LUND UNIVERSITY
School of Economics and Management

CORPORATE GOVERNANCE AND FIRM PERFORMANCE: THE CASE FOR TURKEY

BUSN 89 Degree Project in Corporate and Financial Management – Master Level

Spring 2016

Supervisor:

Maria Gårdängen

Authors:

Ece Oguz

Halide Hande Dincer

ACKNOWLEDGEMENTS

We would like to express our sincere gratitude to our supervisor Maria Gårdängen for the continuous support of our thesis for her patience, advices and motivations. Her guidance helped us all the time of research and writing of the paper.

We would like to also thank our bachelor professor who is Hasan Fehmi Baklacı that helped us to define our thesis topic, and Hasan Basri Biberoğlu and Viktoria Janovskis that supported us for proper English usage.

Besides them, we need to thank to our parents because without them we would not pursued our studies and dreams and to our all friends that provide us full support during this process.

This accomplishment would not have been possible without all of them.

LIST OF TABLES AND FIGURES

TABLE OF CONTENTS

ABSTRACT

In recent years, with corporate scandals and the global financial crisis there is continuous attention in the area of corporate governance which is the new concept in corporate world these days. It is seen as a moral duty and includes supporting the conformity to law and showing ethical guide. Corporate Governance is seen as a significant tool as firms' financial performance when investors take an investment decision is turning into a more serious topic so the relationship between corporate governance tools and financial performance measurements caught researchers' interest in the last decade primarily on developed countries as well as developing countries. In this study, we try to examine the effects of corporate governance on corporate financial performance for Turkey, using a sample of 90 companies on BIST for the time period between 2008 and 2014. Like previous papers, board size, ceo duality, board committees, board independence, firm size and firm age are the independent variables and their effects were measured on financial variables that are ROA, ROE and Tobin's Q.Various tests were used to investigate the relationship such as descriptive analysis, pairwise correlation and ordinary least squares by using secondary data over a period.

Under the lights of this research, it was found that overall, corporate governance variables have significant impact on firm financial performance and market value measurements. When we look at it separately, while no significant relationship between board size and all dependent variables was found, board independence has a significant and positive impact on all measurement variables. Moreover, the association between Ceo duality and all dependent variables was negative and it was found that having high number of board committees is positively correlated with all measurement variables but only significantly related with ROA.

Keywords: Corporate governance, corporate financial performance, Turkey

LIST OF ABBREVIATIONS

BIST: Borsa Istanbul – Istanbul Stock Exchange (New)

BIST 100: Borsa Istanbul 100 Endeksi – Istanbul Stock Exchange 100 Index

KAP: Kamuoyu Aydınlatma Platformu - Turkey Public Disclosure Platform

TKYD: Türkiye Kurumsal Yönetim Derneği – Corporate Governance Association Of Turkey

TÜSİAD: Türkiye İş Adamları Derneği – Turkish Industry And Business Association

CMB: Türkiye Sermaye Piyasası Kurulu - Capital Markets Board of Turkey

IMKB: Istanbul Menkul Kıymetler Borsası - Istanbul Stock Exchange (Old)

IMKB 100: Istanbul Menkul Kıymetler Borsası 100 Indeksi - Istanbul Stock Exchange 100 Index

VOB: Vadeli İşlemler Borsası Türkiye, Futures Exchange of Turkey

ROA: Return On Asset

ROE: Return on Equity

1.INTRODUCTION

1.1 Background

Corporate governance has been gaining importance ever since the mid 80s and in recent years, with rising of competitive power, the importance of the corporate governance concept has reached appreciable level. It is defined as the "rules and practices by which companies are guided or run" and it also improves the relationship between the managers and shareholders of a corporation, as well as its stakeholders. It contributes to growth and financial stability by boosting up market assurance, financial market, integrity and economic efficiency (Organisation for Economic Cooperation and Development (OECD,2004) therefore inadequacy of corporate governance policy of public and private sector is counted among the important reasons of the generated international financial crisis and company. It has become a concern both in developing and developed economies since previous financial scandals have increased demand for improved corporate governance practices (Baydoun et al 2013). The sudden disappearance of companies such as Enron and Worldcom which are prominent examples of world leading companies, showed that what is known about good company management needs to be thought through corporate scandals and mismanagements. This has caused the losses suffered by stakeholders of companies, primarily shareholders as a result the importance of corporate governance has increased further and becomes an essential part of financial markets, business and management. The reason for the concerns of corporate governance coming to the foreground and the protection of its position in the next years is corporate scandals that have happened recently. In the latest years after the fiscal crises happening in US and major corporate bankruptcies, corporate governance concept came to the fore in Turkey as well in order to be in harmony with the world and attract the foreign capital inflow to Turkey. Because Turkey has different characteristics, its improvement is more slowly when it is compared with developed markets. However, increasing need of foreign investment has boosted corporate governance applications in Turkey.

With the previous unfortunate incidents, many authors have studied about the relationship between corporate governance and firm performance and interestingly found different results. Some of them found a positive association between corporate governance and firm performance (Kiel and Nicholson, 2003; Haniffa and Hudaib, 2006; Jackling and Johl, 2009). Good corporate governance has become necessary for improving firm performance, establishing investor rights, enhancing the investment atmosphere and encouraging economic

development (Braga- Alves & Shastri, 2011) and has gained extensive fame in the stock market economy (Adiloglu & Vuran, 2012). Another researches stated that corporate governance influence firm performance inversely (Yermack, 1996; Hutchinson and Gul, 2003; Mashayekhi and Bazaz, 2008). Moreover, according to Bhagat and Black, 2002, there is no relationship between corporate governance practises and firm financial performance. In this context, this study investigates this relationship for the case of Turkey. This is because, generally studies has concentrated on developed or developing countries but in this context Turkey is a special case because according to different organizations it is defined as both developed and developing countries. Moreover while there are studies related to relationship between corporate governance and firm performance for Turkey, they were conducted by using different variables than independent variables that are used for this study. Since their variables are different, it is not possible to compare results with previous investigations. Therefore, it is found that there is a research gap for this case. Hence, the focus for this study is exploring the impacts of corporate governance variables that are board size, board independence, ceo duality, board committees, firm age and firm size on corporate financial performance and market value that are ROA, ROE and Tobin's Q.

1.2 Problem Discussion

It is obvious that corporate governance practices have many benefits for companies, countries and institutions. The most important benefits are rising business performance, easy access to low capital financial sources, efficient using of sources, positive image for company and country, providing security to investors, providing internal auditing to company, prevention of interest conflict and providing sustainability (Claessens, Djankor, Fan and Lang, 2003). They note that poor corporate governance not only causes low company performance but it can be also the reason for macroeconomic crises.

Although good corporate governance has benefits on financial performance, in developing countries it still has shortcomings while in developed countries corporate governance is structured well and has good implications. As compared with developed countries, social, economic environments and traditional management understandings hinder to reach the good corporate governance practises in developing countries (Arif Saldanlı, 2012).

The previous researches have not concentrated on the economies that show the characteristics of both developing and developed countries like Turkey. Different

organizations comprise different criterias to identify the country as developed or developing. Therefore while some organizations (Dow Jones, FTSE and MSCI) identify Turkey as developing, The CIA World Factbook defines Turkey as developed country. This lead to positioning of Turkey in the line between developed and developing countries. Hence it is not clear whether Turkish case will give same results with developing countries or developed ones. Moreover there are empirical studies that use same methodology and variables based on ceo duality, board independence, board committees and board size but in the cases for Turkey this relationship is examined with different methodology and variables based on 4 principles scores that are public transparency and disclosure, stakeholders, shareholders and board of directors. Therefore, Turkey will be used as the case for this study and we have considered to have same methodology with previous studies. By using the common methodology, we want compare our findings with the results of the other empirical studies that carried throughout the World. Hence firstly, this study might help us to enhance our understanding on the relationship of corporate governance and company's financial performance specifically in Turkey and secondly we want to see whether the results are same with the other studies or not. So these reasons make the topic worthy and the thesis will be beneficial for Turkish companies in the sense of understanding to what extent can corporate governance affect firm performance and considering to increase application of corporate governance.

1.3 Research Purpose and Question

From regulator perspective, there is a common belief regarding that good corporate governance applications have positive effect on firms' financial performance but corporate governance indicators have different correlation on firm financial performance in every countries. Therefore, the aim of this paper is to examine whether corporate governance applications of listed Turkish companies can affect their firm performance. To achieve this purpose, the following questions are presented:

1. To provide an analysis that examine to what extent do the various components of corporate governance which are board size, board independence, board committees, CEO duality, firm age and firm size influence the firm performance that are measured by ROA, ROE and Tobin's Q, by the help of percentages of companies' compliance.
2. To see whether the results from this paper will be similar with past studies that use same methodology for an other countries.

3. To analyze the relationship between CMB's recommendations and compliance of companies with them in order to understand whether compliance with advices ensure better corporate governance implementations.

1.4 Study Limitations

Sampled companies were chosen from only BIST that includes all listed companies. Therefore, unlisted companies could not be analyzed due to lack of information about their operations. The assessment of the relationship in small companies and financial institutions are not in the context of the research. The main source of data for this study is annual reports so when the companies do not publish their annual reports for some years or do not include special information that we need in this study, this hinders to reach the information source. Hence, there are some missing observations in this paper.

1.5 Report Structure

This Master thesis comprises of six chapters.
Section 1 gives the general background of the research, states problem discussion, research purpose and question and study limitations.
Section 2 gives details about background about corporate governance in Turkey, its improvement, its enhancing and CMB's indexes,
Section 3 presents literature review which provides general background about corporate governance, theoretical framework for corporate governance and previous empirical studies' findings about the relationship between corporate governance and financial performance,
Section 4 gives details about how the study will be conducted,
Section 5 presents the data interpretation of our empirical study,
Section 6 concludes the thesis.

2. SCOPES OF RESEARCH

2.1 Corporate Governance In Turkey

In order to increase the positive effect of capital markets on financial development and to improve corporate governance practices in Turkey, especially in the latest years after the fiscal crises happening in US and the major corporate bankruptcies, several regulations have been developed. The OECD Corporate Governance Principles that have been used as an example by the World were also taken as basis in studies done in Turkey. But the existing corporate structure in Turkey has many differences compared to its developed market counterparts. Some of the significant differences are that (Arif Saldanlı, 2012):

- Most corporations are run by families.
- Big groups in different industries dominate markets with horizontal growth.
- The number of publicly held firms is low.
- The percentage of capital stock is low.

With these qualities, Corporate Governance in Turkey develops more slowly than the other developed markets. However, the present increasing need for foreign investment has a positive effect on Corporate Governance implementations.

According to the ‘’Investors in the Emerging Markets Survey’’ carried out by the consulting firm McKinsey, investment criteria for an emerging market such as Turkey are;

- Compatibility with Corporate Governance Principles
- Transparency of reporting
- Clear distinction between family relations and company management. (Cuhruk & Özkan, 2004)

The concept of Corporate Governance was first introduced to Turkey by the Turkish Industry & Business Association (TUSIAD) in 2002 as titled ‘‘Corporate Governance- Best Application Code’’ based on the OECD’s Corporate Governance Principles. Because the board of directors plays the biggest role in the well application and implementation of corporate governance in Turkey, the formation of the board of directors, its independence and its agenda were heavily focused on in the aforementioned study. This published code was aimed for primarily the public corporations and others to voluntarily follow as guidance for the management and structure of boards of directors (KAP, 2002). Even though Corporate Governance- Best Application Code is limited to the board of directors, it started the discussion

of Corporate Governance in Turkey. Members of the study group founded the Corporate Governance Association of Turkey (TKYD) in 2003. This association made an important contribution to the recognition and the widespread of corporate governance in Turkey. In the same year, Capital Markets Board of Turkey (CMB), in parallel with the applications around the world, published ‘’Principles of Corporate Governance’’ aimed primarily at public corporations and also at all anonymous firms operating in public and private sectors. This report was also based on OECD’s ‘’Principles of Corporate Governance’’. (KAP 2002)

In February 2005, this report was revised in parallel with OECD’s updated version published in July 2003. Principles consist of four main segments; shareholders, public disclosure and transparency, stakeholders and the Board of directors. Public Corporations are only expected to follow these rules voluntarily. In addition to this, ‘comply or explain’ principle was adopted. This principle predicts whether or not the mentioned principles were applied properly and if it is not applied, company should explain it.(TKYD, 2015)

In addition to this, these principles enforce the companies, whose shares are traded on BIST, to prepare and publish the Corporate Governance Compliance Report from 2005. This report is published in annual reports and on firms’ web sites every year and it aims to show the firm behaviour across the corporate governance practices to investors. In this report, the principles in CMB’s Principles of CG will be specified and shown if they are followed by firms or not. Regarding the ones which are not followed, the reasons for not following and the consequences of not following will be clarified. (TKYD, 2015) After these developments BIST created the Corporate Governance Index in 2005 in order to help the application of CG, encourage companies to reference each other, measure the CG level of public corporations and to help investors make decisions (Kılıç, 2008). In 2006, in order to inspect CG applications ‘’Corporate Governance in Turkey: A Pilot Study’’ was published by OECD. It entailed points regarding the development of CG in Turkey. Following this rearrangement CMB’s CG evaluation principles were revised. Two innovations were introduced by a notification from CMB in 2008 in order to resolve the problems with application and to increase the applicability of CG. Following the 2008, CMB has published new communiques in 2011 and 2014 to have better corporate governance application (*See Table 1)*.

The concept of Corporate Governance was first included in the Turkish Commercial Code as well in 2012. The code also includes some regulations concerning CG applications that are obligatory for both public anonymous companies and some other types. Turkish Commercial Code contributed to the notion of CG in the following points: CMB’s monopolistic authority on regulations, board of directors’ management explanation, right to accession, conglomerate,

standards of financial reporting, inspection, board of directors, general board and protection of shareholders.

Table 1: 2011 and 2014 Communique on Corporate Governance by CMB

CORPORATE GOVERNANCE VARIABLES	II-17.1 COMMUNIQUÉ ON CORPORATE GOVERNANCE BY CMB *(Published in the Official Gazette dated 3 January 2014 and numbered 28871)*	IV- 56 COMMUNIQUÉ ON CORPORATE GOVERNANCE BY CMB *(Published in the Official Gazette dated 3 December 2011 and numbered 28158)*
BOARD SIZE	4.3.1. ‘‘The number of members of the board of directors, provided that the number is not less than five in any case, shall be determined in order to ensure that the board members conduct productive and constructive activities, make rapid and rational decisions and efficiently organize the formation and activities of the committees.’’	4.3.1. ‘‘The number of members of the board of directors, provided that the number is not less than five in any case, shall be determined in order to ensure that the board members conduct productive and constructive activities, make rapid and rational decisions and efficiently organize the formation and activities of the committees.’’
BOARD INDEPENDENCE (Non-executive members)	4.3.2. ‘‘A Majority of the members of the board of directors shall consist of members who do not have an executive duty. A Non-executive member of the board of directors shall be the person who does not have any administrative duty other than being a board member or any executive unit subsidiaries to himself/herself and is not involved in the daily work routine or ordinary activities of the corporation.’’	4.3.2. ‘‘A Majority of the members of the board of directors shall consist of members who do not have an executive duty. A Non-executive member of the board of directors shall be the person who does not have any administrative duty other than being a board member or any executive unit subsidiaries to himself/herself and is not involved in the daily work routine or ordinary activities of the corporation.’’
BOARD COMMITTEES	4.5.1. ‘‘Board of directors shall form an “Audit Committee” (except for banks), “Early Detection of Risk Committee” (except for banks), “Corporate Governance Committee”, “Nomination Committee, Compensation Committee” (except for banks) in order to fulfill its duties and	4.5.1. ‘‘Board of directors shall form an “Audit Committee” (except for banks), “Early Detection of Risk Committee” (except for banks), “Corporate Governance Committee”, “Nomination Committee, Compensation Committee” (except for banks) in order to fulfill its duties and

	responsibilities in a reliable way. However, in case that a separate nomination committee and compensation committee cannot be established due to the structure of the board of directors, corporate governance committee shall fulfill the duties of such committees.''(It is deduced that Turkish firms should have at least 3 committees in their board.)	responsibilities in a reliable way. However, in case that a separate early detection of risk committee nomination committee and compensation committee cannot be established due to the structure of the board of directors, corporate governance committee shall fulfill the duties of such committees.''(It is deduced that Turkish firms should have at least 2 committees in their board.)
CEO DUALITY	4.2.5. ''Authorities of the chairman of the board of directors and the chief executive officer/general manager shall be explicitly separated and this separation shall be set forth in the articles of association in written form. No one in the corporation shall be delegated with limitless decision-making authority.'' 4.2.6. ''In case it has been resolved that the chairman of the board of directors and the chief executive officer/general manager would be the same person, this situation shall be disclosed at PDP with its grounds.''	4.2.5. ''Authorities of the chairman of the board of directors and the chief executive officer/general manager shall be explicitly separated and this separation shall be set forth in the articles of association in written form. No one in the corporation shall be delegated with limitless decision-making authority.'' 4.2.6. ''In case it has been resolved that the chairman of the board of directors and the chief executive officer/general manager would be the same person, this situation shall be disclosed at PDP with its grounds.'

2.2 Enhancing The Corporate Governance in Turkey

In this part previous and current corporate governance positionings in Turkey will be explained with the help of two researches.

First research was done by CMB to determine to what extent do the companies that enter IMKB 100 Index actually apply corporate governance principles and to what extent are these companies transparent to public and their stakeholders (CMB, 02.05.2008, weekly bulletin no. 2008/18). The result of this study reveals that even the top 100 companies, that entered IMKB 100 among all 319 companies, according to their market values and transaction volume criteria, do not apply the corporate governance principles adequately and have incomplete reports of corporate governance compliance (Saim Kılıç, 2011).

The second report was prepared by StratejiCo to measure the corporate governance perception in Turkey with the occasion of TKYD's 10th year (2013). The most important finding from this research was that although there is increase in corporate governance application during the period, there are still problems. Most notable obstacles in front of corporate governance are the personal misconceptions from executive positions regarding loss of authority. In other words, while corporate governance is seen as a part of the resolution process, it is ignored by managers that do not want to share the authority to take decision. This is especially the case in cities outside of Istanbul because in these cities, the founding family members have a remarkable say in the company management. Participants that see failure in the distribution of authority in the decision-making process regard it as a threat to the company's sustainability, see the sustainability and continuity of the operations after the founder as one of the supporting factors. Also they consider these factors to naturally improve the company's reputation. In this report, the importance of professional managers was emphasized by participants to raise public awareness on corporate governance. However when it comes to the point of adoption and application of the principles of corporate governance, attitudes of firm owners and especially first generation family members are crucial. Most participants defend that corporate governance will not be successfully applied unless members of the family, that have established the company, are convinced to do so. In this research, it is deduced that public institutions are the most confided group regarding corporate governance practices (TKYD 10. Th year Report).

In summary, according to these researches, it can be concluded that corporate governance in Turkey is developing but it is still not well developed and the coercive effect of the state is still the most powerful factor. Hence, more coercive interventions from the state and more laws in place are needed to have better established corporate governance in Turkey.

2.3 BIST and BIST Indexes

BIST (formerly known as IMKB) is the abbreviation for Borsa Istanbul.Stocks are traded on BIST, which was founded by bringing together VOB and Istanbul Gold Exchange. Companies that want to make their shares public for the first time get permission from SPK and sell them through intermediary institutions. The transactions that take place after the first sale are carried out through BIST. So the second hand sale of a share takes place on BIST.

BIST 100 Index; is used as the main index for BIST. It consist of 100 firms, selected from companies that are traded on the National Market, Real Estate Investment Companies and Venture Capital Investment Trusts that are traded on Corporate Products Market

BIST 50 Index; consist of 50 firms, selected from companies that are traded on the National Market, Real Estate Investment Companies and Venture Capital Investment Trusts that are traded on Corporate Products Market.

BIST 30 Index; consists of 30 firms, selected from companies that are traded on the National Market, Real Estate Investment Companies and Venture Capital Investment Trusts that are traded on Corporate Products Market BIST 10 Bank Index: Includes 10 banks' shares that are traded on the National Market and have the highest liquidity and market value among others.

BIST Corporate Governance Index; consists of the shares of companies that are traded on Istanbul Stock Exchange and that scored at least 7 points out of 10 according to the principles of compliance with corporate governance.

BIST All Index; consists of shares of the companies that are traded on the National Market and Second National Market, Real Estate Investment Companies and Venture Capital Investment Trusts that are traded on Corporate Products Market.

3.LITERATURE REVIEW

Corporate governance is a modern management approach that is quite popular all over the world for last 20 years. The dramatic rise of globalization in recent years has left companies under pressure to expand in international markets. In addition, globalisation has brought with changes in the structure of business management, strategy and major administration (Musteen et al., 2009: 321).With the effect of globalisation, investor decisions, increasing expansion of international trade, increased competition, rules implemented by stock exchanges, purchasing and acquisitions and firm valuation criteria, the importance of corporate governance issue continues to attract the attention of national and international organizations (Yavuz et al., 2015) and gain widespread prominence in the capital market economy (Adiloglu et al., 2012). Because of all these reasons, corporate governance has caught the attention of most scholars and corporate governance is touched upon in many studies.

3.1 Corporate Governance Concept

To have better application and efficient results, corporate governance concept and its legal system should be understood well. Corporate governance is an essential element of modern business and management approach. Likewise, corporate governance is an integral part of the strategic management. (Gürbüz&Ergincan, 2004:1).The main aim of the corporate governance is to provide good relationship among stakeholders.

While in a narrow perspective corporate governance incorporated the relationships among shareholders, managers, auditors and others related to business(Pandya, 2011), from a broader perspective, corporate governance covers whole market as investor confidence, efficient capital allocation and whole economy as wealth development and country welfare development that are important for the company (Fülöp, 2014).

Corporate governance has another two different views as well. While from the restraint view, corporate governance is seen as a law that helps the owners to accomplish their interests (Cretu, 2012), from the large view corporate governance is seen as the mechanism that helps to protect whole stakeholders' interests (Cretu, 2012).

From TUSIAD's viewpoint, in its broadest sense the concept of corporate governance is the regulation of any organization's management that people creates to achieve some aims. In the narrow sense, corporate governance states all laws, regulations, codes of practice that enable attracting human and financial capital. (TUSIAD Report, 2002).

3.2 Corporate Governance Definitions

Corporate governance is open concept so it has different meanings according to different scholars. Generally, it is the system that is governed and controlled by organizations. In particular it is related with the relationship between management and shareholders. While the Cadbury report on the Committee of the financial Assets of Corporate governance that was led by Sir Adrian Cadbury defines the phrase 'corporate governance' as the system by which companies are guided and guarded, OECD defines "Corporate governance involves a set of relationships between a company's management, its board, its shareholders and other stakeholders. Corporate governance also provides the structure through which the objectives of the company are set, and the means of attaining those objectives and monitoring performance are determined." (OECD Principles of Corporate Governance)

Generally it refers to the process and structure for inspecting the direction and management of a business entity, so that it carries out its objectives effectively (Report on the observance of standards and codes (ROSC) 2005; Bozec&Dia, 2007). As what O'Sullivan (2000) stated, one can intensify and influence economic and financial performance with the proper corporate governance practices. Accordingly, corporate governance plays an important role in the allocation of resources and returns. OECD (1999) has defined the corporate governance as ''Corporate governance is the system by which business corporations are directed and controlled.'' It means the practise of power on corporations through board of directors. (Tricker, 2000). Mac Millan and Downing (1999) have identified the corporate governance as directed and controlled system to obtain high financial performance.

3.3 Theories Related to Corporate Governance

3.3.1Agency Theory

The origin of Agency theory come from economic theory that is revealed by Alchian and Demsetz and it was developed by Jensen and Meckling (1976). The theory is specified as the relationship between agents and principals in the business. It is relevant with solving the problem between shareholders(principals) and managers(agents). Principals expect that agents act and take decisions for the interests of shareholders and work for maximizing their wealth. This agency problem can occur in two situations; when interests of agents and principals don't fall in line with each other and when principals and agents have different risk tolerances. Hence, the agency problem will cause inefficiencies, financial losses and agency cost which is determined by Jensen and Meckling (1976) as ''the sum of monitoring expenditure by the principal to limit the aberrant activities of the agent; bonding expenditure by the agent which will guarantee that certain actions of the agent will not harm the principal or to ensure the principal is compensated if such actions occur; and the residual loss which is the dollar equivalent to the reduction of welfare as a result of the divergence between the agents decisions and those decisions that would maximize the welfare of the principal''.

Many researches (Pearce&Zahra, 1992; Bhagat&Black, 1998; Daily & Dalton, 1994; Kiel & Nicholson, 2003) have emphasized on board composition because according to agency theory ,the first duty of board is maximizing shareholder value so within this framework agents are seen as managers, principals are owners and board are perceived as monitoring mechanism

(Mallin, 2004). Ceo duality is another tool to minimize the agency problem as well. When the positions of CEO and chairman of the board are held by different people, agency problem decreases. This is because,in this case CEO is responsible for management and chairman is in charge of monitoring. Hence, principals' interests can be preserved from agents.

3.3.2 Stakeholder theory

Stakeholder theory was well incorporated in management routine in 1970 but Freeman (1984) introduced corporate accountability to wider array of stakeholders.Contrary to agency theory, here managers are working for and assisting stakeholders, Stakeholder theory suggested that managers should have a system of associations among stakeholder. Also unlike agency theory that give more significance to the association of owner,employee and manager ,for stakeholder theory the network of them is more important(Freeman, 1999). However, according to Sundaram & Inkpen (2004),stakeholder theory refers to a group of stakeholder who needs management's interest. In addition, Donaldson & Preston (1995) mentioned that stakeholder consists of a group involved in a business to take advantages. On the other hand, Clarkson (1995) suggests that aim of companies is to generate wealth for their stakeholders.

Freeman (1984) , network of associations among various groups may influence firm's decision making process since stakeholder theory focuses on the essence of these associations regarding processes and consequences for companies and their stakeholders. Donaldson & Preston (1995) stated that stakeholder theory concentrates on the interests of stakeholders as well as managerial decision making processes.

3.4 Good Corporate Governance and Its Importance

Good corporate governance means setting up a well management structure within the organisation to create and have a reassuring relations between company's board of directors, the management, employees and shareholders to service the interests of shareholders, not ignoring all stakeholders' interests (PTTPLC explanation) on the contrary ASX Principles of Good Corporate Governance and Best Practices Recommendations (2003) defines good corporate governance as ' the structure that encourages companies to create value and provide accountability'.

Corporate governance becomes an important assessment tool for investment choices because there are many empirical researches that show a positive correlation between corporate governance and financial performance. In other words, when the investors are on the decision process, they firstly look at corporate governance implications and its compliance with regulations or advices .Therefore, corporate governance becomes an important key element of investment decision.

When benefits of corporate governance are examined from the perspective of companies, having high quality of corporate governance means low capital cost, increasing capacity of financing and liquidity and not excluding of well managed companies from capital markets (CMB, 2005:2).

On the other hand when this situation is analyzed through the perspective of Turkey, good corporate governance causes an improvement on the prestige of the country, prevention of outflow of capital, increase of foreign capital investments, increase of competitive power and capital markets, overcoming of crisis with less loss, distributing of resources more effectively and providing and maintaining of high prosperity (CMB, 2005:2).

3.5 Associations Between Independent Variables and Firm Performance

3.5.1 Board Size And Firm Performance

The size of board affects firm performance according to previous studies. A review of these empirical studies shows mixed results. Lipton and Lorsch (1992) supports Jensen(1983) who recommended the board size has optimal number of maximum of seven to eight members. Concurring with this, Sulaiman et al. (2012) states that the board size should be standardized and not should be too large or small. However, optimal board size should be determined in terms of industries because Adams and Mehran (2003) state that banks should have large boards while manufacturing firms must have less. According to Hackman (1990) Organizational behavior researchers note that larger boards decrease total productivity. Forbes and Milliken (1999) cite that if the board size become larger, the coordination will be difficult and value-maximizing strategic decisions will be made hardly. According to Cheng (2008), large boards cause lower profitability since they are conservative and they take less risks. Chan and Li (2008) and De Andres, Azofra and Lopez (2005) cite that larger boards mean poor performance

because when board size increases, monitoring becomes infective. According to Yermack (1996), there is inverse relationship between board size and firm performance.

On the other hand, there are also some findings about positive relationship between board size and firm performance. Mohamed (2009) conducted a study on sample of 174 financial institutions and savings-and-loan-holding companies between 1995 and 2002 and he states that large boards do not reduce firm performance. In addition, Anderson, Mansi and Reeb (2004), Klein (2002) and Monk and Minnow (1995) find that with the larger boards, quality of monitoring can be increased. Dehaene et al. (2001) find that board size is positively related with firm performance. Finally, Connelly and Limpaphayom (2004) notes that there is no relationship between board size and firm performance.

H1: There is a negative relationship between the board size and financial performance

3.5.2 Ceo Duality and Firm Performance

Another dilemma experienced by companies is whether chairman of board of directors and CEO should hold different positions or not. Koufopoulos et al. (2010) cites that since CEO has an influential power on companies' strategic decisions, CEO that has dual role affect board's decisions and firm performance negatively. Also, Syriopoulos et al. (2012) notes that dual role has negative impact on monitoring and decisions of board of directors. According to Dar et al. (2011), CEO and chairman might influence firm performance since if same person works for both positions, agency problem increases. In addition , Baysinger and Hoskisson, 1990 ,Fama and Jensen, (1983), Rechner and Dalton, (1991) stated that separation of responsibilities will cause a rise in effectiveness of monitoring and increase in the level of separation between board of directors and management. In addition, Brickley et al. (2005) showed that holding two positions by one person will lead to conflict of interests and higher agency problem.

Other researchers found that when CEO has dual role, organizations will ; have unequivocal and powerful leadership; extinguish possible conflict between CEO and chairman and eliminate the confusion of two representatives from the perspective of stakeholder. (Davis, Schoorman and Donaldson, 1997; Donaldson and Davis, 1991). Cannella and Lubatkin (1993) also reported that there is positive relationship between dual leadership and firm performance. Consistent with these arguments, Simpson and Gleason (1999) found that when CEO hold dual leadership, they are less probable to face with financial distress. Also, the stewardship theory

states that having single leader for both positions may lead to good governance with positive influence on financial performance due to combination of directions that accelerates decision-making process. Feng, Goshan and Sirmans (2005) examined the relationship between BoD and Real Estate Investment Trust (REIT) performance and they could not find any significant link between dual role and firm performance. All in all ,both views were discussed and the link between dual leadership and firm performance is mixed and indecisive.

H2: There is a negative association between CEO/Chairman Duality and firm performance**.**

3.5.3 Board Composition And Firm Performance

Another significant variable of corporate governance is board composition that means formal organization of Board of Directors. Abdullah (2004) states that the board of director consist of group of people who set strategic decisions and it has important roles to lead and direct the firm in order to achieve company's goals. It is crucial to provide that boards are independent from management. This is because, board composition can reduce principal–agent problem since participation of non-executive directors ensures to keep competitiveness of firms.

There have been many studies that examine the link between independent directors and firm performance and they gave mixed results. Some authors (Ezzamel & Watson, 1993; Hossain et al., 2001; Vance, 1964) reported a positive link between board composition and firm performance. According to Chen (2011) ,companies should have more non executive directors to provide efficient operations. Also, Lam and Lee (2012) noted that when boards have more independent non-executive members, boards become effective. Fama and Jensen (1983) also mentioned that non-executive directors can decrease agency problems and make effective decisions. Bhojraj and Sengupta (2003) and Ashbaugh-Skaife, Collins and Kinney (2006) suggested larger amount of independent directors that are assigned increase bond and credit ratings. Moreover, O' Sullivan (2000) analyzed a sample of 402 UK firms and found that non-executive directors ensure comprehensive audit.

Some studies support the negative relationship between board composition and firm performance. According to Yammeesri and Herath (2010) , if firm has more insider directors, its firm value will increase compared with the board having more outside directors. Agrawal and Knoeber (1996) and Yermack (1996) noted that there is a negative link between board

composition and firm performance measured by Tobin's Q. Klein (1998) also mentioned that market value of equity is negatively related with proportion of independent directors in the boards. Cornet et al. (2007) analyzed 100 largest firms in the U.S. as ranked by S&P and found that increasing proportion of independent directors causes a decrease in earnings management. In addition, the study conducted by Roodposhti and Chashmi (2010) in Iran found a negative relationship between board independence and earnings management.

Some scholars could not find any significant relationships between these variables. For example; Fogel and Geier (2007) stated that it is not guarantee that companies with large number of non-executive directors on their boards achieve good corporate governance. Dalton et al.,(2011) could not find any relationship between board independence and firm performance. Also , According to Byrd & Hickman, (1992); Chin, Vos & Casey, (2003); Daily & Dalton, (1992); Mace, (1986) , board composition and firm performance are not related significantly. As understood from previous studies , there are different results and it is assumed that increasing proportion of non executive directors can boost firm performance so the hypothesis is ;

H3: There is a positive link between board composition and firm performance.

3.5.4 Board Committees And Firm Performance

Number of Board committees are also important measurement for firm performance according to the past studies. McMullen, (1996) reported that firms which have audit committees have less financial distress. Klein (2002b) mentions that independent audit committees decrease probability of earnings management so it can increase transparency. On the other hand , Baxter (2006) could not find any relationship between the quality of firm's financial reports and presence of audit committees. Main and Johnston (1998) and Weir and Laing (2000) argue that existence of remuneration committee leads to beneficial impact on firm performance. According to Klein (1998) ,there is a positive link between remuneration committee and firm performance but not significantly. Abbott et al., (2004) , the presence of audit committees can decrease mistakes and abnormalities and Carcello and Neal, (2000), noted that it affects the decisions of credit rating agencies in a positive way.

Comparing to other variables, studies related to link between board committees and firm performance are few so it is assumed that there is positive relationship.

H4: There is positive link between the presence of board committees and firm performance.

3.5.5 Firm Size and Firm Performance

Some studies states that there is a positive relationship between firm size and firm's financial performance (Black et al., 2006) (Serrasqueiro&Nunes, 2008). This is because,when the firm size increase,generating internal fund and accessing external capital become easier. When the firm size increases, diversification in company's operations increases as well and this leads to confusion in management (Fama&Jensen, 1983; Boone et al., 2007). With this confusion, larger firms require more counseling than smaller firms on board and this will lead to more efficient and more diversified company strategies, hence larger companies might generate a better financial performance than smaller companies.

On the other hand, there are some studies that show negative relationship between firm size and financial performance. Larger firms need more monitoring (Nenova, 2003; Garen, 1994; Agrawal&Knoeber, 1996) which ends up creating extra costs for firms. (Nenova, 2003) From different viewpoint, when the firm size increases, management might loss its control on the strategic and operational decisions and this might be end up with less efficiency (Agrawal and Knoeber, 1996). Lastly, it is argued that the probability of meeting with agency problem is higher for large firms so it will cause a decrease in firm performance. Moreover, because large firms should have more advanced internal control than small firms , the cost of auditing increase to be able to act according to stakeholders' interests.(Jensen and Meckling, 1976).

H5: There is a negative association between firm size and firm performance

3.5.6 Firm Age and Firm Performance

There are some researches that used the firm age as control variable when they analyzed the its effect on firm financial performance. They emphasize on the importance of firm age in terms of expected growth opportunity.

Old and large companies have better compliance with the advices of public authorities, better reputation, more opportunities to access the external capital. Also, they have lower risk of financial distress and less growth opportunities(Claessens et al., 2002). Nevertheless, young

and small companies might have better growth opportunities but higher risk for financial distress. While old companies have more experience and skills, they are less dynamic and are not good at adapting changes (Evans, 1987; Boone et al., 2007).

Small and young companies earn less profit than older and larger companies because they are new in the market and they must spend more effort to show their presence in the market Nevertheless, they are better than older firms in adapting new business environments(Lipczinsky and Wilson, 2001). Since young companies are at the beginning of growth stage,they might catch better growth opportunities(Black et al., 2006)**.**

H6: There is negative relationship between firm age and firm performance

4. EMPIRICAL INVESTIGATION

4.1 Research Design

The aim of this study is to analyze the relationship between variables of corporate governance and financial performance for Turkish listed companies. This section describes the research methods to test the hypotheses presented above. Therefore analysis relies on quantitative approach which is the most proper method to measure this relationship, to test the hypotheses and answer the research questions. In this chapter, statistical analysis and tables are used to support this study. The section follows with an explanation of the methodology used for research design, data sources and collection, variable descriptions, model specification and data analysis.

4.2 Sampling, Data Sources And Collection

The research has been conducted on 90 listed Turkish firms that are traded in BIST. Companies were chosen from among the best 100 companies (BIST 100 index) because findings and results of this study will be more readily comparable, reliable and more informative. Furthermore, with the use of the best firms it is easier to obtain information about their corporate governance practices due to the their well organized and extensive annual

reports. In the research, financial institutions and insurance companies were excluded because financial institutions have different accounting standards which makes the results incomparable with non financial firms and having many fluctuations in the financial position of financial institutions creates volatile results. (Ferreira Caixe&Krauter, 2014; Moradi et al., 2012). Therefore, financial institutions and insurance companies were excluded from the sample as well as companies that do not have all the required information. However, after removing these companies from the sample, 90 companies that is our aim for number of sampled data could not be collected. In order to complete the sample, remaining companies were taken from other BIST indices *(See Appendix 14)*. The sampling period is decided to be between 2008-2014 in the study because between these years we expect to see improvement in corporate governance practices of firms in parallel with the revisions of CMB.

In our analysis we used secondary data which was obtained from BIST, KAP, TKYD and CMB, firms' web sites and annual reports to analyze and evaluate the variables which are firm's establishment year, book value of total assets, book value of total liabilities, share price, number of issued shares, net income, number of board members, presence of ceo duality, number of board committees and number of non executive directors.

4.3 Variable Descriptions

Three types of variables which are corporate governance (independent), control variables (independent) and variables for financial performance (dependent), are conducted in this paper.

4.3.1 Corporate Governance Variables

In this paper, the variables below were used as corporate governance indicators because they are the building blocks of corporate governance. While transforming the information in annual reports of companies to our sampled data for analysis, we followed the same procedure as the previous studies.

Table 2: Corporate Governance Variables (Explanatory-Independent)

Independent Variables	Definition	Measurement
-Explanatory Variables		
BOSIZ	Board Size	Number of total board members
BOIND	Board Independence	Ratio of non-executive members over total board members
BOCOM	Board Committees	Number of total board committees
CEODUA	Ceo Duality	Coded ''1'' if chairman also holds the position of Ceo and ''0'' otherwise

4.3.2 Financial Performance Variables

Different studies have used different ratios and measurements to investigate firm performance. Most of the studies tried to estimate the firm performance with the help of several financial measures such as Tobin‘s Q (Yermack, 1996; Weir et al., 2002; Kiel and Nicholson, 2003), ROA (Yermack, 1996; Zajac and Westphal, 1996; Shrader et al., 1997; Kiel and Nicholson, 2003), ROE (Bhagat et al., 1999; Adjaoud et al., 2007), ROI (Boyd, 1995; Adjaoud et al., 2007) and net profit margin (Bauer et a,l., 2004).

In this research, financial performance variables are dependent variables in the regression and two accounting based measures which are ROA and ROE are used because they are the most common ratios used to measure financial performance (Adewale&Rahmon, 2014) and higher ROA and ROE show higher financial performance (Al-Matari et al., 2014; Habbash & Bajaher, 2014; Vo&Nguyen, 2014). Accounting based measures use audited accounting data and this ensures a more reliable and clear perspective towards companies therefore market does not distort these measures. Because they are based on book values, these measures less volatility and more reliable than market based indicators like stock returns, share prices, etc. (Lopez et al., 2007). As the final financial performance variable, Tobin’s Q which entails market value of equity, is assigned to examine the firm performance from the market aspect. While market value based measures are criticized by some scholars, on the other hand, they consider the investors’ perceptions of the company’s potential performance (Daily, Dalton&Canella, 2003).

According to Haniffa&Hudaib (2006) there is no certain result that shows which measure is the best when you examine firms' financial performance.

4.3.2.1 Accounting Based Measurements (ROA)- (ROE)

ROA provides a general understanding of companies' characteristics (Kim, 2005) and shows actual company performance (Ponnu, 2008). It is a good ratio to evaluate how the company efficiently uses its total assets when it generates profit. ROE focuses on return to company shareholders, it provides a quick and easy way to give an idea about company and it gives a trustworthy performance measure for shareholders (Johnson and Greening, 1999). From a shareholder perspective, ROE is seen as a significant ratio when analyzing firm's financial performance because of its focus on shareholders' returns (Demsetz and Lehn, 1985; Mehran 1995).

Different studies remark different advantages of using ROA and ROE when analyzing firm performance. Firstly, ROA and ROE extinguish the problem of firm size. When there is a comparison among firms, they provide an effective and basic results (Lev and Sunder, 1979). According to Demsetz&Lehn, (1985), ROA and ROE are better at showing the year to year fluctuations than market value based measures since market is very sensitive to changes. Because of these reasons ROA and ROE are selected as financial performance measurements for this study.

4.3.2.2 Market Based Measurement (Tobin's Q)

As final dependent variable, also to look from a different perspective, Tobin's Q was used in the regression to measure firm value in the financial market. This measure is one of the most used financial performance measure as a dependent variable in empirical researches. (Agrawal & Knoeber, 1996; Chung & Pruitt, 1994; Hossain et al., 2001; Kang & Stulz, 1996; 120 Loderer&Peyer, 2002; Perfect&Wiles, 1994; Reddy et al., 2008) and Himmelberg et al. (1999), Palia (2001) and Bhagat and Jefferis (2002) have used Tobin's Q in their study to evaluate firms. This measure calculates the market value for one unit of assets and represents market value of firm without ignoring risks and warping the results (Al-Matari et al., 2014; Habbash et

al., 2014). On the other hand, Tobin's Q is strongly influenced by unstable factors, such as investor behaviour, and market forecasts because it is based on the financial market .

Table 3: Firm Performance Variables (Dependent Variables)

Dependent Variables	Definition	Measurement
ROA	Return On Asset	Ratio of net income over total book value of asset
ROE	Return On Equity	Ratio of net income over total book value of equity
TOBIN'S Q	TOBIN'S Q	(Market value of equity+book value of liability)/book value of asset

4.3.3 Control Variables

Beside the explanatory and explained variables, control variables were used to investigate the firm financial performance. Different studies (Morck et al., 1988; Yermack, 1996; Shin and Stulz, 2000; Gompers et al., 2003; Black et al., 2006) have used different control variables. In this study firm size and firm age are used as control variables.

4.3.3.1 Firm size

To follow the same way with previous studies (Zhu and Tian,2009; Anderson&Reeb, 2004; Muth&Donaldson, 1998; Al-Matari et al., 2012), this study used the total asset as a proxy of firm size by using the natural logarithm of total assets. Firm size was used in this study to examine its likely effect on financial performances of Turkish firms**.**

4.3.3.2 Firm Age

Firm age is calculated as the each year minus establishment date of the company to determine how many years it had been incorporated before 2008, 2009, 2010, 2011, 2012, 2013 and 2014.

Table 4: Corporate Governance Variables (Control-Independent Variables)

Independent Variables	*Definition*	*Measurement*
-Control Variables		
FIRSIZ	*Firm Size*	*Natural logarithm of book value of firm's total asset*
FIAGE	*Firm Age*	*Years since establishment*

ROA=α+ β(1)*BOCOM+β(2)*BOIND+β(3)*BOSIZ+β(4)*CEODUO+β(5)* FIAGE+β(6)*FIRSIZ

ROE=α+ β (1)*BOCOM+β (2)*BOIND+β(3)*BOSIZ+β(4)*CEODUO+β (5)* FIAGE+β (6)*FIRSIZ

TOBIN'S Q=α+ β(1)*BOCOM+β (2)*BOIND+β (3)*BOSIZ+β(4)*CEODUO+β(5)* FIAGE+β(6)*FIRSIZ

5. DATA INTERPRETATION

The key purpose of this study is to find answers for six research hypotheses which are the followings;

H1: There is a negative relationship between the board size and financial performance
H2: There is a negative association between CEO/Chairman Duality and firm performance.
H3: There is a positive link between board composition and firm performance.
H4: There is positive link between the presence of board committees and firm performance.
H5: There is a negative association between firm size and firm performance
H6: There is negative relationship between firm age and firm performance

In order to answer the research hypotheses, the study starts with descriptive analysis to show mean, mode, median, maximum and minimum values of variables to describe them separately. Secondly, pairwise correlation was conducted to show relationship among independent variables and test the multicollinearity problem in sampled data. In this study panel data was used with 90 companies and the time period 2008-2014, in this way same cross sectional unit was treated over time with 630 observations. Using the panel data provides combining time series and cross sectional data and eliminate high collinearity variables (Baltagi&Giles,1998; Gujarati, 2003). Then the ordinary least square was employed to establish

if corporate governance indicators have an effect on company financial performance. In addition, white correlated standard errors is used to extinguish heteroscedasticity problem in data set. This study's analyses were run with the help of Excel and EViews programmes.

5.1 Descriptive Analysis

The analysis begins with examining the basic features of the data using descriptive statistics. Table 5 represents 7 years summary of mean, median, maximum values, minimum values, standard deviation, skewness, kurtosis, Jarque-Bera probability of dependent, control, independent variables and dependent variables from 2008 to 2014.

Table 5: Descriptive Analysis

Sütun1	BOCOM	BOIND	BOSIZ	CEODUO	FIAGE	FIRSIZ	ROA	ROE	TOBIN_S_Q
Mean	2.268761	0.642207	7.998255	0.214660	44.41187	8.596229	0.068425	0.120096	1.240367
Median	2.000000	0.666667	7.000000	0.000000	43.00000	8.770587	0.050870	0.103470	0.828159
Maximum	5.000000	1.000000	16.00000	1.000000	88.00000	10.50346	3.081646	3.596965	25.01065
Minimum	0.000000	0.000000	3.000000	0.000000	11.00000	5.854715	-1.281	-6.357	0.025769
Std. Dev.	1.090816	0.249668	2.290524	0.410945	17.20439	0.963177	0.184432	0.420155	2.242832
Skewness	0.374928	-0.526174	0.806760	1.389917	0.295544	-0.797648	8.656615	-3.819	7.063045
Kurtosis	2.678095	2.380004	3.469537	2.931870	2.603573	3.120322	142.2993	118.9355	61.92041
Jarque-Bera	15.89853	35.61749	67.42088	184.6044	12.09365	61.10681	470433.9	322298.1	87648.96
Probability	0.000353	0.000000	0.000000	0.000000	0.002365	0.000000	0.000000	0.000000	0.000000

Firstly, the average of board committees is 2,25 with the minimum of zero and a maximum of 5. As you can see on the table 1 above CMG indicates that number of board committees should be at least three in 2014 revision, should be two in 2011 revision and there is no expression about requirement of board committees in 2008 revision. Hence the mean shows that there is a weak presence of compliance with CMB's Communique according to 2014 revision *(See Table 1; 4.5.1).*

The average of ceo duality is 0,21 with the maximum of 1 and minimum of 0. This finding shows that most of sampled companies have different people that hold ceo and chairman

positions in the company. At the same time the mean shows that most of companies adapt to the CMB's recommendations (*See Table 1; 4.2.5 and 4.2.6*)

Board independence has an average of 0,639, ranging from 0 to 1. Overall this result implies that most of board of directors in sampled firms consist of non-executive members. Since the mean is larger than 0,5 that is non-executive members over total board members, it is understood that sampled companies complied with CMB's recommendations about the board independence principle (*See Table 1; 4.3.2*.).

The average of board size is 7,97 with the minimum of 3 and a maximum of 16. Jensen(1983) and Lipton&Lorsh(1992) recommend the board size has optimal number of maximum of seven to eight members and with the maximum number of 10 to be effective. Mean of sample companies' board size support their suggestion with the number of 7,97. But the maximum number of board size from the descriptive statistics is 16 so this seems much higher than their findings. Also it is seen that sampled firms complied with CMB's communique because mean of 7,97 is bigger than 5 that is suggested by CMB (*See Table 1; 4.3.1*)

As control variable, the mean of firm age is 44, ranging from 11 to 88. This result shows that data from sample companies vary in different ages which may make the result more accurate.

Firm size is a control variable which has a range 5,85 and 10,5 with the mean of 8,59. It is possible to deduce that sampled companies vary in different sizes hence we get a reliable conclusion.

The mean of ROA is 6,5% and the mean of ROE is 11%. Both financial performance measures have positive numbers implying the majority of sampled firms have created shareholder value over 2008-2014 period. However there is wide deviation between minimum and maximum values of ROA and ROE. In addition, since ROA and ROE have negative minimum values there might be a sign of economic downturn. While this paper was being analysed, it is obviously seen that Turkey had experienced with global crisis during 2008 and 2009 through low ROA and ROE values. Also, TUSIAD clarifies this economic downturn in its 2009 Economic Report.

''The continuous growth of Turkey that lasted for seven years, decreased in 2009 with only 4.7% growth following the global crisis. All sectors suffered shrinkage except the financial sector. Private sector had a problem with financial resources as well as loss of production. The growing intuitive approach of the banks on risk and narrowing of foreign loans had a negative

impact on domestic credit volume. Therefore the slowing flow of credit towards real sector caused a financial distress.''

Moreover, mean of Tobin's Q is 1,21 which is higher than 1 so firms have created value for shareholders. Tobin's Q of 1,21 might mean that market value of equity is higher than total asset carrying value. Here the remarkable thing is maximum value of Tobin's Q which is 25 because this measurement is based on the market value of firm and price of shares might change incredibly.

5.2 Pairwise Correlation Between Independent Variables

This analysis was used to test the study to determine whether there is a multicollinearity problem or not by understanding the relationship among all independent variables. This problem occurs when two or more independent variables are highly correlated with each other and this might affect the regression in a negative way (Hair et al., 2010). According to Gujarati (2003) high correlation among independent variables might make the regression unreliable. Table 6 exhibits a correlation matrix, which explains the correlation of independent variables related to this research.

Table 6: Pairwise Correlation

	BOSIZ	BOIND	BOCOM	CEODUA	FIRSIZ	FIAGE
BOSIZ	**1**					
BOIND	**0,126593**	**1**				
BOCOM	**0,357087**	**0,084932**	**1**			
CEODUA	**-0,19821**	**-0,07766**	**-0,15553**	**1**		
FIRSIZ	**0,125616**	**0,204829**	**0,0707513**	**0,06395439**	**1**	
FIAGE	**0,120005**	**0,049487**	**0,059979**	**-0,0229767**	**0,290214**	**1**

As shown above, board size has a positive relationship with board independence (0,127), board committees (0,357), firm size (0,126) and firm age (0,12) but is negatively correlated with ceo duality (-0,198). While board independence is positively correlated with board

committees (0,085), firm size (0,205) and firm age (0,049), board independence is negatively correlated with ceo duality (-0,077). Board committees has negative relation with ceo duality (-0,15,) but it is positively related with firm size (0,07) and firm age (0,059). Although firm size has a positive association with firm age (0,29), ceo duality has a negative relationship with firm age (-0,023) but positive association with firm size (0,06).

The highest correlation is between board size and board committees. This positive correlation was expected since as the number of board of directors increase members that might be nominated to board committees increase as well. In other words, more board committees can be constituted with different board members.

Firm age and firm size have the second highest correlation among all independent variables with the number of 0,29. It is also an expected result because older companies are able to have more total assets over the period.

The lowest correlation is seen between firm age and ceo duality in a negative way. This outcome means that when firm age increases, possibility of ceo and chairman that hold same position in the company decreases. Because a certain portion of the aged companies are run by families in Turkey, we expected that a person from family hold same position.

Firm size has positive relationships with all independent variables but we expected that firm size and ceo duality to have negative relationship like the relationship between firm age and ceo duality but surprisingly test shows that they are positively correlated.

Overall the all outcomes are smaller than 0,80 which is the critical level to determine the multicollinearity problem (Hair et al., 2010) hence ,the findings show there is no multicollinearity problem for this analysis.

5.3 Regression Analysis

5.3.1 Relationship between Corporate Governance Variables and Return On Asset

When this analysis is made, at first the Hausman test was run to test the hypothesis that;

Ho: Random effect is appropriate

H1: Fixed effect is appropriate

According to the Hausman test, p-value is 0,043 which is smaller than 0,05 (critical value to reject or not) so Ho which is null hypothesis was rejected *(See Appendix 1).* Then by the use of fixed effect OLS *(See Appendix 2)* test the hypothesis that;

Ho: All dummy variables are zero (Pooled regression model)

H1: All dummy variables are not zero (Fixed effect model)

Wald test was run on the regression analysis which is at *Appendix 3*. According to Wald test, t-statistic is 0,052 which is higher than 0,05 (critical value) so Ho can not be rejected. Hence, the most appropriate method for ROA is pooled regression model *(Appendix 4)*. This model was run with White cross section to remove heteroscedasticity *(Appendix 5)*.

Table 7: Ordinary Least Square (ROA)

Dependent Variable: ROA
Method: Panel Least Squares
Date: 05/18/16 Time: 17:03
Sample: 2008 2014
Periods included: 7
Cross-sections included: 89
Total panel (unbalanced) observations: 577
White cross-section standard errors & covariance (d.f. corrected)
WARNING: estimated coefficient covariance matrix is of reduced rank

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.235939	0.060063	3.928208	0.0001
BOCOM	0.015277	0.007313	2.089085	0.0371
BOIND	0.050469	0.010005	5.044507	0.0000
BOSIZ	-0.005777	0.003677	-1.571142	0.1167
CEODUO	-0.036538	0.006221	-5.873568	0.0000
FIAGE	-0.000113	0.000176	-0.639082	0.5230
FIRSIZ	-0.020460	0.006641	-3.080937	0.0022

R-squared	0.032239	Mean dependent var	0.067881
Adjusted R-squared	0.022052	S.D. dependent var	0.183973
S.E. of regression	0.181934	Akaike info criterion	-0.558292
Sum squared resid	18.86692	Schwarz criterion	-0.505424
Log likelihood	168.0672	Hannan-Quinn criter.	-0.537675
F-statistic	3.164748	Durbin-Watson stat	1.216066
Prob(F-statistic)	0.004618		

P-Values<0,05 ----> significant P-Values>0,05 ----> insignificant
P-Values<0,01 ---> statistically significant

Table 7 shows the regression results for ROA. The first column shows the coefficient of all independent variables which indicates the magnitude and direction of relation between financial performance measure (ROA) and independent variables. Column two represents their standard errors and column three exhibits the t-value which states the significance of the regression outcomes. The R-squared represents the degree or percentage up to which the sample describes the dependent variables and F statistics tells us the overall significance of the model.

When it comes to the comments from analysis, the findings from OLS regression clearly shows mixed results between independent variables and ROA. Firstly, the regression outcomes show that board committees and board independence are positively related with financial performance measured by ROA so increase in number of board committees and board independence leads to 1,5% and 5% increase in ROA . However board size, ceo duality, firm age and firm size are inversely related with ROA by 0,57%, 3,65%, 0,01% and 2% respectively.

Except firm age and board size, all independent variables have significant impact on ROA according to their p-values. Especially board independence, ceo duality and firm size have statistically significant impact on ROA . *(See Table 10 for more information about rejection or not rejection of hypothesis).* R-squared of 0,022 indicates that independent variables explain 2,2% of the systematic variation in the dependent variable(ROA). In addition, the Durbin-Watson statistic is 1,22 which is close to two which means there is no autocorrelation problem in the sampled data.

A general evaluation from this analysis is that F statistics and its p-values are 3,16 and 0,0046 which is smaller than the critical point of 0,05 hence corporate governance variables are found significantly related with ROA.

5.3.2 Relationship between Corporate Governance Variables and ROE

When this analysis is made, same steps were used with ROA and the most appropriate method was found pooled regression model for ROE. (S*ee Appendices 6,7,8,9,10*)

Table 8: Ordinary Least Square (ROE)

Dependent Variable: ROE
Method: Panel Least Squares
Date: 05/18/16 Time: 16:54
Sample: 2008 2014
Periods included: 7
Cross-sections included: 89
Total panel (unbalanced) observations: 576
White cross-section standard errors & covariance (d.f. corrected)
WARNING: estimated coefficient covariance matrix is of reduced rank

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.285181	0.145925	1.954298	0.0512
BOCOM	0.013262	0.010860	1.221258	0.2225
BOIND	0.199892	0.099271	2.013601	0.0445
BOSIZ	0.002139	0.002893	0.739502	0.4599
CEODUO	-0.045885	0.024081	-1.905424	0.0572
FIAGE	-0.000199	0.000625	-0.317925	0.7507
FIRSIZ	-0.037404	0.017167	-2.178790	0.0298

R-squared	0.023921	Mean dependent var	0.120218
Adjusted R-squared	0.013628	S.D. dependent var	0.419283
S.E. of regression	0.416416	Akaike info criterion	1.097815
Sum squared resid	98.66599	Schwarz criterion	1.150754
Log likelihood	-309.1708	Hannan-Quinn criter.	1.118461
F-statistic	2.324074	Durbin-Watson stat	1.786656
Prob(F-statistic)	0.031658		

Board committees, board independence and board size have positive impact on financial measurement (ROE) .On the other hand ceo duality, firm size and firm age have negative effect on ROE by 4,58%, 0,019% and 3,7% respectively.

According to their p-values, board independence and firm size explain ROE significantly while board committees, board size, ceo duality and firm age have an insignificant effect on ROE *(See Table 10 for more information about rejection or confirmation of hypothesis)*. Adjusted R-squared of this model is 0,0136 which means that the independent variables jointly explain approximately 1,4% of the systematic variation in the dependent variable (ROE). Moreover, the Durbin-Watson statistic is 1,786 so sampled data do not present first order serial correlation problem. Overall, F statistic and its p-value of this model are 2,32 and 0,0316. This means that corporate governance variables have a significant effect on ROE.

5.3.3 Relationships between Corporate Governance Variables and Tobin's Q

For Tobin's Q same steps were followed but when Hausman test was run for Tobin's Q the p-value (0.0963) was bigger than critical value (0,05) so unlike ROA and ROE random effect was found more appropriate model for Tobin's Q *(See Appendices 11,12, 13).*

Table 9: Ordinary Least Square (Tobin's Q)

Dependent Variable: TOBIN_S_Q
Method: Panel EGLS (Cross-section random effects)
Date: 05/18/16 Time: 16:57
Sample: 2008 2014
Periods included: 7
Cross-sections included: 89
Total panel (unbalanced) observations: 574
Swamy and Arora estimator of component variances
White cross-section standard errors & covariance (d.f. corrected)
WARNING: estimated coefficient covariance matrix is of reduced rank

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	6.488890	1.644130	3.946701	0.0001
BOCOM	0.045417	0.042604	1.066025	0.2869
BOIND	0.580753	0.225139	2.579538	0.0101
BOSIZ	0.036824	0.054599	0.674453	0.5003

CEODUO	-0.342800	0.056346	-6.083830	0.0000
FIAGE	-0.000800	0.005431	-0.147313	0.8829
FIRSIZ	-0.686639	0.191595	-3.583804	0.0004

Effects Specification		
	S.D.	Rho
Cross-section random	1.392240	0.3998
Idiosyncratic random	1.705912	0.6002

Weighted Statistics			
R-squared	0.044214	Mean dependent var	0.533329
Adjusted R-squared	0.034100	S.D. dependent var	1.743861
S.E. of regression	1.714126	Sum squared resid	1665.975
F-statistic	4.371539	Durbin-Watson stat	1.537074
Prob(F-statistic)	0.000250		

Unweighted Statistics			
R-squared	0.051591	Mean dependent var	1.239949
Sum squared resid	2728.938	Durbin-Watson stat	0.938360

Board committees, board independence and board size have positive associations with Tobin's Q. On the other hand CEO duality, firm age and firm size are inversely correlated with Tobin's Q. In the analysis, the effects of board committees, board size and firm age are insignificant on Tobin's Q however board independence, ceo duality and firm size are significant on Tobin's Q *(See Table 10 for more information about rejection or not rejection of hypothesis)*. In order of importance, the regression outcomes also indicate that the most significant relationship is between ceo duality and Tobin's Q with beta of -0,343 and p value of 0,000. According to analysis, adjusted R-squared (0,034) indicates approximately 3,4% of the variability in Tobin's Q. In addition, durbin watson test resulted with 1,53 which is close to 2 hence the sampled data do not present any presence of autocorrelation problem. F statistics and its p-value which show overall significance level are 4,37 and 0,00026 which is smaller than 0,01. This means that overall corporate governance variables have statistically significant impact on Tobin's Q.

In summary, these three tables try to explain the effect of corporate governance variables on financial measurements which are ROA, ROE and Tobin's Q. Although Tobin's Q is strongly influenced by unstable market factors, such as investor behaviour, and market forecasts the outcomes show that Tobin's Q is the best measurement for exploring impacts of corporate governance variables on financial variables . This is because, it has the best adjusted R-squared which gives the percentage of variation explained by only corporate governance variables that in reality affect the financial measurements.

Table 10: Summary of Multiple Regression Analysis Interpretation

Financial Measurement	Independent Variable	Relationship Direction	Significant Value	Result on Hypothesis
ROA	BOSIZ	Negative	0,1167	Don't reject H1
ROE	BOSIZ	Positive	0,4599	Don't reject H1
TOBIN'S Q	BOSIZ	Positive	0,5003	Don't reject H1
ROA	CEODUA	Negative	0,0000**	Reject H2
ROE	CEODUA	Negative	0,0572	Don't reject H2
TOBIN'S Q	CEODUA	Negative	0,0000**	Reject H2
ROA	BOIND	Positive	0,0000**	Reject H3
ROE	BOIND	Positive	0,0445*	Reject H3
TOBIN'S Q	BOIND	Positive	0,0101*	Reject H3
ROA	BOCOM	Positive	0,0371*	Reject H4
ROE	BOCOM	Positive	0,2225	Don't reject H4
TOBIN'S Q	BOCOM	Positive	0,2869	Don't reject H4
ROA	FIRSIZ	Negative	0,0022**	Reject H5
ROE	FIRSIZ	Negative	0,0298*	Reject H5
TOBIN'S Q	FIRSIZ	Negative	0,0004**	Reject H5
ROA	FIAGE	Negative	0,5230	Don't reject H6
ROE	FIAGE	Negative	0,7507	Don't reject H6
TOBIN'S Q	FIAGE	Negative	0,8829	Don't reject H6

*: Significant impact
**: Statistically significant impact

5.4 Discussion

Firstly, we found that when the number of board committees increases ROA, ROE and Tobin's Q also increase. Increasing number of committee members, which is an important variable for corporate governance, means increasing disclosure of information, better protection of rights and better supervision of decision so increasing number of committee members improve the quality of good corporate governance. However, these relationships are not significant for ROE and Tobin's Q. Only the effect on ROA was found significant.

When we compare the results with previous studies, there are lots of findings that support the presence of various board committees to increase firm performance. For example; McMullen (1996) and John&Senbet (1998) stated that increasing number of board committees ensure companies to have more powerful internal audit so that their financial distress can be reduced. Also, according to Klein (1998), there is a positive association between remuneration committee and firm performance but it is not significant. The reason behind insignificance may that the members of these committees are not independent enough since not only having different board committees is enough but also firms should give importance to their independence level. As suggested by Lam et al. (2012), in general, the effectivity of the board committees depend on the independence of their compositions. Since most of sampled Turkish companies do not disclose their independence level of board committees in their annual reports, we cannot confidently say that we found an insignificant relationship between the variables due to the lack of independent members. Still, it may be the reason or the reason might be the ineffectiveness of the risk management committee that CMB recommended firstly in 2014 which Turkish companies must have at least 3 committees including Auditing and Corporate Governance and Early Detection of Risk Committees. In 2011 they required to have at least 2 committees including Auditing and Corporate Governance Committees*(See Table 1)*. In terms of carrying out this advice, while sampled data was being analyzed, it was clearly seen that most observations comply with CMB's recommendations. Hence, expected that after 2011 sampled companies would show better performance with the new committee requirements but having new committees could not enhance their performance significantly regarding ROE and Tobin's Q. However, this finding is coherent with Tufano et al. (1996) stating that risk management committee is more associated with risk aversion instead of creation of shareholder value.

Secondly, the study shows that there is a positive and significant relationship between board independence (board composition) and firm performance in terms of ROA, ROE and Tobin's

Q. The non executive director role on the board is effectively monitoring and controlling firm activities regarding reducing opportunistic managerial behaviors and expropriation of firm resources. That is why the board independence is an important tool for corporate governance and firm performance. This result is not surprising (ROA: β=0.05, p=0,00; ROE: β=0,199, P=0,044; Tobin's Q: β=0,58, p=0,01) because Turkish sampled companies comply with CMB's recommendations. Also ,it was found that 424 observations are more than 0,5 which CMB suggests the smallest ratio for the number of non executive members over total members to be effective (See Table 11). This good implementation of corporate governance may eliminate the agency problem by supporting the stakeholders' interest. The reason behind the compliance with CMB's advices might be that family owned companies companies are more likely to have large amount of non executive members in their board in order to have global reputation and enter international new markets. In other words, these kind of companies and other companies as well give importance to board composition because they may have profitable opportunities with the improvement of their corporate governance structure. A number of researches support our finding such as Simon&Enoghayinagbon (2014), Abdullah (2004), Mehran (1995), Weisbach (1988). They found a positive and significant correlation between board independence and firm financial performance. However Garg (2007) stated that board independence does not guarantee the development of firms' financial performance. Moreover, Hermalin&Weisbach (1991) and Johari, Saleh, Jaafar&Hassan (2008) found that there is no association between board independence and financial performance while the study conducted by Roodposhti (2010) in Iran and Corner et al. (2007) in USA found that increasing the proportion of non executive members can decrease earning managements.

Table 11 : Distribution of Non-Executive Members of Turkish Sampled Companies for year 2008-2014

	Number of Observations	*Percentages of Observations*
Board Independence<0,5	*175*	*29%*
Board Independence>0,5	*424*	*71%*
Total	*599*	*100%*

(In this study there are totally 630 observations.Because of 31 missing observations, for board independence there are 599 observations. Without any separation among years, the analysis was run on total observations.)

In terms of ceo duality, the study results showcase that ceo duality is negatively associated with firm performance regarding the whole measurement variables. It is an important tool for

monitoring and protecting the rights for stakeholders. However negative impact of ceo duality can be explained significantly by ROA and Tobin's Q but not by ROE. This result was expected because the majority of previous studies found a negative relationship. It is also understood that sampled companies complied with CMB's advice because for 78% of all observations ceo and chairman hold different positions in the companies (See Table 12). Holding different positions for CEO and chairman provide separation of roles and duties of the management and board of directors. There are several past studies(Dar et al., 2011; Syriopoulos et al., 2012 and Fama&Jensen, 1983) that also support our result. In addition, Yermack (1996) found that firms that have different CEOs and chairman are more able to create value and according to Koufopoulos et al. (2010), since a ceo has an influential power on companies strategic decision, a ceo that has a dual role, affects board decisions and firm performance in a negative way. Unlike Koufopoulos et al. (2010) and Yermack (1996), Simpson&Gleason (1999) found a positive association between variables. This is because they stated that the dual role eliminates possible conflict between CEO and chairman and the confusion of two representatives from the perspective of stakeholders.

Table 12: Distribution of Ceo Duality of Turkish Sampled Companies for year 2008-2014

	Number of Observations	*Percentages of Observations*
If the Chairman and CEO are same	*132*	*21%*
If the Chairman and CEO are not same	*474*	*79%*
Total	*606*	*100%*

(In this study there are totally 630 observations. Because of 24 missing observations ,for ceo duality there are 606 observations. Without any separation among years, the analysis was run on total observations.)

Fourthly, this study showcases that board size has insignificant effect on all measurements but its directions are mixed for different financial variables. While board size is positively correlated with ROE and Tobin's Q, it is negatively associated with ROA. The result from regression analysis was not expected because sampled companies complied CMB's advice. It is found that 94% of all observations that present board size are bigger than 5 that was set up as critical size for board by CMB. It is a very surprising result for ROA since most companies comply with CMB's recommendations. (See Table 13).

Increasing board size might have two possible outcomes on financial measurement. Increasing board size can cause either the diversification of present ideas or a clash of ideas

and poorer connection among members. So the reason for having an insignificant relation for ROA, ROE and Tobin's Q and the reason of having negative relation for ROA might be less diversity, clash of ideas or poorer connection. Concurring with this study, Tze et al. (2015) also found that there is a positive relationship between board size and financial performance for Malaysian oil and gas companies like Simon et al. (2014), Mohamed (2009). However Connelly&Limpaphayom (2004) could not find any relationship between board size and financial performance.

Table 13 : Distribution Board Size of Turkish Sampled Companies for year 2008-2014

	Number of Observations	*Percentages of Observations*
Board Size<5	*65*	*10%*
Board Size>5	*549*	*90%*
Total	*614*	*100%*

(In this study there are totally 630 observations. Due to 16 missing observations ,for board size there are 614 observations. Without any separation among years, the analysis was run on total observations.)

The other implication from this study is that firm size is negatively and significantly correlated with all financial measurements so financial measurements can be explained by firm size variable. These findings are supported with several previous researches (Nenova, 2003; Garen, 1994). They state that larger companies need more supervision which will lead to extra costs for firms. Agrawal&Knoeber (1996) handle this subject with another perspective. When company size increases, management might lose its control on decision-making and this will lead to less efficiency for firms. Also Jensen and Meckling (1976) represent that large firms might likely cause an agency problem which would make the agency cost increase. However some studies (Black et al., 2006; Serrasqueiro&Nunes, 2008; Short&Keasey, 1999) show that there is a positive relationship between firm size and financial performance.

Finally, This study found that firm age is negatively correlated with all financial performance variables. This result shows that younger firms are better about fitting in the business environment and catching growth opportunities and our findings are in line with Lipczinsky and Wilson (2001) and Black et al. (2006) but not coherent with Claessens et al. (2002), Evans (1987) and Boone et al. (2007).

6.CONCLUSION

This paper analyzed the effect of corporate governance among 90 Turkish listed companies between 2008 and 2014. In order to measure corporate governance effects, six variables which are board size, board composition (independence), board committees, ceo duality, firm size (control variable) and firm age (control variable) were chosen. This is because, comparing the same independent variables with previous studies was aimed and it was hoped that these variables would have influence on firm performance. On the other hand ROA, ROE and Tobin's Q were selected as the tools to measure firm financial performance.

The aim of this study was to explore whether there was an association between corporate governance variables and firm performance of Turkish listed companies or not. The result of the study shows us good corporate governance practices significantly improve firm performances of sampled companies as we can understand from p-values that represent general significance of multiple regression analysis (P-values; ROA; 0.0046, ROE; 0.032, Tobin's Q; 0.0003). From these findings, firms should understand that improving good corporate governance applications is a significant tool to achieve financial sustainability, good financial performance and market value.

The study provides an important insight into the Turkish financial market and Turkish companies in terms of corporate governance practices. The findings in this study contribute to various areas; the most importantly, the result may be a good guideline for stakeholders and managers to understand whether companies have good corporate governance practices or not. Secondly, because corporate governance contributes to country's economy and company performance, government might give more importance to improve the corporate governance by making new regulations or recommendations. Finally, unlisted firms can improve its compliance level with good corporate governance practices like listed sampled firms that complied with CMB's recommendations and showed better performance.

When it comes to the recommendations concluded from the results, they might support company's notion to develop firm performance in the following ways. Unlike most of previous studies in this field, increasing board size improves firm market performance regarding to ROE and Tobin's Q so that Turkish firms should enlarge their number of board members to have a more diverse ideas in order to have better financial performance. Also, the effect of board independence was found the most significant variable since it is both related positively and significantly to all measurements. Therefore, good corporate governance practices decrease

possible corporate issues by the help of non-executive directors in the monitoring and auditing process. Thirdly, board committees have a positive association with all financial tools which means that companies with large numbers of board committees can generate more profit than companies with smaller number of committees. Finally, the positions of ceo and chairman of board of directors should be held by different executives according to the results from the analysis which remarks a negative correlation with all measurements to protect interests of shareholders and enhance the firm value. Implementation of these advices can enhance firm's financial performance and market value by attracting more capital and forming a beneficial business environment with a greater degree of investor confidence which might increase stakeholders' wealth and the country's financial stability. Significance of corporate governance will continue to increase in the following years as long as firms want to be in competition to survive in the constantly changing market.

In conclusion, in this paper we firstly aimed to show the significant effect of corporate governance practices on the company's financial performance and market value. Hereby, with this study we accomplished our goal. We hoped that this study will be beneficial for Turkish companies to improve good corporate governance practices which in turn increase their firm performance.

6.1 Future Directions For Research

This study might be extended in various aspects and some possible ways are identified below.

Firstly, in this paper the time period was taken as 2008-2014. In order to be more accurate, this time period might be extended to more than 8 years. When it comes to the other direction, number of independent variables can be increased to be able to include most of the corporate governance indicators. Thirdly, since this study was concentrated only on Turkey, future research may include more than one country that is called as both developing and developed country like Turkey. By including more than one country, corporate governance practices and impacts of these countries can be displayed comparatively. Another recommendation for future research could be using primary data to have more reliable results. Lastly, in this paper, 90 companies from BIST Indexes were used as sampled data however future studies may make the analysis by using all companies in BIST indices to give a more reliable perspective and generalize the findings. Another possibility to generalize the results could be using companies

from all sizes or all cities in Turkey. Because BIST Indices include large companies and large companies are generally located in big cities, companies which are run in small cities could not be analyzed. Hence, using various companies from different parts of Turkey would create a more accurate outcome to understand general perspective of corporate governance practices on Turkish firms.

REFERENCES

Abdullah, R., 2012, Oil and Gas Industry: Opportunities and Challenges ahead, Malaysia Oil gas

Abdullah, S.N., 2004, Board Composition, Ceo Duality and Performance Among Malaysian Listed Companies, Corporate Governance, 4(4): 47-61

Adams, R., & Mehran, H., 2003, Is Corporate Governance Different for Bank Holding Companies? Economic Policy Review, 9, 123-142.

Adewale, Muritala Taiwo; Rahmon, Tella Adeniran, 2014, Does Corporate Social Responsibility Improve an Organization's Financial Performance? - Evidence from Nigerian Banking Sector, IUP Journal of Corporate Governance Vol. 13, No. 4

Adjaoud, F., D. Zeghal, and S. Andaleeb, 2007, The effect of board quality on performance: A study of Canadian firms, Corporate Governance: An International Review 15, 623–635.

Agrawal, Anup and Charles R. Knoeber, 1996, Firm Performance and Mechanisms to Control Agency Problems Between Managers and Shareholders, Journal of Financial and Quantitative Analysis 31, 377-397.

Al-Matari, 2014, Asian Journal of Finance & Accounting, Vol. 6, No. 1

Ammar Ali Gull, Asif Saeed and Ammar Abid, 2013, African Journal of Business Management

Andrei Shleifer, and Robert Vishny, 2000, Investor Protection and Corporate Governance, Journal of Financial Economics 58 (1-2): 3-27.

Arif Saldanlı, 2012, Kurumsal Yönetim Endeks Performansının Analizi, Ekonomik ve Sosyal Araştırmalar Dergisi, Cilt:8, Yıl:8, Özel Sayı, 8, 137-154

Bairathi, V., 2009, Corporate governance: A suggestive code. International Research Journal, 11(6), 753-754.

Baltagi, B. H, In A. Ullah and D. E. A. Giles 1998. Specification Testing For Panel Data Models, Handbook of Applied Economic Statistics.

Bauer, Guenster and Otten, 2004, 'Empirical Evidence on Corporate Governance in Europe: The Effect on Stock Returns, Firm Value and Performance', in Journal of Asset Management, Vol. 5, No. 2, pp. 91-104.

Baydoun, N, Maguire, W, Ryan, N & Willett, R, 2013, Corporate governance in five Arabian Gulf countries, Managerial Auditing Journal, vol. 28, no. 1, pp. 7-22.

Benjamin Fung, 2014, The Demand and Need for Transparency and Disclosure in Corporate Governance, Universal Journal of Management 2(2): 72-80

Berle, A. A. and Means, G. C., 1932, The Modern Corporation and Private Property, Macmillan, NY

Bernard Black Hasung Jang Woochan Kim, 2005, Does Corporate Governance Predict Firms' Market Values? Evidence From Korea, ECGI Working Paper Series in Finance, Working Paper N°86/2005

Bhagat, Sanjai and Bernard Black, 2002, The non-correlation between board independence and long term firm performance, Journal of Corporation Law 27, 231-274

Bhimani, A., 2008, Making Corporate Governance Count: The Fusion of Ethics and Economic Rationality, Journal of Management and Governance, Vol. 12, No. 2, 135-147

Bhagat, S., & Black, B., 1998, Board Independence and Long-term Performance. University of Colorado.

Black, B. S., Love, I., & Rachinsky, A., 2006, Corporate Governance Indices and Firms' Market Values: Time Series Evidence from Russia. Emerging Markets Review, 7(4), 361-379.

Black, B. S., Jang, H., & Kim, W., 2006, Does Corporate Governance Predict Firms' Market Values? Evidence from Korea.Journal of Law, Economics, and Organization, 22(2), 366-413.

Bliss, M., 2011, Does CEO Duality Constrain Board Independence? Some Evidence from Audit Pricing", Accounting & Finance, 51(2): 361-380.
Bob Tricker Corporate Governance: An International Review, Volume 8, Issue 4, 289–296

Boone, A. L., Casares Field, L., Karpoff, J. M., & Raheja, C. G., 2007, The Determinants of Corporate Board Size and Composition: An Empirical Analysis. Journal of Financial Economics, 85(1), 66-101.

Bozec and Dia., 2007, Board Structure and Firm Technical Efficiency: Evidence from Canadian State-owned Enterprises European Journal of Operational Research, 177, 1734–1750

Brian K. Boyd, 1995, CEO duality and firm performance: A Contingency Model, Strategic Management Journal: Volume 16, Issue 4, 301–312

Brown, S. and Hillegeist, S. A., 2005, Disclosure Quality and Information Asymmetry, Working Paper, Emory University,

Burcu Adiloğlu, Bengü Vuran, 2012, The Relationship Between The Financial Ratios And Transparency Levels Of Financial Information Disclosures Within The Scope Of Corporate Governance: Evidence From Turkey The Journal of Applied Business Research –Volume 28, Number 4

Claessens, S. Djankov, J. Fan & L. Lang, 2003, When Does Corporate Diversification Matter to Productivity and Performance? Evidence from East Asia. Pacific-Basin Finance Journal, 11 (3), 365-392.

Claessens, S., Djankov, S., Fan, J. P., & Lang, L. H., 2002, Disentangling the Incentive and Entrenchment Effects of Large Shareholdings.The Journal of Finance, 57(6), 2741-2771.

Chan, K. C. and Li, J., 2008, Audit Committee and Firm Value: Evidence on Outside Top Executives as Expert Independent Directors, Corporate Governance: An International Review, 16(1):16-31.

Charles P. Himmelberg, R. Glenn Hubbard & Darius Palia, 1999, Understanding the determinants of managerial ownership and the link between ownership and performance, Journal of Financial Economics 53, 353-384

Chen, H.L., 2011, Does Board Independence Influence the Top Management Team? Evidence from Strategic Decisions Towards Internalisation, Corporate Governance: An International Review, 19(4): 334-350.

Cheng, S., 2008, Board Size and the Variability of Corporate Performance. Journal of Financial Economics, 87, 157-176

Clarkson, M. B. E., 1995, A Stakeholder Framework for Analyzing and Evaluating Corporate Social Performance, Academy of Management Review, Vol. 20, No. 1, 92-117

CMB, website: http://www.cmb.gov.tr/

Connelly, J. T. and Limpaphayom, P., 2004, Board Characteristics and Firm Performance: Evidence From The Life Insurance Industry in Thailand. Chulalongkorn Journal of Economics, 16(2): 101-124.

Cretu, R. F., 2012, Corporate Governance and Corporate Diversification Srategies, Revista de Management Comparat International, 13, 621-633.

Cuhruk, H., Özkan,A., 2004, Equity Research Turkey Special Report, Vol 9, s. 3-15

Daily, C. M., & Dalton, D. R., 1994, Bankruptcy and Corporate Governance: The Impact of Board Composition and Structure. Academy of Management Journal, 37(6), 1603-1617.

Daily, M.D., Dalton, D.R., & Cannella, A.A., 2003, Corporate Governance: Decades of Dialogue and Data, Academy of Management Review, 28(3), 371-382

Dalton, D.R., Hitt, M.A., Certo, S.T. and Dalton, C.M., 2008, The Fundamental Agency Problem and Its Mitigation: Independence, Equity, and the Market For Corporate Control, in J.P Walsh and A.P. Brief, Annals of the Academy Management, (1):1-64.

Dalton, D. R. and Dalton, C.M., 2011, Integration of Micro and Macro Studies in Governance Research: Ceo Duality, Board Composition, and Financial Performance", Journal of Management, 37(2): 404-411.

Damodar N. Gujarati, 2003, Basic Econometrics, McGraw Hill, 1002

Dar L.A, Nassem M.A. and Rehman R.U., 2011, Corporate Governance and Firm Performance a Case Study of Pakistan Oil and Gas Companies Listed in Karachi Stock Exchange, Global Journal of Management and Business Research, (1):8.

De Andres, P., Azofra, V. and Lopez, F., 2005, Corporate Boards in OECD Countries: Size, Composition, Functioning and Effectiveness", International Review, 13(2): 197-210.

Demsetz, H., & Lehn, K., 1985, The Structure of Corporate Ownership: Causes and Consequences. The Journal of Political Economy, 93(6), 1155-1177.

Donaldson, T. and Preston, L.E., 1995, The Stakeholder Theory of the Corporation: Concepts, Evidence and Implications, Academy of Management Review, Vol. 20, No. 1, 65-91

Dorothy A. McMullen, 1996, Audit Committee Performance: An Investigation of the Consequences With Audit Committees' Article in Auditing A Journal of Practice & Theory 15(1)

Eric Ernest Mang'unyi, 2011, Ownership Structure and Corporate Governance and Its Effects on Performance: A Case of Selected Banks in Kenya

Evans, D. S., 1987, The Relationship between Firm Growth, Size, and Age: Estimates for 100 Manufacturing Industries. The Journal of Industrial Economics, 567-581.

Fama, E. F., & Jensen, M. C., 1983, Agency Problems and Residual Claims, Journal of Law and Economics, 26(2), 327-349

Fama, E. F., & Jensen, M. C., 1983, Separation of Ownership and Control, Journal of Law and Economics, 26(2), 301-325

Fama, E. F., & Jensen, M. C., 1983, Agency Problems and Residual Claims, Journal of Law and Economics, XXVI, 327-347.

Feleaga, N., Feleaga L., Gragomir, V.D.,&Bigioi, A.FD, 2011, Corporate Governance In Emerging Economies: The Case For Romania, Theoretical and Applied Economics, 18(9), 5-16

FR Roodposhti, SAN Chashmi, 2010, The effect of board composition and ownership concentration on earnings management: evidence from Iran, World Academy of Science, Engineering and Technology 66, 165-171

Freeman, R. E., 1984, Strategic Management: A Stakeholder Approach, Pitman, London

Freeman, R.E., 1999, Response: Divergent Stakeholder Theory, Academy of Management Review, Vol. 24, No. 2, 233-23

Fülöp, M., 2014, Why do we need effective corporate governance? International Advances in Economic Research, 20, 227-228.

Garen, J. E., 1994, Executive Compensation and Principal-Agent Theory.Journal of Political Economy, 1175-1199.

Garrett, A. D., 2004, Themes and Variations: The Convergence of Corporate Governance Practices in Major World Markets. Denver Journal of International Law and Policy. 32,149.

Ghabayen, M., 2012, Board characteristics and firm performance: Case of Saudi Arabia. International Journal of Accounting and Financial Reporting, 2(2), 168-200.

Gürbüz, A. Osman, Ergincan, 2004, Kurumsal Yönetim: Türkiye'deki Durumu ve Geliştirilmesine Yönelik Öneriler, Literatür Yayıncılık, İstanbul.

Habbash, M., & Bajaher, M. S., 2014, An empirical analysis of the impact of board structure on the performance of large Saudi firms. The Business Review, Cambridge, 22(1), 152-158.

Hackman, J. R., 1990, Groups that Work. San Francisco, CA: Jossey-Bas.
Jensen, M.C. and Meckling, W. H. (1976) Theory of the Firm: Managerial Behaviour, Agency Costs and Ownership Structure, Journal of Financial Economics, 3(4): 305-360.

Hagat, S., D. C. Carey, and C. M. Elson, 1999, Director ownership, corporate performance, and management turnover, Business Lawyer 54, 885–919.

Helen Wei Hu, On Kit Tam, Monica Guo-Sze Tan, Firm Performance in China", Asia Pac Journal Management, 27:727-749.

Hermalin and Weisbach, 1991, Boards of Directors as an Endogenously Determined Institution: A Survey of the Economic Literature

Hossain, M., Prevost, A. K., & Rao, R. P., 2001, Corporate governance in New Zealand: The effect of the 1993 Companies Act on the relation between board composition and firm performance. Pacific-Basin Finance Journal, 9, 119–145.

Hutchinson and Gul, 2004,Investment opportunity set, corporate governance practices and firm performance, Journal of Corporate Finance 10, 595-614

Hyun-Han Shin, Rene M. Stulz, 2000, Firm Value, Risk, and Growth Opportunities, National Bureau of Economic Research, Working Paper 7808

Jackling and Johl, 2009, Board Structure and Firm Performance: Evidence from India's Top Companies, Corporate Governance: An International Review, 17 (4), 492–509

Jensen, M. C., & Meckling, W. H., 1976, Theory of the Firm: Managerial Behaviour, Agency Costs and Ownership Structure. Journal of Financial Economics, 3(4), 305-360.

John, K. & Senbet, L.W., 1998, Corporate Governance and Board Effectiveness, Journal of Banking & Finance, 22, 371-403

Johnson and Greening, 1999, The Effects of Corporate Governance And Institutional Ownership Types On Corporate Social Performance, Academy of Management Journal Vol 42 No:5 564-576

Joseph F. Hair , 2010, Multivariate Data Analysis (7.th edition)

Jun-Koo Kang&Rene M. Stulz, 1996, How Different Is Japanese Corporate Finance? An Investigation of the Information Content of New Security Issues, Review of Economic Studies, 9, 109-139
KAP, website: https://www.kap.gov.tr/en/home.aspx

Kee H Chung, Stephen W Pruitt, 1994, A simple Approximation Of Tobin's Q, Financial Management, 70-74

Kiel, G., & Nicholson, G., 2003, Board Composition and Corporate Performance: How the Australian experience informs contrasting theories of corporate governance. Corporate Governance: An International Review, 11(3), 189–205.

Klein, A., 1998, Firm performance and board committee structure 1, The Journal of Law and Economics , Vol. 41 No. 1, pp. 275-304.

Klein, A., 2002, Audit committee, board of director characteristics, and earnings management Journal of Accounting and Economics, 33, 375-400.

Koufopoulos, D., Lagoudis I., Theotokas, I. and Syriopoulos, T., 2010, Corporate Governance and Board Practices by Greek Shipping Management Companies, Corporate Governance: The International Journal of Business in Society, 10(3): 261-278.

Lam, T. Y. and Lee, S. K., 2012, Family ownership, Board Committees and Firm Performance: Evidence from Hong Kong, Corporate Governance. 12(3): 353-366.

Lam, T. Y. and Lee, S. K., 2012, Family ownership, Board Committees and Firm Performance : Evidence from Hong Kong, Corporate Governance. 12(3): 353-366.

La Porta, R., Lopez-De-Silanes, F. and Shleifer, A., 2000, Investor protection and corporate governance, Journal of Financial Economics, vol. 58, no. 1-2, pp. 3-27.

Lev, B.B. & S. Sunder, 1979, Methodological issues in the use of financial ratios. Journal of Accounting and Economics, 1(3), 187-210

Lipczynski, J. and J. Wilson, 2001, Industrial Organization: An Analysis of Competitive Markets. Prentice Hall, UK.

Lipton, M., & Lorsch, J., 1992, A Modest Proposal for Improved Corporate Governance. The Business Lawyer, 48(1), 59-77.

Loderer, C. and Peyer, U., 2002, Board Overlap, Seat Accumulation and Share Prices, European Financial Management, 8, 165-192.

Lopez, M. V., Garcia, A., & Rodriguez, L., 2007, Sustainable Development and Corporate Performance: A study based on the Dow Jones Sustainability Index. Journal of Business Ethics, 75(3), 285-300.

MacMillan, K., and Downing, S., 1999, Governance and performance: Goodwill hunting, Journal of General Management, 24(3): 11-21.

Mallin, C. A., 2004, Corporate Governance, Oxford University Press.

Marcus V. Braga-Alves and Kuldeep Shastri, 2011, Corporate Governance, Valuation and Performance: Evidence from a Voluntary Market Reform in Brazil, Financial Management, 40 139-157.

Mashayekhi, B., & Bazaz, M. S., 2008, Corporate Governance and Firm Performance in Iran, Journal of Contemporary Accounting & Economics, 4(2), 156–172.

Mcconomy, Bruce J; Bujaki, Merridee L., 2000, Corporate governance: enhancing shareholder value, CMA Management, 47.8. 10-13

Mehran, H., 1995, Executive Compensation Structure, Ownership, and Firm Performance.Journal of Financial Economics, 38(2), 163-184.
Michael S. Weisbach, 1988, Outside Directors And Ceo Turnover, Journal of Financial Economics, 20, 431-460

M. Muth and L. Donaldson, 1998, Stewardship Theory and Board Structure: A Contingency Approach, Corporate Governance, 6, 5–28

Mohamed .B., 2009, Board of Directors' Size and Performance in the Banking Industry, International Journal of Managerial Finance, 5(2), 201 – 221.

Monks and Minow, 1995, Corporate Governance

Musteen, Martina, Deepak K. Datta ve Pol Hermann, 2009, Ownership Structure and CEO Compensation: Implications for the Choice Foreign Market Entry Modes, Journal of International Business Studies, 40, 321-338.

Nandini Rajagopalan and Yan Zhang, 2009, Recurring Failures in Corporate Governance: A global disease?, Business Horizons, 52, 545—552

Nenova, T., 2003, The Value of Corporate Voting Rights and Control: A Cross-Country Analysis. Journal of Financial Economics, 68(3), 325-351.

N.H. Johari, N. Mohd Saleh, R. Jaffar, M.S. Hassan, 2008, The Influence of Board Independence Competency and Ownership on Earnings Management in Malaysia. International Journal of Economics and Business, 2 (2), 281–306

Padilla, A., 2002, "Can Agency Theory Justify The Regulation Of Insider Trading". The Quarterly Journal of Austrian Economics, Vol. 5, No. 1, 3-38

Pandya, H., 2011, Corporate governance structures and financial performance of selected Indian banks. Journal of Management & Public Policy, 2(2), 4-21.

Paul Gompers, Joy Ishii and Andrew Metrick, 2003, Corporate Governance And Equity Prices, The Quarterly Journal of Economics, 118 (1), 107-156.

Pearce, J. H. & Zahra, S. A., 1992, Board Composition from a Strategic Contingency Perspective. Journal of Management Studies, 29(4), 411-38.

Perfect, Steven B. And Kenneth W. Wiles, 1994, Alternative Construction of Tobin's Q. An empirical Comparison, Journal and Empirical Finance, 313-341

Ponnu, C. Y., 2008, Corporate Governance Structures and the Performance of Malaysian Public Listed Companies, International Review of Business Research Papers, 4(2), 217-230

Randall Morck, Andrei Shleifer & Robert W. Vıshny, 1988, Management Ownership And Market Valuation An Empirical Analysis, Journal of Financial Economics 20, 293-315

RC Anderson, SA Mansi, DM Reeb, 2004, Board Characteristics, Accounting Report Integrity, and the Cost of Debt, Journal of Accounting and Economics 37 (3), 315-342

RC Anderson, DM Reeb, 2004, Board Composition: Balancing Family Influence in S&P 500 Firms Administrative Science Quarterly 49 (2), 209-237

Reddy, K., Locke, S., Scrimgeour, F., & Gunasekarage, A., 2008, Corporate governance practices of small cap companies and their financial performance: An empirical study in New Zealand. International Journal of Business Governance and Ethics, 4, 51–78.

Roszaini Haniffa & Mohammad Hudaib, 2006, Corporate Governance Practices and Firm Performance: Evidence from Top 100 Public Listed Companies in Malaysia, Journal of Business Finance & Accounting Volume 33, Issue 7-8, 1034–1062

Saim Kılıç, 2008, Halka Açık Şirketlerin Kamuyu Aydınlatma, Şeffaflık ve Kurumsal Yönetim İlkeleri Açısından Mevzuata Uyum Kapasitelerinin Geliştirilmesi, Active, Yıl:10, Sayı:56.

Saim Kılıç, 2011, İMKB Kurumsal Yönetim Endeksine Dâhil Olan Şirketlerin Getiri Performanslarının Ölçülmesi, Finans Politik & Ekonomik Yorumlar Cilt: 48 Sayı: 552

Selahattin Yavuz, Suat Yıldırım, Bekir Elmas, 2015, Kurumsal Yönetim Endeksi ile Şirket Hisse Senedi Getiri İlişkisi: BIST'de Bir Uygulama, Erzincan Üniversitesi Sosyal Bilimler Enstitüsü Dergisi (ERZSOSDER), VIII-II: 73-82

Serrasqueiro, Z. S., & Nunes, P. M., 2008. Performance and Size: Empirical Evidence from Portuguese Smes. Small Business Economics, 31(2), 195-217.

Short, H., Keasey, K., Wright, M., & Hull, A., 1999,. Corporate Governance: from Accountability To Enterprise. Accounting and Business Research, 29(4), 337-352.

Shrader, C. B., V. B. Blackburn, and P. Iles, 1997, Women in management and firm financial value: An exploratory study, Journal of Managerial Issues 9, 355–372.

Simon Ayo Adekunle & Enoghayinagbon Maurice Aghedo Ph.D, Corporate Governance And Financial Performance of Selected Quoted Companies in Nigeria European Journal of Business and Management ISSN 2222-1905 (Paper) ISSN 2222-2839 (Online) Vol.6, No.9

Simpson, W. G. and Gleason, A. E., 1999, Board Structure, Ownership, and Financial Distress in Banking Firms, International Review of Economics and Finance, Vol. 8(3), 281-292.

SPK, 2005, Corporate Governance Principle, First published date July 2003 Revision: February 2005, www.cmb.gov.tr

SPK, 2005, Kurumsal Yönetim İlkeleri, İlk Yayınlanma Tarihi: Temmuz 2003 Düzeltilmiş İkinci Yayınlanma Tarihi: Şubat 2005, www.spk.gov.tr

Sundaram, A.K. and Inkpen, A.C., 2004, The Corporate Objective Revisited Organization Science, Vol. 15, No. 3, 350-36

Sulaiman, A., 2012, What has Changed? The Development of Corporate Governance in Malaysia, Journal of Risk Finance, 22.

Syriopoulos, T. and Tsatsaronis, M., 2012, Corporate Governance Mechanisms and Financial Performance: Ceo Duality in Shipping Firms, Eurasian Business Review, 2(1): 1-30.

TKYD, web site: http://www.tkyd.org/en/default.html

Tricker, R. I., 1994, International Corporate Governance: Text readings and Cases. Singapore: Prentice-Hall.

Tufano, P. 1996, Who Manages Risk? An Empirical Examination of Risk Management Practices in the Gold Mining Industry, Journal of finance, 51 (4), 1097-1137

Vo, D. H., & Nguyen, T. M., 2014, The impact of corporate governance on firm performance: Empirical study in Vietnam. International Journal of Economics and Finance, 6(6), 1-13

Wei, H., Tam, O. and Tan, M., 2010, Internal Governance Mechanisms And Firm Performance in China, Asia Pac J Manag, 27, 727–749

Weir, C., D. Laing, and P. J. McKnight, 2002, Internal and external governance mechanisms: Their impact on the performance of large UK public companies, Journal of Business Finance & Accounting 29, 579–611.

Wei, Q.H., 2012, Petronas to go ‘Full Throttle’ on O&G Projects
Yermack, D., 1997, Good Timing: CEO Stock Option Awards and Company News Announcements. Journal of Finance, 52(2), 449-476.

Yermack, D. (1996). Higher Market Valuation of Companies with a small Board of Directors. Journal of Financial Economics, 40, 185-211

Zabihollah Rezaee, 2009, Corporate Governance and Ethics The International Journal of Accounting, 2009, vol. 44, issue 3, 306-307

Zajac, E. J., and J. D. Westphal, 1996, Director reputation, CEO-Board power, and the dynamics of board interlocks, Administrative Science Quarterly 41, 507–529.

Zhu, Y. and Tian, G. G., 2009, CEO Pay-Performance and Board Independence: The Impact of Earnings Management in China.

APPENDIX

Appendix 1: Hausman Test (ROA)

Correlated Random Effects - Hausman Test
Equation: Untitled
Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	17.081535	5	0.0043

Cross-section random effects test comparisons:

Variable	Fixed	Random	Var(Diff.)	Prob.
BOCOM	0.029736	0.021245	0.000071	0.3149
BOIND	-0.053766	0.022052	0.001061	0.0199
BOSIZ	0.003760	-0.003143	0.000033	0.2260
FIAGE	-0.001738	0.000176	0.000029	0.7221
FIRSIZ	-0.098897	-0.033144	0.000360	0.0005

Appendix 2: Fixed Effect Ols (ROA)

Cross-section random effects test equation:
Dependent Variable: ROA
Method: Panel Least Squares
Date: 05/18/16 Time: 16:58
Sample: 2008 2014
Periods included: 7
Cross-sections included: 89
Total panel (unbalanced) observations: 582

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.929466	0.271396	3.424754	0.0007
BOCOM	0.029736	0.011096	2.679798	0.0076
BOIND	-0.053766	0.049094	-1.095165	0.2740
BOSIZ	0.003760	0.007313	0.514112	0.6074
FIAGE	-0.001738	0.005428	-0.320246	0.7489
FIRSIZ	-0.098897	0.022203	-4.454254	0.0000

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.377188	Mean dependent var	0.065913
Adjusted R-squared	0.258496	S.D. dependent var	0.185069
S.E. of regression	0.159364	Akaike info criterion	-0.688383
Sum squared resid	12.39368	Schwarz criterion	0.016854
Log likelihood	294.3195	Hannan-Quinn criter.	-0.413475
F-statistic	3.177880	Durbin-Watson stat	1.907031
Prob(F-statistic)	0.000000		

Dependent Variable: ROA
Method: Panel Least Squares
Date: 05/18/16 Time: 17:00
Sample: 2008 2014
Periods included: 7
Cross-sections included: 89
Total panel (unbalanced) observations: 577
ROA=C(1)+C(2)*BOCOM+C(3)*BOIND+C(4)*BOSIZ+C(5)*CEODUO
+C(6)*FIAGE+C(7)*FIRSIZ

	Coefficient	Std. Error	t-Statistic	Prob.
C(1)	0.235939	0.071238	3.311987	0.0010
C(2)	0.015277	0.007522	2.031052	0.0427
C(3)	0.050469	0.031142	1.620620	0.1057
C(4)	-0.005777	0.003635	-1.589117	0.1126
C(5)	-0.036538	0.019016	-1.921404	0.0552
C(6)	-0.000113	0.000462	-0.244065	0.8073
C(7)	-0.020460	0.008486	-2.410932	0.0162

R-squared	0.032239	Mean dependent var	0.067881
Adjusted R-squared	0.022052	S.D. dependent var	0.183973
S.E. of regression	0.181934	Akaike info criterion	-0.558292
Sum squared resid	18.86692	Schwarz criterion	-0.505424
Log likelihood	168.0672	Hannan-Quinn criter.	-0.537675
F-statistic	3.164748	Durbin-Watson stat	1.216066
Prob(F-statistic)	0.004618		

Appendix 3: Wald Test (ROA)

Wald Test:
Equation: Untitled

Test Statistic	Value	df	Probability
t-statistic	-1.921404	570	0.0552
F-statistic	3.691794	(1, 570)	0.0552
Chi-square	3.691794	1	0.0547

Null Hypothesis: C(5)=0
Null Hypothesis Summary:

Normalized Restriction (= 0)	Value	Std. Err.
C(5)	-0.036538	0.019016

Restrictions are linear in coefficients.

Appendix 4: Pooled Regression Analysis (ROA)

Dependent Variable: ROA
Method: Panel Least Squares
Date: 05/18/16 Time: 17:02
Sample: 2008 2014
Periods included: 7
Cross-sections included: 89
Total panel (unbalanced) observations: 577

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.235939	0.071238	3.311987	0.0010
BOCOM	0.015277	0.007522	2.031052	0.0427
BOIND	0.050469	0.031142	1.620620	0.1057
BOSIZ	-0.005777	0.003635	-1.589117	0.1126
CEODUO	-0.036538	0.019016	-1.921404	0.0552
FIAGE	-0.000113	0.000462	-0.244065	0.8073
FIRSIZ	-0.020460	0.008486	-2.410932	0.0162

R-squared	0.032239	Mean dependent var	0.067881
Adjusted R-squared	0.022052	S.D. dependent var	0.183973
S.E. of regression	0.181934	Akaike info criterion	-0.558292
Sum squared resid	18.86692	Schwarz criterion	-0.505424
Log likelihood	168.0672	Hannan-Quinn criter.	-0.537675
F-statistic	3.164748	Durbin-Watson stat	1.216066
Prob(F-statistic)	0.004618		

Appendix 5: Pooled Regression OLS with White Cross (ROA)

Dependent Variable: ROA
Method: Panel Least Squares
Date: 05/18/16 Time: 17:03
Sample: 2008 2014
Periods included: 7
Cross-sections included: 89
Total panel (unbalanced) observations: 577
White cross-section standard errors & covariance (d.f. corrected)
WARNING: estimated coefficient covariance matrix is of reduced rank

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.235939	0.060063	3.928208	0.0001
BOCOM	0.015277	0.007313	2.089085	0.0371
BOIND	0.050469	0.010005	5.044507	0.0000
BOSIZ	-0.005777	0.003677	-1.571142	0.1167
CEODUO	-0.036538	0.006221	-5.873568	0.0000
FIAGE	-0.000113	0.000176	-0.639082	0.5230
FIRSIZ	-0.020460	0.006641	-3.080937	0.0022

R-squared	0.032239	Mean dependent var	0.067881
Adjusted R-squared	0.022052	S.D. dependent var	0.183973
S.E. of regression	0.181934	Akaike info criterion	-0.558292
Sum squared resid	18.86692	Schwarz criterion	-0.505424
Log likelihood	168.0672	Hannan-Quinn criter.	-0.537675
F-statistic	3.164748	Durbin-Watson stat	1.216066
Prob(F-statistic)	0.004618		

Appendix 6: Hausman Test (ROE)

Correlated Random Effects - Hausman Test
Equation: Untitled
Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	12.522120	5	0.0283

Cross-section random effects test comparisons:

Variable	Fixed	Random	Var(Diff.)	Prob.
BOCOM	0.038802	0.015645	0.000435	0.2671
BOIND	0.168540	0.206735	0.007576	0.6608
BOSIZ	0.008373	0.002781	0.000218	0.7046
FIAGE	-0.011743	0.000132	0.000172	0.3647
FIRSIZ	-0.219185	-0.053706	0.002778	0.0017

Appendix 7: Fixed Effect OLS (ROE)

Cross-section random effects test equation:
Dependent Variable: ROE
Method: Panel Least Squares
Date: 05/18/16 Time: 16:47
Sample: 2008 2014
Periods included: 7
Cross-sections included: 89
Total panel (unbalanced) observations: 581

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	2.256401	0.671608	3.359699	0.0008
BOCOM	0.038802	0.026860	1.444608	0.1492
BOIND	0.168540	0.118868	1.417878	0.1569
BOSIZ	0.008373	0.017707	0.472852	0.6365
FIAGE	-0.011743	0.013174	-0.891372	0.3732
FIRSIZ	-0.219185	0.057985	-3.780009	0.0002

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.290072	Mean dependent var	0.116972
Adjusted R-squared	0.154501	S.D. dependent var	0.419372
S.E. of regression	0.385616	Akaike info criterion	1.079146
Sum squared resid	72.41692	Schwarz criterion	1.785319
Log likelihood	-219.4920	Hannan-Quinn criter.	1.354440
F-statistic	2.139628	Durbin-Watson stat	2.434179
Prob(F-statistic)	0.000000		

Dependent Variable: ROE
Method: Panel Least Squares
Date: 05/18/16 Time: 16:50
Sample: 2008 2014
Periods included: 7
Cross-sections included: 89
Total panel (unbalanced) observations: 576
ROE=C(1)+C(2)*BOCOM+C(3)*BOIND+C(4)*BOSIZ+C(5)*CEODUO
+C(6)*FIAGE+C(7)*FIRSIZ

	Coefficient	Std. Error	t-Statistic	Prob.
C(1)	0.285181	0.163104	1.748463	0.0809
C(2)	0.013262	0.017228	0.769818	0.4417
C(3)	0.199892	0.071284	2.804149	0.0052
C(4)	0.002139	0.008321	0.257073	0.7972
C(5)	-0.045885	0.043621	-1.051914	0.2933
C(6)	-0.000199	0.001061	-0.187294	0.8515
C(7)	-0.037404	0.019454	-1.922659	0.0550

R-squared	0.023921	Mean dependent var	0.120218
Adjusted R-squared	0.013628	S.D. dependent var	0.419283
S.E. of regression	0.416416	Akaike info criterion	1.097815
Sum squared resid	98.66599	Schwarz criterion	1.150754
Log likelihood	-309.1708	Hannan-Quinn criter.	1.118461
F-statistic	2.324074	Durbin-Watson stat	1.786656
Prob(F-statistic)	0.031658		

Appendix 8: Wald Test (ROE)

Wald Test:
Equation: Untitled

Test Statistic	Value	df	Probability
t-statistic	-1.051914	569	0.2933
F-statistic	1.106523	(1, 569)	0.2933
Chi-square	1.106523	1	0.2928

Null Hypothesis: C(5)=0
Null Hypothesis Summary:

Normalized Restriction (= 0)	Value	Std. Err.
C(5)	-0.045885	0.043621

Restrictions are linear in coefficients.

Appendix 9: Pooled Regression OLS (ROE)

Dependent Variable: ROE
Method: Panel Least Squares
Date: 05/18/16 Time: 16:53
Sample: 2008 2014
Periods included: 7
Cross-sections included: 89
Total panel (unbalanced) observations: 576

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.285181	0.163104	1.748463	0.0809
BOCOM	0.013262	0.017228	0.769818	0.4417
BOIND	0.199892	0.071284	2.804149	0.0052
BOSIZ	0.002139	0.008321	0.257073	0.7972
CEODUO	-0.045885	0.043621	-1.051914	0.2933
FIAGE	-0.000199	0.001061	-0.187294	0.8515
FIRSIZ	-0.037404	0.019454	-1.922659	0.0550

R-squared	0.023921	Mean dependent var	0.120218
Adjusted R-squared	0.013628	S.D. dependent var	0.419283
S.E. of regression	0.416416	Akaike info criterion	1.097815
Sum squared resid	98.66599	Schwarz criterion	1.150754
Log likelihood	-309.1708	Hannan-Quinn criter.	1.118461
F-statistic	2.324074	Durbin-Watson stat	1.786656
Prob(F-statistic)	0.031658		

Appendix 10: Pooled Regression OLS with White Cross (ROE)

Dependent Variable: ROE
Method: Panel Least Squares
Date: 05/18/16 Time: 16:54
Sample: 2008 2014
Periods included: 7
Cross-sections included: 89
Total panel (unbalanced) observations: 576
White cross-section standard errors & covariance (d.f. corrected)
WARNING: estimated coefficient covariance matrix is of reduced rank

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.285181	0.145925	1.954298	0.0512
BOCOM	0.013262	0.010860	1.221258	0.2225
BOIND	0.199892	0.099271	2.013601	0.0445
BOSIZ	0.002139	0.002893	0.739502	0.4599
CEODUO	-0.045885	0.024081	-1.905424	0.0572
FIAGE	-0.000199	0.000625	-0.317925	0.7507
FIRSIZ	-0.037404	0.017167	-2.178790	0.0298

R-squared	0.023921	Mean dependent var	0.120218
Adjusted R-squared	0.013628	S.D. dependent var	0.419283
S.E. of regression	0.416416	Akaike info criterion	1.097815
Sum squared resid	98.66599	Schwarz criterion	1.150754
Log likelihood	-309.1708	Hannan-Quinn criter.	1.118461
F-statistic	2.324074	Durbin-Watson stat	1.786656
Prob(F-statistic)	0.031658		

Appendix 11: Hausman Test (Tobin's Q)

Correlated Random Effects - Hausman Test
Equation: Untitled
Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	9.339868	5	0.0963

Cross-section random effects test comparisons:

Variable	Fixed	Random	Var(Diff.)	Prob.
BOCOM	-0.051978	0.069596	0.007730	0.1667
BOIND	0.341911	0.665748	0.087845	0.2746
BOSIZ	0.067297	0.043374	0.002919	0.6579
FIAGE	0.106518	-0.000602	0.003268	0.0610
FIRSIZ	-1.080060	-0.679523	0.034217	0.0304

Appendix 12: Random Effect (Tobin's Q)

Dependent Variable: TOBIN_S_Q
Method: Panel EGLS (Cross-section random effects)
Date: 05/18/16 Time: 16:56
Sample: 2008 2014
Periods included: 7
Cross-sections included: 89
Total panel (unbalanced) observations: 574
Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	6.488890	1.293331	5.017191	0.0000
BOCOM	0.045417	0.081169	0.559544	0.5760
BOIND	0.580753	0.441133	1.316506	0.1885
BOSIZ	0.036824	0.057383	0.641726	0.5213
CEODUO	-0.342800	0.277875	-1.233647	0.2178
FIAGE	-0.000800	0.009842	-0.081290	0.9352
FIRSIZ	-0.686639	0.152138	-4.513253	0.0000

Effects Specification	S.D.	Rho
Cross-section random	1.392240	0.3998
Idiosyncratic random	1.705912	0.6002

Weighted Statistics

R-squared	0.044214	Mean dependent var	0.533329
Adjusted R-squared	0.034100	S.D. dependent var	1.743861
S.E. of regression	1.714126	Sum squared resid	1665.975
F-statistic	4.371539	Durbin-Watson stat	1.537074
Prob(F-statistic)	0.000250		

Unweighted Statistics

R-squared	0.051591	Mean dependent var	1.239949
Sum squared resid	2728.938	Durbin-Watson stat	0.938360

Appendix 13: Random Effect with White Cross (Tobin's Q)

Dependent Variable: TOBIN_S_Q
Method: Panel EGLS (Cross-section random effects)
Date: 05/18/16 Time: 16:57
Sample: 2008 2014
Periods included: 7
Cross-sections included: 89
Total panel (unbalanced) observations: 574
Swamy and Arora estimator of component variances
White cross-section standard errors & covariance (d.f. corrected)
WARNING: estimated coefficient covariance matrix is of reduced rank

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	6.488890	1.644130	3.946701	0.0001
BOCOM	0.045417	0.042604	1.066025	0.2869
BOIND	0.580753	0.225139	2.579538	0.0101
BOSIZ	0.036824	0.054599	0.674453	0.5003
CEODUO	-0.342800	0.056346	-6.083830	0.0000
FIAGE	-0.000800	0.005431	-0.147313	0.8829
FIRSIZ	-0.686639	0.191595	-3.583804	0.0004

Effects Specification	S.D.	Rho
Cross-section random	1.392240	0.3998
Idiosyncratic random	1.705912	0.6002

Weighted Statistics

R-squared	0.044214	Mean dependent var	0.533329
Adjusted R-squared	0.034100	S.D. dependent var	1.743861
S.E. of regression	1.714126	Sum squared resid	1665.975
F-statistic	4.371539	Durbin-Watson stat	1.537074
Prob(F-statistic)	0.000250		

Unweighted Statistics

R-squared	0.051591	Mean dependent var	1.239949
Sum squared resid	2728.938	Durbin-Watson stat	0.938360

Appendix 14:

Sampled Companies					
ANADOLU EFES	PRYSMIAN KABLO	FORD OTOSAN	KARTONSAN	SODA SANAYİİ	YAZICILAR HOLDİNG
AFYON CIMENTO	BRISA	ASLAN ÇİMENTO	KOÇ HOLDİNG	TAT GIDA	VESTEL
AKENERJI	BORUSAN	GÖLTAŞ CEMENT	KONYA ÇİMENTO	TAV HAVALİMANLARI	ZORLU ENERJİ
AKSA ENERJI	COCA COLA	GOOD YEAR	KORDSA GLOBAL	TURKCELL	DESA DERİ
AKSA	ÇİMSA	PINAR ET VE UN	KOZA ALTIN	TÜRK HAVA YOLLARI	PINAR SU
ALARKO HOLDING	ÇELEBİ	GSD HOLDING	KARDEMİR	TEKFEN HOLDİNG	PINAR SÜT
ALCATEL LUCEN TELETAS	ALKIM KAGIT	GÜBRE FABRİKALARI	LOGO YAZILIM	TOFAŞ OTOMOBİL FABRİKALARI	İZOCAM
ALKIM ALKALI	DEVA HOLDING	ÇEMTAŞ	METRO HOLDİNG	TORUNLAR	TURCAS PETROL
SISE CAM	DOGUS OTOMATIV	IHLAS HOLDING	MIGROS TICARET	TRAKYA CAM	NET HOLDİNG
ANADOLU CAM	DERİMOD	ADEL KALEMCİLİK	OTOKAR	TÜRK TELEKOM	BAK AMBALAJ
ARCELIK	DOĞAN HOLDİNG	BATI ÇİMENTO	PARSAN	TÜRK TRAKTÖR	SELÇUK ECZA DEPOSU
ASELSAN	ECZACIBAŞI İLAÇ HOLDİNG	DOĞAN GAZATECİLİK	PEGASUS	TÜPRAŞ	YEŞİL YAPI
AYEN ENERJI	ECZACIBAŞI YATIRIM HOLDİNG	ERBOSAN	SABANCI HOLDİNG	VAKKO	ADANA ÇİMENTO
AYGAZ	EGE ENDUSTRI	KARSAN OTOMOTİV	VESTEL BEYAZ EŞYA	HÜRRİYET GAZETESİ	SARKUYSAN
BAGFAS	AKÇANSA	ENKA İNŞAAT	ERDEMIR	BIM	BOSCH FREN SİSTEMLERİ