.598	2.306	1.994	0.048**
	ROE	15.268	6.238	2.447	0.015**
	Tobin's Q	0.113	0.054	2.109	0.037**

***= significant at 1%

**= significant at 5%

*= significant at 10%

Regression analysis results revealed that there are three independent variables (audit committee independence, gender diversity, and age average) significantly associated with both ROA and ROE. Moreover, results also put forth that audit committee independence and gender diversity are significantly associated with Tobin's Q.

Table 7

Summary of Research Findings

Firm Performance (Dependent Variables)	Audit Committee Characteristics (Independent Variables)	Significance of Relation	Direction of Relation	Hypothesis Test Results
ROA	Independence	Significant at 10% level	Positive	H_{011} is rejected.
ROA	Financial expertise	Not significant	-	H_{012} is not rejected.
ROA	Gender	Significant at 1% level	Positive	H_{013} is rejected.
ROA	Age (Young)	Significant at 5% level	Negative	H_{014} is rejected.
ROA	Meeting frequency	Not significant	-	H_{015} is not rejected.
ROE	Independence	Significant at 10% level	Positive	H_{021} is rejected.
ROE	Financial expertise	Not significant	-	H_{022} is not rejected.
ROE	Gender	Significant at 5% level	Positive	H_{023} is rejected.
ROE	Age (Young)	Significant at 5% level	Negative	H_{024} is rejected.
ROE	Meeting frequency	Not significant	-	H_{025} is not rejected.
Tobin's Q	Independence	Significant at 10% level	Positive	H_{031} is rejected.
Tobin's Q	Financial expertise	Not significant	-	H_{032} is not rejected.
Tobin's Q	Gender	Significant at 5% level	Positive	H_{033} is rejected.
Tobin's Q	Age	Not significant	-	H_{034} is not rejected.
Tobin's Q	Meeting frequency	Not significant	-	H_{035} is not rejected.

The findings which are obtained from the regression analysis and summarized in Table 7, provide strong evidence for the rejection of the main hypothesis (H_0) “*Audit committee characteristics have no significant effect on firm performance*”, suggesting that the audit committee has a significant effect on the firm performance of BIST companies.

CHAPTER VI

CONCLUSION AND RECOMMENDATIONS

This thesis aimed to investigate the relationship between audit committee characteristics and the firm performance of 102 BIST companies, excluding the financial sector. Audit committee independence, financial/accounting expertise of members, gender, age average of members, and meeting frequency were employed as independent variables, and ROA, ROE, and Tobin's Q as dependent variables. Linear regression analysis was used to examine the impact of the independent variables on the dependent variables.

6.1. Summary and Conclusion

Regression results revealed that certain characteristics of the audit committee actually did have a significant effect on the financial performance of Turkish companies. Therefore, the main hypothesis (H_0) asserting that "*Audit committee characteristics have no significant effect on firm performance*" is rejected. Favorably, consistent results were obtained, with regards to a few of the variables being significant in all three models. Audit committee independence and gender have a significant and positive impact on ROA, ROE, and Tobin's Q. In addition, young audit committee members were found to have a significant and negative impact on ROA and ROE. The remaining independent variables, such as financial or accounting expertise and meeting frequency, have no influence on firm performance.

Audit committee independence refers to the committee being completely independent, or being made up of independent members only. Independence is one of the qualities audit committee members employed in Turkish companies are required to have according to the code of corporate governance. The positive impact of audit committee independence on firm performance can be explained by the belief that outside directors act in favor of shareholders, which is then associated with positive returns (Sanda, Garba, & Mikailu, (2011). The independent variable, gender, represents the percentage of female members on the audit committee board.

Because of fundamental and systematic differences between males and females, such as their core beliefs and values, the effect of gender diversity is perhaps present in terms of their status in companies (Adams & Funk, 2012). Linear regression results

reported a positive association between female members and firm performance, meaning as the number of females on the audit committee board increases, firm performance increases. Supporting this finding, Carter, D'Souza, Simkins, & Simpson (2010) in their study also find that the number of women on the board is positively associated with ROA. They propose that female directors usually have more college degrees and are more likely to hold advanced degrees compared to their male counterparts. Female directors are likely to possess more sales and marketing skills, are more cautious with risks, and attach more attention to corporate social responsibility and philanthropy (Burgess & Tharenou, 2002).

Age average of the audit committee, or age diversity, is one variable that has not been examined thoroughly and is rarely associated with firm performance. Literature that inspects the age diversity of boards in a developing economy such as Turkey is currently scarce. Therefore, this thesis intentionally includes age average as an independent variable within the scope of its study, as a means of filling the gap within literature. According to regression results, a significant and negative relationship exists between age average and both ROA and ROE. The reason behind the negative association could lie behind several reasons. To begin with, young members arguably do not possess the experience and knowledge that older members do, make impulsive decisions without considering likely consequences, and are generally high risk takers (Akisimire, Masoud, Baisi, & Orobia, 2016). As a result, members having these qualities can lead to companies incurring unnecessary expenses which will certainly lower their profits. This regression result is consistent with Akisimire et al., (2016) who also discovered that boards with a majority of young board members resulted in low performance level for manufacturing firms in Uganda. They too found a significant relationship between age diversity and firm performance.

In conclusion, independence is a characteristic that must be definitely practiced by audit committees of companies in Turkey. Prior studies confirm this finding as well. Secondly, it is beneficial in terms of financial performance for audit committees to be gender diverse, in contrast to all-male audit committees. Finally, a mix of old and young members should be employed as audit committee members. Having only young members has shown to negatively affect financial performance.

6.2. Limitations of the Study

This research, like most research studies, has some limitations that must be acknowledged so as to make suggestions for future studies. To list a few:

- Financial companies were excluded because they operate differently and have special practices. As a result, only publicly traded companies on BIST were included in the sample.
- Out of the 170 BIST companies, a sample size of 102 companies was used for the purpose of conducting a multiple regression.
- Only five audit committee characteristics were employed in the study.
- In the process of gathering information related to audit committee characteristics of companies from the official websites or other sources, there was limited access to certain data resulting in missing values in SPSS. This in turn caused a decrease in the number of observations that the regression analysis took into account.

6.3. Contribution to Literature

In the literature, although there are many studies in different countries investigating the effect of audit committees on the firm performance of public companies, there is no work covering different firm performance measures and various audit committee characteristics conducted in Turkey (as far as this research is aware of), making this thesis work unique. With this study, it is possible to acquire information of what an audit committee is, how it functions, its role in a company, and its duties. Additionally, by performing an application on BIST companies, future readers can gain knowledge on which audit committee factors affect firm performance of Turkish companies. It is expected that this thesis work will fill the gap in the field of auditing and related literature in Turkey.

6.4. Recommendations for Future Studies

This thesis examines the effect of specific audit committee characteristics on firm performance of BIST companies.

Instead of 102 companies, future researchers can do the same research using all BIST companies. Therefore, the analysis results can be better generalized over a wider range of companies. In addition, other audit committee characteristics that have not been analyzed in this study can be studied to enhance the quality of the research.

Moreover, some recommendations can be made for the practitioners and policy makers in Turkey. For instance, more policies can be made regarding the qualifications of audit committee members in Turkish companies, such as specifying the minimum age members should be at the time of employment or the financial/accounting expertise of members. The requirements should be very detailed and explained in depth in a charter, as to avoid any confusion or vagueness. Secondly, the obligatory establishment of audit committees in public companies can be extended further to encompass private companies as well if it is fitting to their business operations.

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APPENDICES

APPENDIX 1: LIST OF COMPANIES USED IN HYPOTHESIS TESTING

ACSEL	Acıselsan Acıpayam Selüloz Sanayi ve Ticaret A.Ş.
ADANA	Adana Çimento Sanayi T.A.Ş.
ADEL	Adel Kalemcilik Ticaret ve Sanayi A.Ş.
AFYON	Afyon Çimento Sanayi T.A.Ş.
AKPAZ	Akyürek Tüketim Ürünleri Pazarlama Dağıtım ve Ticaret A.Ş.
AKSUE	Aksu Enerji ve Ticaret A.Ş.
ASLAN	Aslan Çimento A.Ş.
AVOD	A.V.O.D. Kurutulmuş Gıda ve Tarım Ürünleri Sanayi Ticaret A.Ş.
BANVT	Banvit Bandırma Vitaminli Yem Sanayi A.Ş.
BFREN	Bosch Fren Sistemleri Sanayi ve Ticaret A.Ş.
BIZIM	Bizim Toptan Satış Mağazaları A.Ş.
BLCYT	Bilici Yatırım Sanayi ve Ticaret A.Ş.
CELHA	Çelik Halat ve Tel Sanayi A.Ş.
CEMAS	Çemaş Döküm Sanayi A.Ş.
CEMTS	Çemtaş Çelik Makina Sanayi ve Ticaret A.Ş.
CLEBI	Çelebi Hava Servisi A.Ş.
CRFSA	Carrefoursa Carrefour Sabancı Ticaret Merkezi A.Ş.
DAGI	Dagi Giyim Sanayi ve Ticaret A.Ş.
DESPC	Despec Bilgisayar Pazarlama ve Ticaret A.Ş.
DITAS	Ditaş Doğan Yedek Parça İmalat ve Teknik A.Ş.
DOAS	Doğuş Otomotiv Servis ve Ticaret A.Ş.
DOBUR	Doğan Burda Dergi Yayıncılık ve Pazarlama A.Ş.
EDIP	Edip Gayrimenkul Yatırım Sanayi ve Ticaret A.Ş.
EGPRO	Ege Profil Ticaret ve Sanayi A.Ş.
EGSER	Ege Seramik Sanayi ve Ticaret A.Ş.
EMKEL	Emek Elektrik Endüstrisi A.Ş.
ENKAI	Enka İnşaat ve Sanayi A.Ş.
EREGL	Ereğli Demir ve Çelik Fabrikaları T.A.Ş.
ERSU	Ersu Meyve ve Gıda Sanayi A.Ş.
FLAP	Flap Kongre Toplantı Hizmetleri Otomotiv ve Turizm A.Ş.
FMIZP	Federal-Mogul İzmit Piston ve Pim Üretim Tesisleri A.Ş.

Appendix 1 (continued).

FROTO	Ford Otomotiv Sanayi A.Ş.
GENTS	Gentaş Genel Metal Sanayi ve Ticaret A.Ş.
GEREL	Gersan Elektrik Ticaret ve Sanayi A.Ş.
GOLTS	Göлтаş Göller Bölgesi Çimento Sanayi ve Ticaret A.Ş.
GOODY	Goodyear Lastikleri T.A.Ş.
GSDDE	GSD Denizcilik Gayrimenkul İnşaat Sanayi ve Ticaret A.Ş.
GUBRF	Gübre Fabrikaları T.A.Ş.
HATEK	Hateks Hatay Tekstil İşletmeleri A.Ş.
HEKTS	Hektaş Ticaret T.A.Ş.
HURGZ	Hürriyet Gazetecilik ve Matbaacılık A.Ş.
IHEVA	İhlas Ev Aletleri İmalat Sanayi ve Ticaret A.Ş.
IHGZT	İhlas Gazetecilik A.Ş.
INDES	İndeks Bilgisayar Sistemleri Mühendislik Sanayi ve Ticaret A.Ş.
INTEM	İntema İnşaat ve Tesisat Malzemeleri Yatırım ve Pazarlama A.Ş.
IZMDC	İzmir Demir Çelik Sanayi A.Ş.
IZOCM	İzocam Ticaret ve Sanayi A.Ş.
JANTS	Jantsa Jant Sanayi ve Ticaret A.Ş.
KAPLM	Kaplamın Ambalaj Sanayi ve Ticaret A.Ş.
KAREL	Karel Elektronik Sanayi ve Ticaret A.Ş.
KARSN	Karsan Otomotiv Sanayi ve Ticaret A.Ş.
KARTN	Kartonsan Karton Sanayi ve Ticaret A.Ş.
KATMR	Katmerciler Araç Üstü Ekipman Sanayi ve Ticaret A.Ş.
KERVT	Kerevitaş Gıda Sanayi ve Ticaret A.Ş.
KNFRT	Konfrut Gıda Sanayi ve Ticaret A.Ş.
KONYA	Konya Çimento Sanayi A.Ş.
KORDS	Kordsa Teknik Tekstil A.Ş.
KRONT	Kron Telekomünikasyon Hizmetleri A.Ş.
KRSTL	Kristal Kola ve Meşrubat Sanayi Ticaret A.Ş.
KRTEK	Karsu Tekstil Sanayi ve Ticaret A.Ş.
KUTPO	Kütahya Porselen Sanayi A.Ş.
LINK	Link Bilgisayar Sistemleri Yazılımı ve Donanımı Sanayi ve Ticaret A.Ş.
LUKSK	Lüks Kadife Ticaret ve Sanayi A.Ş.
MAALT	Marmaris Altinyunus Turistik Tesisler A.Ş.
MAKTK	Makina Takım Endüstrisi A.Ş.
MARTI	Martı Otel İşletmeleri A.Ş.
MEPET	Mepet Metro Petrol ve Tesisleri Sanayi Ticaret A.Ş.
MERKO	Merko Gıda Sanayi ve Ticaret A.Ş.

Appendix 1 (continued).

METAL	Metal Gayrimenkul A.Ş.
MIPAZ	Milpa Ticari ve Sınai Ürünler Pazarlama Sanayi ve Ticaret A.Ş.
NUHCM	Nuh Çimento Sanayi A.Ş.
ORGE	Orge Enerji Elektrik Taahhüt A.Ş.
OZBAL	Özbal Çelik Boru Sanayi Ticaret ve Taahhüt A.Ş.
PARSN	Parsan Makina Parçaları Sanayi A.Ş.
PETKM	Petkim Petrokimya Holding A.Ş.
PETUN	Pınar Entegre Et ve Un Sanayi A.Ş.
PINSU	Pınar Su Sanayi ve Ticaret A.Ş.
PKART	Plastikkart Akıllı Kart İletişim Sistemleri Sanayi ve Ticaret A.Ş.
SARKY	Sarkuysan Elektrolitik Bakır Sanayi ve Ticaret A.Ş.
SASA	Sasa Polyester Sanayi A.Ş.
SELEC	Selçuk Ecza Deposu Ticaret ve Sanayi A.Ş.
SERVE	Serve Kırtasiye Sanayi ve Ticaret A.Ş.
SILVR	Silverline Endüstri ve Ticaret A.Ş.
SKTAS	Söktaş Tekstil Sanayi ve Ticaret A.Ş.
SODA	Soda Sanayi A.Ş.
TATGD	Tat Gıda Sanayi A.Ş.
TGSAS	TGS Dış Ticaret A.Ş.
THYAO	Türk Hava Yolları A.O.
TKNSA	Teknosa İç ve Dış Ticaret A.Ş.
TMSN	Tümosan Motor ve Traktör Sanayi A.Ş.
TOASO	Tofaş Türk Otomobil Fabrikası A.Ş.
TTKOM	Türk Telekomünikasyon A.Ş.
TUPRS	Tüpraş-Türkiye Petrol Rafinerileri A.Ş.
ULKER	Ülker Bisküvi Sanayi A.Ş.
UNYEC	Ünye Çimento Sanayi ve Ticaret A.Ş.
VESBE	Vestel Beyaz Eşya Sanayi ve Ticaret A.Ş.
VKING	Viking Kağıt ve Selüloz A.Ş.
YAPRK	Yaprak Süt ve Besi Çiftlikleri Sanayi ve Ticaret A.Ş.
YATAS	Yataş Yatak ve Yorgan Sanayi ve Ticaret A.Ş.
YUNSA	Yünsa Yünlü Sanayi ve Ticaret A.Ş.
YYAPI	Yeşil Yapı Endüstrisi A.Ş.
ZOREN	Zorlu Enerji Elektrik Üretim A.Ş.

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