T.C.
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INSTITUTE of SOCIAL SCIENCES

THE EFFECT of BOARD STRUCTURE and FOREIGN OWNERSHIP on FIRM PERFORMANCE: TURKEY CASE

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Ph.D. THESIS

in

BUSINESS ADMINISTRATION

ADVISOR
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DECLARATION

I hereby declare that I am the sole author of this thesis. This is a true copy of the thesis, including any required final revisions, as accepted by my examiners.

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Finansal krizler ve kurumsal skandalların ardından tüm dünyada kurumsal yönetim konusuna artan bir ilgi oluşmuştur. Yatırımcıların, gelişmekte olan ekonomilere yatırım yaparken, yatırım portföylerini çeşitlendirmek ve getirilerini maksimize etmek amacıyla hareket ederken, kurumsal yönetim uygulamalarını dikkate aldıkları genellikle kabul edilmektedir. Yatırımcılar ayrıca, kurumsal yönetim faktörlerine, risklerini minimize etmek için de dikkat etmektedirler. Bu çalışmada, Türkiye' deki kurumsal yönetim uygulamalarının firmaların finansal performanslarına etkisi konusu araştırılmıştır. Ortaklık yapısı, yönetim kurulu yapısı ve finansal performans arasındaki ilişki test edilmiştir.

BİST (Borsa İstanbul) 100 ve kurumsal yönetim indeksinde yer alan 50 halka açık şirket üzerinden yönetim kurulu büyüklüğü, yönetim kurulundaki bağımsız üye sayısı (payı), yabancı ortaklık, firma büyüklüğü, kaldıraç oranı, finansal borç toplam aktif oranı gibi kurumsal yönetim değişkenlerinin firmaların finansal performanslarına etkileri, ROA, ebitda, piyasa değeri/defter değeri (pbv), ve finansal kaldıraç değişkenleri kullanılarak test edilmiştir. Çalışmada panel data analiz yöntemi kullanılmış ve açıklayıcı istatistikler, korelasyon matriksi ve regresyon sonuçları analiz edilmiştir. Kurumsal yönetim teorisi kapsamında yönetim kurulu büyüklüğü, yönetim kurulu bağımsızlığı, halka açıklık oranı, yabancı ortaklık payı ve firma büyüklüğü olmak üzere beş temel kurumsal yönetim değişkeni analiz edilmiştir.

Çalışmada, BİST 100 ve kurumsal yönetim indeksi kapsamında yer alan halka açık şirketler için kurumsal yönetim ve finansal performance arasında istatistiksel olarak anlamlı ancak zayıf bir ilişki olduğu bulunmuştur. Özet olarak, yabancı

ortaklığının finansal kaldıraç ile pozitif yönlü pbv ile negatif yönlü; firma büyüklüğünün finansal kaldıraç, pbv ve ebitda ile pozitif, ROA ile negatif yönlü bir ilişkisi olduğu tespit edilmiştir. Diğer yandan, halka açıklık oranı, yönetim kurulu büyüklüğü ve yönetim kurulu bağımsızlığının finansal performans ile istatistiksel olarak anlamlı bir ilişkisi tespit edilememiştir. Ancak, doğrudan kurumsal yönetim faktörleri ile ilişkili sayılmasalar da satış büyüklüğü, ebitda ve finansal kaldıracın finansal performansı etkilediği tespit edilmiştir.

Anahtar Kelimeler: Kurumsal yönetim, finansal performans, yönetim kurulu yapısı, ortaklık yapısı, finansal kaldıraç, Türkiye.
Tarih : Haziran 2016

ABSTRACT

The Effect of Board Structure and Foreign Ownership on Firm Performance: Turkey Case

There has been increasing attention all over the world on corporate governance issues after experiencing some financial crises and corporation scandals. It is assumed that the investors search for emerging economies to diversify their investment portfolios and maximize their returns is considering corporate governance applications. Investors are also concerned about governance factors to minimize their risks. In this study, we examine the impact of corporate governance variables on firms' financial performance in Turkey. The relationship between ownership structures, board structures and financial performances were tested.

Influence of corporate governance variables, board size, share of independent board members, foreign investors, leverage ratio, financial debt to total assets on firms' financial performance Return on Assets, ebitda and price to book value (pbv) are utilized on firms traded in Turkey's stock exchange BIST 100 and listed in CG 50 index. Panel data method was utilized and the results were analyzed using descriptive statistics, correlation and regression. Five main corporate governance variables were analyzed within the framework of corporate governance theory as defined by board size, board independence, foreign ownership, floating rate and firm size.

We found weak significant relationship between corporate governance and financial performance for Turkish companies listed on BIST 100 and corporate governance index companies. In general, foreign ownership has positive effect on leverage and negative effect on pbv (price to book value); asset size has positive effect on leverage, pbv and ebitda and negative effect on ROA; while other corporate governance variables (floating rate, board size, board independence) are not found to

have statistically significant effects on financial performance. However net sales, ebitda, leverage ratios do effect financial performance which are not directly related with corporate governance criteria.

Keywords: Corporate governance, financial performance, board structure, ownership structure, leverage, Turkey.
Date : June 2016

SYMBOLS

r^2 **:** Coefficient of Determination

β : regression coefficients

F : F test

H : Hypotesis

u : error term

X : Dependent variables

Y : Independent varaibles

i : entity being observed

t : date at which it is observed

ABBREVIATIONS

BI	**:**	Board independence
BIST	**:**	Bourse Istanbul
BS	**:**	Board size (Number of board members / number of managerial staff)
CEO	**:**	Chief Executive Officer
CG	**:**	Corporate Governance
CMB	**:**	Capital Market Board (of Turkey)
Ebitda	**:**	Earnings before interest, tax, depreciation and amortization
EU	**:**	European Union
fdta	**:**	Financial Debt / Total Assets
finv	**:**	Ratio of foreign investors (foreign ownership ratio)
FS	**:**	Firm size
FTSE	**:**	Financial Times Stock Exchange
ISE	**:**	Istanbul Stock Exchange
ISS	**:**	Institutional Shareholder Services
Lev	**:**	Leverage (Total debt / total assets)
NS	**:**	Net sales
OECD	**:**	Organization for Economic Corporation and Development
orate	**:**	Share of traded stocks (floating rate)
pbv	**:**	Price / Book Value
ROA	**:**	Return on Assets
ROE	**:**	Return on Equity
SOX	**:**	Sarbanes-Oxley Act
US	**:**	United States

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CHAPTER 1. INTRODUCTION

Corporate governance has been a popular issue in last 30 years especially after financial crisis in Asia in 1998. In theory it is generally accepted that the corporate governance has effect on firm value and therefore the firms with good corporate governance are less affected by financial crises. International capital is believed to consider good corporate governance practices in the countries before investing in those countries.

Though the subject is relatively new, in the literature, there are studies searched the relations between corporate governance and firm performance. It is observed that Asia financial crises had impact on several Asian countries. However some countries were affected harder than the others. Corporate governance practices in these countries were assumed as one of the reasons among the several reasons.

The main argument to support the corporate governance is, implementation of effective corporate governance mechanisms should help reducing agency problems, for example by increasing transparency and accountability of management, by strengthening shareholders' rights in voicing their interests in public companies, etc. Reducing agency problems in turn should improve corporate performance.

Studies related to corporate governance generally examine whether different corporate governance structures impact or constrain executive behavior and have an impact on financial performance.

Lamport et al. (2011, p.2) stated that, "Broadly speaking, corporate governance is all about making sure that decisions are made effectively."

After the series of financial scandals that happened around 2000s, the most of the countries of the world are experiencing the reform of corporate governance. As one of the emerging market in the world, the Turkish market is also experiencing corporate governance reforms.

There is now general acceptance, as well as strong empirical evidence, that corporate governance practices can substantially affect shareholders and stakeholders. But a finding of a relationship between corporate governance and its effects during a given period is subject to different possible interpretations (see, for example, Morck, Shleifer, and Vishny, 1988; Yermack, 1996; Gompers, Ishii, and Metrick, 2003; Brown and Caylor, 2004a and 2004b). These similar studies are frequently contradictory and generally found different results. This is the important question that is studied by researchers.

Hermes and Katsigianni (2011), tries to answer this question with three steps; first corporate governance is a multi faceted concept; second, the country specific concept may be important; and third, the possibility of corporate governance practices being endogenous. In short, the differences in cultures, economic systems and business content affect the corporate governance systems.

These arguments are also discussed in our study and especially country specific concept is considered as an important element for the countries (emerging economies) such as Turkey.

On the other hand, some researchers such as Koh, et al., (2007), argue the issue with its benefits and say that a company relies on corporate governance mechanism to reduce the conflicts of interest of its participants.

Drobetz et al., (2003, p.3), use a strong evidence to show the importance of corporate governance by stating that "… a firm's valuation does not only depend on the profitability or the growth prospects embedded in its business model, but also on the effectiveness of control mechanisms, which ensure that investors' funds are not expropriated or wasted in value decreasing projects.

According to Global Investor Opinion Survey of McKinsey (2002), 15 % of European institutional investors consider corporate governance to be more important than financial issues such as profit performance or growth potential. 40% consider it as equally important with financial issues. Also, 22% of European institutional investors are willing to pay a premium of 19% on average for a well-governed

company. In the same study, Turkish institutional investors were marked as willing to pay 27% premium for good governed firms.

Corporate governance issue has traditionally been associated with the “principal-agent” or the “agency” problem. A “principal-agent” relationship take place when the person who owns a firm is not the same person who manages or controls (Maher and Andersson, 1999). That issue directs us to concentrate on the ownership and board structure.

There are several researches in the corporate governance area investigating the relationship between company performance and corporate governance. These researches generally provided evidence that better governed firms have higher firm performance and higher firm value. On the contrary, there are studies showing that corporate governance implications have no significant effect on firm value and firm performance.

Since the beginning of the 2000s corporate governance mechanism has been considered as an important issue for supporting Turkish capital market and for the companies which try to increase value. Companies in Turkey also show efforts to establish corporate governance systems in order to attract foreign investors.

Turkey has been dealing with various corporate governance practices since the beginning of the 2000s. Capital Market Board published a corporate governance code in 2003 and revised it in 2005. A Corporate Governance index was established in 2007 and currently there are now more than 50 companies in BIST CG index. New commercial code of Turkey was introduced in 2011 and the related rules of corporate governance come into power in 2012. There are four major principles defined in the code: Transparency, fairness, accountability and responsibility.

Following all the explanations we aimed in this thesis to study the effect of corporate governance on firm performance by using the data of BIST 100 index companies and Corporate Governance Index companies. In order to argue our proposal we established a model and tested it by utilizing panel data analysis. There are several studies searching the affect of corporate governance on firm financial performance. The most of those studies used regression analysis to test their models

though there are some studies used panel data analysis. Therefore, we assume that this study's contribution lies in the use of panel data to explain corporate governance implications and its effects on firm performance.

Firm performance is measured by commonly used accounting ratios: return on assets (ROA), earnings before interest, tax, depreciation and amortization (EBITDA), price to book value (pbv). Leverage (total debt / asset) and financial debt to total debt (fd/td) ratios are also used in this study. Although these two ratios are not common in similar studies there are examples that employed these two ratios.

1.1. Objectives of the Study

Corporate governance has attracted great interest since 1980s. The generally accepted view that corporate governance practices has an impact on the firm's value and performance has increased global attention. We should also consider that, there are works insist that the "good corporate governance may reduce the expected return on assets, return on equity to the extent that it reduces shareholders' monitoring and auditing costs."

Corporate governance involves a set of relationships between a company's management, its board, its shareholders and stakeholders. Corporate governance provides a framework in which the objectives of the company are set, means of attaining those objectives and monitoring performance. Corporate governance should provide proper incentives for the board and management to pursue objectives that are in the interests of the company and its shareholders and provide effective monitoring.

Turkey has launched corporate governance legislation in 2003. Since then, number of companies implied the rules have been increasing. The above given statement is also argued in Turkey and some researches were already made on the issue. This study highlights the importance of analyzing and improving the existing corporate governance applications in Turkey. We questioned in this thesis whether corporate governance has effects on firm performance and if it is so how the way of these effects

are. However, since the application of the rules rather new in Turkey, the issue remains open for further studies.

It is generally accepted that, corporate governance practices increase the value of the companies and lower the cost of capital. This argument has been tested in several countries. Though majority of the studies corrected this argument reasons behind the hypothesis have been different.

We in this thesis, first of all, try to understand if there is a correlation between corporate government practices and company performance and in which way this correlation occurs. The primary objective in this thesis is to provide evidence for a possible relationship between corporate governance and firm performance within BIST companies and corporate governance index companies under crises conditions. This study questions whether corporate governance affects the financial performance of the firms.

We investigate the relationship between corporate governance practices and company performance using information from a sample of BIST 100 Turkish companies and CG index companies for the period 2007 – 2013 which contains the 2008-2009 financial crisis periods. Because, we basically think that the effect of corporate governance would be measured the best under crisis conditions. If a company is good governed, it should have the better results comparing with the others which do not have good governance.

The main objective of this study is to determine whether corporate governance implications in Turkey had contributed to firm financial performance. There have been researches in developed countries that proved the positive effect of corporate governance on firm performance. However, on the opposite site there have been researches in developing countries that had controversial results and have not connected firm performance and corporate governance practices. These controversial results make modeling difficult. It is difficult for researches to determine the corporate governance variables that may influence the firm performance. In our study we considered the governance role of independent directors, board size (number of board members), ownership structure (foreign owner), and floating rate as corporate

governance indicators that could potentially influence firm performance. Using these variables, an econometric model is employed to analyze the panel data collected on 92 firms which are chosen out of 150 firms.

We also aimed to discuss and compare the results obtained from the study with corporate governance practices and corporate governance researches in other countries. As result we aimed to argue new policy options that may be useful for the private sector firms and the related authorities.

In this framework, our research objectives are:

To determine the relationship between corporate governance practices and performance of companies listed in BIST 100 and Corporate Governance Index on BIST for the period of 2007-2013, and also to empirically evaluate the effects of corporate governance on firm performance in Turkish companies. To be more specific, the objective of this research is to study the impact of corporate governance variables: Board size (number of board of directors), board independence (number of independent members of board), foreign ownership, floating rate and firm's profitability ratios, Return on Assets (ROA), EBITDA, financial ratios, leverage, financial debt to total assets, net sales and asset size.

We wanted to understand the effect of corporate governance on firm financial performance of BIST 100 and CG index companies of BIST, Turkey. Our main goal is to understand the effects of ownership structure and board structure on financial performances of those firms.

My research questions are:

1. Are there any relationships between corporate governance practices and firm performance by considering profit, value and leverage ratios of companies listed on BIST and in the Corporate Governance Index?
2. Do corporate governance practices (board structure and ownership structure) for companies listed on BIST and in the CG Index affect their performance especially under crises conditions of the term 2007-2013?

In order to answer the research questions we established a model for the listed firms in BIST 100 and in CG index to show the relationship between CG and firm performance. We used the figures of 2007-2013 periods that cover 2008-2009 financial crisis periods.

1.2. Significance of the Study

There are several studies on corporate governance and firm performance both in developed and developing countries. These studies mainly focus on corporate governance characteristics and firm performance. We have been observing corporate governance researches on developing countries lately. Considering studies investigated developed and developing countries we observe some controversial results. Studies related with developed countries generally found positive relationships between corporate governance and firm performance while studies related with developing countries found weak or no relationship between corporate governance and firm performance.

This thesis adds another empirical result to the corporate governance literature in Turkey and provides evidence that although there is a relationship between corporate governance applications and firm performance it is rather weak or not significant.

Another important factor in studies to be considered is the model used. Because of difficulties in collecting data in developing countries researchers generally established a corporate governance index which creates another problem of having acceptable results. In this thesis, collecting data successfully we used a model of panel data analysis for the period of 2007-2013 which is comparatively longer than other studies. Using panel data model with a large data is another important contribution of this thesis.

Corporate governance in Turkey is still a growing phenomenon. Although grow fast, literature on corporate governance is limited. There are several studies on corporate governance in Turkey mostly held after 2000s, however a few used a panel data analysis for testing the model. On the other hand, corporate governance

implications increased after 2005, and corporate governance index launched in 2007. Comparing with former studies we had chance to collect data for larger period.

Apart from other differences leverage and financial debt to total assets ratios were the variables we used in this thesis as dependent variables in the model which is generally not used in the studies in Turkey. We also used price to book value (pbv) as one of the dependent variable instead of Tobin's Q, though Tobin's Q has been the most used variable in the experienced models.

This research also contributes the Turkish corporate governance literature by providing evidence on period of financial crises period of 2008-2009. We found that, there is positive effect on firm performance during 2008-2009 that can be attributed to the corporate governance practices.

These findings may be helpful for the discussions on the assessment of the relations existing between corporate governance variables and firm performance. The results of this thesis will fill the gap by assessing the relationship between corporate governance practices of board size, board independence, foreign ownership, floating rate, and firm size. Additionally, these conclusions may have implications for policy makers, researchers, managers, regulators and investors.

1.3. Organization of the Study

In this paper we empirically analyzed the effect of current corporate governance mechanism of the Turkish listed companies on their firm performance. We employed firm size, foreign ownership, floating rate, board size and number of independent board members as corporate governance variables in this study. Some of the findings of this study are consistent with the results of previous studies in the other markets. The interesting finding of this paper is the negative relationship between the proportion of tradable shares and the firm performance. This is converse to the conventional wisdom that tradable shares are a positive factor of the firm performance.

In this thesis, after introducing the objective and significance of study we begin with defining the corporate governance and then defining the problem. In the second

chapter, we begin with literature review and provided an intensive search of corporate governance theory. After reviewing the literature we discussed the relationship between corporate governance and firm performance. We extended the literature review into Turkey's experience too in the second chapter.

Chapter three includes the research methodology. We presented in this chapter performance variables used in the model, described the sample and data used, research hypotheses. In this chapter we explored the determinants of corporate governance and its relationship with firm performance.

In chapter four explaining panel data analysis we set a model and studied related statistical analysis. Chapter four concludes with the empirical findings of panel data analysis and discusses the results of the study. Limitation of the thesis is also given in chapter four. This chapter presents potential future areas of research.

We discussed the results in chapter five. In this chapter, corporate governance variables used in this thesis and related results were widely discussed.

Chapter six concludes the study.

CHAPTER 2. LITERATURE REVIEW

2.1. Definition

The concept of corporate governance has been important in all over the world with the extension of financial markets (globalization). It is believed that international capital considers good corporate governance practices in the countries before investing in these countries.

There is no single definition for corporate governance. Since it has emerged from the sincere need of the economies and countries the cultural and economical environment have been main factors for the definition.

There are different definitions for three different groups (Alp and Kılıç, 2014, p.23), i.) definitions that arrange relations between the firm and the share (or stake) holders, ii.) definitions that predicate on which outcomes intended to reach and iii.) definitions that base on management concept which rely on certain objectives and principles. Based on these classifications we might define corporate governance as a set of relationships between a company's management, its board, its shareholders and stakeholders.

In the OECD Principles of Corporate Governance Report which was first published in 2004 (OECD, 2015, p.13), it is stated that "the corporate governance framework should promote transparent and efficient markets, be consistent with the rule of law and clearly state the division of responsibilities among different supervisory, regulatory and enforcement authorities" In the same OECD report, CG is defined as "[…] 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, 2015, p.9). The principles recognize the interests of employees and other stakeholders and their

important role in contributing to the long-term success and performance of the company.

Shleifer and Vishny (1997), defined corporate governance as a set of mechanisms to ensure that suppliers finance to corporations will get a return on their investments.

According to Love (2011), corporate governance is intended to address agency problems between shareholders and managers or between majority shareholders and minority shareholders.

Bairathi (2009, p.753) in his study, defines corporate governance as "it is not just corporate management; it is something much broader to include a fair, efficient and transparent administration to meet certain well-defined objectives. It is a system of structuring, operating and controlling a company with a view to achieve long term strategic goals to satisfy shareholders, creditors, employees, customers and suppliers, and complying with the legal and regulatory requirements, apart from meeting environmental and local community needs"

There are complex corporate governance systems exist across countries that mainly involve the ownership and control of the firms. In some countries, outside managers are given importance due to their strong effect on management. Adversely, in some countries concentrated ownership or control is the main characteristic of the system. According to the characteristics of the countries one of these systems take importance and therefore research on the effect of corporate governance in different countries give divergent results. Therefore, no single model of corporate governance exist (OECD, 2015) and each country based on their culture attempts to find the most suitable governance system.

Corporate governance is the process of managing and controlling the activity, direction and performance of companies and, by extension, other institutions. The scope of governance is a controversial issue; some researchers interpret it narrowly as referring to the maximization of shareholder wealth, whereas, for others, governance has evolved to include corporate accountability, corporate social responsibility, risk management and the protection of interests of other stakeholders apart from shareholders. (Abdullah and Page,2009, p.1)

Corporate governance in most studies such as Siebens (2002, p.111) is defined with the interests of all the stakeholders. It is assumed to consider all the groups and maintain their interests with the maximum level possible. In the economics debate concerning the impact of corporate governance on performance, there are basically two different models of the corporation, the shareholder model and the stakeholder model.(Maher and Andersson, 1999, p.6)

Corporate governance is the set of processes, customs, policies, laws, and institutions affecting the way a corporation (or company) is directed, administered or controlled. Corporate governance comprises the long-term management and oversight of the company in accordance with the principles of responsibility and transparency (OECD, 2009).

In their study for the World Bank, Iskander and Chamlou (1999, p.vi) made a comprehensive definition: “Corporate governance is concerned with holding the balance between economic and social goals and between individual and communal goals”. According to the World Bank, corporate governance comprises two mechanisms, internal and external corporate governance. Internal corporate governance, giving priority to shareholders’ interest, operates on the board of directors to monitor top management. On the other hand, external corporate governance monitors and controls managers’ behaviors by means of external regulations and force, in which many parties involved, such as suppliers, debtors (stakeholders), accountants, lawyers, providers of credit ratings and investment banks (professional institutions). (Maher and Andersson, 1999)

Mitton (2002, p.212), in his study on five East Asian countries, defines corporate governance in a different manner as the means by which minority shareholders are protected from expropriation by managers and controlling shareholders.

Irrespective of the particular definition, the importance of CG arises in a firm because of the separation between those who control and those who own the residual claims (Epps and Cereola, 2008).

In summary, firms are responsible to shareholders, employees, and the other third parties which have relations with the firm. Corporate governance is a mechanism that firms can increase their performance and value by using it.

2.2. Impacts of Corporate Governance on Firm Performance

Corporate governance has been accepted (weak or strong) as a triggering factor on firm performance. Corporate governance may have an impact on several different aspects of firm performance (Love, 2011, p.5):

1. Operating performance: i.e. the profitability, often measured as ROA (return on assets) or ROE (return on equity).
2. Market Value : i.e. the market capitalization relative to book value, measured as Tobin's q or market to book ratio.
3. Stock returns : i.e. relative change in stock price over time, measured by a return on investment.

Researchers have also been point out the ways that corporate governance mechanisms may improve the performance of firms. Below given ways may be listed among others (Love, p.6):

1. With better monitoring, managers are assumed to invest in value-maximizing projects and be more profitable in their operations.
2. Rare resources will be wasted on non-productive investments.
3. Better governance reduces the misuse of resources, asset-stripping, related party transactions and other ways of diverting firm asset or cash flows from equity holders.
4. If investors are better protected and bear less risk of losing their assets, they should be willing to accept lower return on their investment. This will cause a lower cost of capital for firms and hence higher incomes.
5. The availability of external finance may also be improved, allowing firms to undertake an increased number of profitable growth opportunities.

Within this framework it is commonly assumed that enhancing corporate governance would result in economic growth and increase value.

2.3. Principles for Corporate Governance

As stated in OECD study (2015), there is no one model of corporate governance that works in all countries. Therefore, local authorities in different countries defined different corporate governance principals. However, there are still some principles which were accepted in general. OECD published a report in 2004 and defined some standards. In this report six areas of concern are covered (OECD, 2004, p.14). These principles were: 1) Ensuring the basis for an effective corporate governance framework; 2) the rights of shareholders; 3) the equitable treatment of shareholders; 4) the role of stakeholders; 5) disclosure and transparency; and 6) the responsibility of the board.

Accordingly, by accepting these principles four main principles were set as corporate governance standard. These are called as corporate governance principles: Fairness, Transparency, Responsibility, and Accountability (CMB, 2005, p.6).

- **Fairness (Equality):** Equal treatment of share and stakeholders by the management in all activities of the company and thus aims to prevent all possible conflicts of interest.

- **Transparency:** Disclose company related financial and non-financial information on the public in a timely, accurate, complete, clear, construable manner and easy to reach at low cost, excluding the trade secrets and undisclosed information (Tusiad, 2002, p.35). Kocel (2010, p.456) states that, corporate governance aims to give possible information and behave transparent to the state, shareholders, customers, employees, and creditors.

- **Accountability:** The obligation of the board of directors to account to the company as a corporate body and to the shareholders. Accountability is important because, interest of shareholders and managers are not always going together (Yıldırım, 2007).

- **Responsibility:** The conformity of all operations carried out on behalf of the company with the legislation, articles of association and in-house regulations together with the audit thereof.

In Abdullah and Page study (2009, p8), they analyzed various studies to determine the common codes of governance and identified the issues covered by codes. These can be summarized as:

• Separation of the roles of board chair and CEO;
• Independent non-executive directors;
• Appointment, re-election and training of directors;
• Availability of information for directors;
• Service contracts and remuneration of directors;
• Financial reporting;
• Internal control;
• Audit committees and auditors; and
• Relationships and dialogue with significant shareholders.

Additionally, ownership structure (institutional shareholders, foreign owners and concentration of shareholders) should be added into this list.

In Abdullah and Page research (p.8) they referred to the FTSE and Institutional Shareholder Services study (2005) that reviewed a wide range of accepted standards and codes globally. The review enumerated more than 60 corporate governance criteria which were grouped into five broad themes: structure and independence of the board (44% of the criteria); equity structure (21%); compensation systems for

executive and non-executive directors (17%); executive and non-executive stock ownership (9%); and independence and integrity of the audit process (9%).

2.4. Theory of Corporate Governance

Theory of corporate governance assumes that there is a positive relation between corporate governance and firm performance. There have been empirical studies done in the different countries aim to explain these relations between corporate governance and firm performance. Some of those studies considered market based data while others used financial data.

Researchers, scholars and governments, are increasingly playing a greater role developing and formulating corporate governance practices especially after the financial crisis 2008 that lead to collapse of many institutions and virtually brought many industries to bankruptcy. Corporate governance first came into vogue in the 1970s in the United States. With the collapse of Enron and Arthur Andersen in the U.S., corporate governance has become increasingly important. As a result, international organizations have shown concerns about governance issues. The international monetary fund in its debt relief programs insisted governance improvements as a prerequisite for their programs (Khanchel, 2007). In order to assist member and non-member countries in their pursuit of either developing or enhancing corporate governance standards, the Organization of Economic Coordination and Development issued its OECD principle of corporate governance in 1999(Nestor and Thompson, 1999).

Following above mentioned developments, much research have been conducted on corporate governance and corporate performance. There found to be a relation between corporate governance practices and performance. It is argued in some research that this relation is strong though some found a weak relation. However, since it is accepted as an important issue, it still attracts attention for an academic study.

Early studies are mainly concerned with the relationships of specific corporate governance mechanisms to firm performance. Studies made since 2000 generally

focused on the relationship with the firm performance and corporate governance as a whole. Since corporate governance practices supported by governments and capital markets its importance increased and related studies in almost every country were made. There have been a number of empirical studies, mostly academic journal articles, on the relationship between good corporate governance in general and firm performance.

Gompers, Ishii and Metrick (2003), creating a Governance Index (G-Index), showed that firms with strong shareholder rights outperform firms with weak shareholder rights by 8,50 percent per year during the 90s. They also provided evidence that firms with strong shareholder rights have higher firm value, higher profits and higher growth in sales. Parallel with above mentioned study, Bebchuk and Cohen (2005), supported the argument that firms with stronger stockholder rights have higher Tobin's Q, suggesting that better governed firms are more valuable.

Mitton (2002) using firm level data on 398 listed companies from Indonesia, Korea, Malaysia, Philippines and Thailand documented that the firm-level differences in variables are related to corporate governance has strong impact on firm performance during East Asian Crisis in 1997 and 1998.

When studying corporate governance, several disciplines are required to define the concept and establish the theoretical background due to understanding of the complex nature of the concept.

The most widely known and discussed theories on corporate governance are the Agency theory (Jensen and Meckling, 1976), the stewardship theory (Donaldson, 1990; Pfeffer, 1972), the Stakeholder theory (Freeman et al., 2004; Kiel and Nicholson, 2003; John and Senbet 1998)**,** and the resource dependency theory (Ruigrok et al., 2006).

2.4.1. The Agency Problem

The most widely used framework for analyzing the relationship between the firm and its shareholders is agency theory. The study of Berle and Means (1932) was

considered as the origin of the agency theory. However, the issue was brought into a large discussion by Jensen and Meckling (1976). The implications of Berle and Means's work were clear. They advocated deserved voting rights for all shareholders, greater transparency, and accountability.

However, Jensen and Meckling (1976) contributed the theory by suggesting that the firm can be considered as a set of contracts among various parties or stakeholders such as shareholders, lenders, employees and society at large. The interests of stakeholders are not always aligned. Agency problems occur when the interests of agents are not aligned with those of principals (Lei, 2006, p.13). Managers are more likely to act against shareholders' interests when they do not earn their desirable interests (Jensen and Meckling, 1976). This opportunistic behavior of management can lead to reduce the value of the firm.

Agency theory suggests corporate governance as a mechanism to reduce these conflicts by monitoring managers' performance and aligning management's goals with those of the stakeholders.

Corporate governance has traditionally been associated with the "principal-agent" or "agency" problem. A "principal-agent" relationship arises when the person who owns a firm is not the same as the person who manages or controls it. For example, investors or financiers (principals) hire managers (agents) to run the firm on their behalf. Investors need managers' specialized human capital to generate returns on their investments, and managers may need the investors' funds since they may not have enough capital of their own to invest.

The shareholders have great interest on the firm's net income. Because, their benefit mainly depends on net income and net income also the main driver of the firm value. However, shareholders do not operate their firm. Professionals (managers) operate the firm for them. On the contrary, managers do not consider the net income best for their benefits. But their behavior affects the profit. This is called as agency problem. As Lei (2006) stated, "Interests of managers and owners are not aligned".

Agency theory considers the stronger shareholders rights. It is assumed that, weak shareholder rights could cause additional agency costs and so compromise operating

performance. If investors underestimate these additional costs, stock returns would be lower than expected, leading to lower valuations. (Agrawal and Knoeber, 1996, p.13). Furthermore, agency theory assumes an opportunistic behavior between managers and stakeholders. Individuals want to maximize their own expected interests (Chaghadari, 2011).

Agency theory has been well accepted and preferred approach to corporate governance studies among other theories. The agency theory assumes that the managers are rational but we cannot trust them since they are self interested. Therefore managers should be controlled to avoid “moral hazard” using some risk-bearing and monitoring mechanisms (Lawal, 2012).

In order to specifically define the agency problem, researchers studied the crucial role of board as an instrument to owners in control the self interested behavior of managers. Agency theory advocated for a clear separation between decision making and control (see Fama 1980; Fama and Jensen, 1983). The need for increased number of independent board members as well as larger board size that makes management manipulation difficult are all some of the internal mechanisms related with corporate governance (Agrawal and Knoeber, 1996; Bhagat and Black, 2002).

There has been considerable discussion in the academic literature of managerial agency problems that arise from the separation of ownership and control (see, Jensen and Meckling 1976). There have been proposals to contribute corporate governance systems for solving agency problem between managers and their shareholders. The proposed governance mechanisms include, for example, CEO incentive compensation, managerial ownership, monitoring by large shareholders, board size and independence, and stronger shareholder rights (see, Demsetz and Lehn, 1985). We also in our study benefited from agency theory to establish our models.

Agraval and Knoeber (2012), suggest two fundamental ways for owners to address the agency problem. The first way is to make the managers as a part of the shareholders (inside managers) and the second way is to monitor managers and then to reward or penalize based upon their measured behavior. However, they also discuss the disadvantages of the both ways.

2.4.2. The Stewardship Theory

The Stewardship theory assumes that managers are trustworthy. It assumes that the interest of shareholders and the interest of management are aligned. Therefore, management should take decisions that would maximize performance and the total value of the firm (Tornyeva and Wereko, 2012). Hence it is an opposite view of the agency theory.

The stewardship theory focuses on the proportion of insiders on the board to investigate links with corporate performance (Kiel, and Nicholson, 2007, p.3). The theory recommends unification of the position of CEO and board chair to reduce agency costs (Lawal, 2012). The stewardship theory also recommends the smaller board size for the firms in order to increase the efficiency of decision making. In order to achieve the board efficiency and performance, the degree of board dependency is important. The theory suggests that, inside managers can understand the business better than outside managers and they can make superior decisions (Donaldson and Davis, 1991).

2.4.3. The Stakeholder Theory

Clarkson (1994), defined the stakeholder theory as the purpose of the firm is to create wealth or value for its stakeholders. Stakeholder theory, instead of the shareholders, argues that there are other parties involved, including employees, customers, suppliers, financiers, communities, governmental bodies, political groups, trade associations, and trade unions. In addition to the Freeman (1984) who was called as the father of the stakeholder theory, stakeholder theory is also well explained and discussed by Kiel and Nicholson (2007), and John and Senbet (1998).

The theory assumes that firms do not operate in an isolated world but in an environment made of different interest groups (Lawal, 2012). The theory proposes that the main aim of the company should be shifted from maximizing company value to satisfying the other stakeholders' expectations. Therefore, maintaining harmonious corporate relationships with each group is of high strategic importance to the firm.

The stakeholder theory supported for large and well diversified corporate board size that accommodate and facilitate the alignment of the interest of each constituent especially those that create value to the firm (John and Senbet, 1998).

2.4.4. Resource Dependency Theory

According to the resource dependency theory, a firm's competitive advantage is based on the ownership of tangible and intangible resources. These resources are assumed to be difficult or costly for other firms to obtain. The theory appreciates the strategic importance of other stakeholders beside the immediate shareholders in guaranteeing firms' access to resource through affiliation with various constituencies (Lawal, 2012, p.24).

The theory aims to show how the external resources of organizations affect the behavior of the organization. According to the arguments of the theory, organizations depend on resources. These resources originate from organization's environment. Every environment contains other organizations. Therefore, every independent organization depends on each other.

As Kiel and Nicholson (2007) and Chen (2011) pointed out for resource dependency, the board of directors not only performs a monitoring role, but also provides necessary critical resources, such as business contacts and contracts, knowledge and expertise. By doing this, financial performance of the company and shareholders' wealth can increase.

The theory assumes that an ideal board should consist of individuals with varieties of external linkages such as business experts, support specialists and community influential that bring within the firm's reach access to requisite resources. Firms with appropriate network connection are also able to reduce the transaction cost associated with interaction in the external environment (Lawal, 2012). The theory also assumes that, diversified boards with independent members are likely to reach the improved corporate performance.

2.5. Advantages and Disadvantages of Corporate Governance

Corporate governance would be effective if only the corporate governance practices benefits stakeholders, as well as broader industries and economic sectors. Applying corporate governance rules should resolve conflicts of interest among stakeholders, establish better control systems, and encourage transparent management.

According to Gregory and Simms (1999, p.4), Corporate governance promotes efficient use of resources within the firm and the larger economy. It also helps firms to attract low cost investment capital through improved investor and creditor confidence, both nationally and internationally. It also increases the firm's responsiveness to the need of the society and results in improving long term performance.

Additionally, good corporate governance assumed to provide firms strong internal controls, better credit ratings which would lead lower debt funding, increased firm value. Better governed firms are supported by proper financial markets, robust legal systems and fund raisers. On these grounds, good governed firms have financial and economical stability and therefore reach high growth rate and good financial performance.

On the contrary, we should say that the corporate governance practices cannot guarantee the good financial performance. Additionally, corporate governance applications increase the operational costs.

Considering studies on corporate governance we can summarize the benefits of corporate governance as follows (Ararat and Yurtoglu, 2006):

a) CG eases the access to capital markets and reduces the cost of capital by reducing risk premium. It is believed that there should be a trustable environment in a country to attract the capital. CG practices are the main factors for a country to show its trustable environment and have lower capital cost.
b) CG helps the efficient use of sources:

c) CG effects the firm performance positively
d) CG is a tool for sustainability

Cost of CG:

a) Increased responsibility of the board effect board members in a negative manner.
b) Heavy rules decrease the flexibility of corporate management
c) CG rules increases the cost of management which especially effect the small firms

2.6. Corporate Governance and Firm Performance

Lei, (2006, p.27) defines two channels to show how corporate governance affects the performance of firms. These are: reducing the waste of capital and the cost of capital. The theory in general, assumes that better governed firms show better financial performance and have higher shareholder value. However, there is no concrete empirical evidence on how corporate governance mechanism influence corporate performance.

According to Sleifer and Vishny (1997), better governed firms are more likely to invest in profitable projects, resulting in more efficient operations and higher expected future cash flows.

In some other theoretical studies such as Durnev and Kim (2005), La Porta et al., (2002), and Klapper and Love (2002 and 2003), corporate governance implications are assumed to enhance the firm value and therefore investors are willing to pay more for shares. Additionally, most researchers studied the influence of specific aspects of corporate governance such as board of directors, ownership structure, and capital structure

Reviewing the corporate governance literature one can see that researches and studies generally support the aim of corporate governance. On the other hand, according to some researchers (see Harris and Raviv, 2008; Larcker, Richardson and

Tuna, 2007) the theoretical platform on which foundations of corporate governance is built is weak and as such finds itself deprived of any theoretical base. Parum (2005) also have the same line of reasoning and conclude that studies carried out on corporate governance have not been consistent whether empirically, methodologically, or even theoretically.

However, others such as Gompers et-al (2003), Claessens et-al (2002), Donaldson (2003), Frost et-al(2002) have optimistic position on corporate governance and support the developments.

This is because corporate governance increases investor confidence and goodwill, ensures transparency, fairness, responsibility and accountability. Gompers et al. (2003) maintained that good corporate governance increases valuations and boost the profitability of the firm. According to Claessens et al. (2002) better corporate governance help firms through greater access to financing, lower cost of capital, better performance and more favorable treatment of all stakeholders. Donaldson (2003) assumes that good corporate governance is important for increasing investor confidence and market liquidity. According to Frost et al. (2002), improvements in corporate governance practices contribute to better disclosures in business reporting in-turn can facilitate greater market liquidity and capital formation in emerging markets.

Drobetz et-al (2003, p.6) in their research define agency problem for USA and Germany perspectives with two important points : “In the United States, with traditionally high dispersion of ownership, the primary methods to solve agency problems are the legal protection of minority investors, the use of boards as monitors of senior management, and an active market for corporate control. In contrast, German corporate governance is characterized by lesser reliance on capital markets and outside investors, but a stronger reliance on large inside investors and financial institutions to achieve efficiency in the corporate sector.” (See also the German Corporate Governance Code (2002)).

On the other hand some other studies report the mixed results on the relation between corporate governance and firm performance. For example, Bebchuk et al.

(2004), show negative relation between firm valuation and stock return. Similarly Bauer et al. (2004), analyzed the relation between operating performance of the firm and corporate governance practices and found negative relations.

2.7. Corporate Governance Developments in Turkey

Turkey as a member of OECD has always followed the developments occurred in OECD countries. Corporate governance issue and developments related with the issue was also closely viewed by Turkey.

Turkey has been dealing with various corporate government applications since the beginning of the 2000s. Capital Market Board published a corporate governance code in 2003 and revised it in 2005. The code was issued on a "comply or explain" basis which defined new roles, duties and structure on the board of directors.

Capital Market Board accepting the arguments raised by corporate governance theory states that (CMB 2005, p.5) "Empirical studies indicate that international investors now better realize the significance of corporate governance practices on the financial performance of companies than ever before and while adopting investment decisions, international investors believe that this issue bears more importance for countries that are in need of reforms, and that they are more ready to pay higher premiums for companies having sound corporate governance practices.

As a natural consequence of several corporate governance studies, Capital Market Board (2005) accepts the fact that no single corporate governance model is valid for every country. However, in accordance with OECD corporate governance principles the concepts of equality, transparency, accountability and responsibility were accepted.

Although these principles were published with EU accession and the global markets integration they addressed first publicly held companies. Firms listed in BİST have to declare their application or non-application of the principles in the firm's annual report.

CG code of Turkey included 44 principals divided into four main categories: the rights and obligations of shareholders; the role of stakeholders in corporate governance; transparency, disclosure of information and auditing; and the role of the board of directors, including executive management and the nonexecutive members.

In the related section, stakeholder is defined as an individual, institution or an interest group that is related with the objectives and operations of a company in any way. In large, stakeholders of a company include the company's shareholders and its workers, creditors, customers, suppliers, unions, various non-governmental organizations, the government and potential investors who may consider investing in the company.

In the last section, principles concerning functions, duties, obligations, operations and structure of the board of directors, remuneration thereof, as well as the committees to be established to support the board operations and executives included.

A Corporate Governance index was established in 2007 and currently there are now more than 50 companies in BIST CG index. New commercial code of Turkey was launched in 2011 and the related rules of corporate governance come into power in 2012.

2.8. Related Literature

Since we are dealing with the performance issue in this thesis, we concentrated on the literature of corporate governance and firm performance. There is a significant body of theoretical and empirical literature in accounting and finance that considers the relations among corporate governance, board characteristics, corporate performance, corporate capital structure, and corporate ownership structure.

Corporate governance literature has focused on studying the different ways that capital owners can monitor their investments. There is also an extensive literature that considers the relationships between corporate governance, finance and accounting variables.

Since the theoretical study of Berle and Means (1932) which argues for a positive correlation between the ownership concentration and performances, there has not been any empirical study conducted until the seventies. Jensen and Meckling (1976) discussed the relationships between managerial ownership and performances and they found positive relationship as opposed to Berle and Means (1932).

Corporate governance theory proposes that there is a positive relation between corporate governance and firm performance. However, different results were observed in empirical studies since corporate governance practices varies in different countries and related business cultures are different (Turan and Bayyurt, 2013).

Performance was evaluated by several ways in corporate governance studies. Board effectiveness, board independence, board size, ownership structure, CEO duality, directors' remuneration, audit quality, transparency and disclosure, social responsibilities are among the measures.

Corporate governance is a slowly changing phenomenon and any relationship between corporate governance and performance needs to measure longer-run effects, rather than transient ones (Abdullah and Page, 2009, p.ıx). In theoretical studies, the question of "Whether companies with particular corporate governance characteristics outperform other companies and have lower level of risk?" is frequently asked. Another important question related with the issue is "Whether corporate governance affects the performance of the companies or good companies imply corporate governance practices?" This question is asked because; some researchers have noted that, the governance of a firm is a function of firm characteristics. Chidambaran et al. (2009) study does not support the argument of "governance changes can cause a better firm performance". They stated in their study (p.5) that, "… governance changes can be expected to have a significant positive impact on performance in the sample of firms that experience large performance declines. Or, some firms may use the opportunity to reduce the quality of their governance during good times while others might seek to reinforce good performance by improving governance." Therefore important questions remain on whether firms can improve their performance by

implementing changes to their governance structure? Corporate governance as sometime argued should be understood as a chance rather than an obligation

The theory of corporate governance discusses different corporate governance variables however still do not identify a simultaneous system of equations or reliable firm level fixed effects approach. Starting from this detection, we decided to study the relationship between corporate governance and firm performance in Turkey by using a different approach.

Many studies have found a positive correlation between firm performance and good governance, which has led to numerous attempts to reform governance by institutional investors and academicians. For example, in the USA, Sarbanes-Oxley Act was launched with the intense efforts of several institutions and investors in 2002 (Bhagat and Bolton, 2009).

Since the early 80's, there have been several papers empirically investigated the relationship between corporate governance practices and firm performance. Different results were obtained (see Drobetz et al. 2003; Gompers et al. 2003; Klapper and Love, 2002; Larcker et al. 2007; Brown and Caylor, 2004a; Demsetz, 1983). Drobetz et al. (2003) in their research on German firms found a strong positive relation between corporate governance quality and firm value. On the contrary, Demsetz (1983) and Demsetz and Vilallonga (2001) observed no relationship between corporate governance (ownership structure) and firm performance.

As some of the studies suggest, we believe that country specific features (business culture of the country) may be the important reason behind the success or failure of corporate government applications (Black, 2001a; Durnev and Kim, 2005; Klapper and Love, 2004).

Theoretically, it is assumed that good corporate governance should help local companies to gain access to foreign capital and foreign companies and also loan facilities. La Porta et al. (1999, p.5) reported in their study that "… firms in emerging economies (compared with their counterparts in developed countries) are discounted in financial markets because of weak governance"

Gompers, Ishii, and Metrick's (2003) study has been considered as one of the main papers related with the issue. In their study, they searched the impact of corporate governance on firm performance during the 1990s. Creating a Governance Index (G-Index), they showed that firms with strong shareholder rights outperform firms with weak shareholder rights by 8,50 percent per year during the 90s. They find that stock returns of firms with strong shareholder rights outperform, on a risk-adjusted basis, returns of firms with weak shareholder rights during this decade. They provided evidence that firms with strong shareholder rights have higher firm value and higher growth in sales. On the policy domain, corporate governance proponents have prominently cited this result as evidence that good governance has a positive impact on corporate performance.

Parallel with above mentioned study, Bebchuk and Cohen (2005), supported the argument that firms with stronger stockholder rights have higher Tobin's Q, suggesting that better governed firms are more valuable.

Bhagat and Bolton (2008, p.257) interprets this result of Gompers et al. with three ways. "First, these results could be sample-period specific; hence companies with strong shareholder rights during the current decade of 2000s may not have exhibited superior return performance. Second, the risk-adjustment might not have been done properly; in other words, the governance factor might be correlated with some unobservable risk factor(s). Third, the relation between corporate governance and performance might be endogenous raising doubts about the causality explanation." Similar doubts have also been raised later and literature had mixed results.

Previous studies (Rajan and Zingale, 1998; Brickly et al., 1994; Williams, 2000; Hossain et al., 2000; Gemmill and Thomas, 2004; Weisbach, 1988) have established positive relationship between good corporate governance practices and firm performance. However, other studies (Bathala and Rao, 1995; Hutchinson, 2002) have established negative relationship. Nevertheless, some researchers (Park and Shin, 2004; Singh and Davidson, 2003) could not established any relationship. This can be attributed to the different countries, different cultures and different practices.

Despite these conflicting results, the literature generally accepts that there is no doubt as to the importance of good corporate governance in enhancing firm performance. This fact is confirmed by the particular attention being given to issues of corporate governance by governments, regional bodies, and private institutions.

In the aftermath of the financial crises in 2007, OECD's study (2009) on the corporate lessons from the financial crises concluded that, the crises was largely due to failures and weaknesses in corporate governance arrangements which could not serve their purpose to safeguard against excessive risk taking by the financial institutions.

Klapper and Love (2003) found a high positive association between better governance and operating performance using firm level data of 14 emerging stock markets with return on assets as a proxy for operating performance. However, they also accept that the result may vary among countries. Likewise, some other researchers (Gompers and Metrick 2001, Brown and Caylor 2004a) reported a positive relationship between the quality of corporate governance and their measures of profitability.

Additionally, Klapper and Love (2003) find that firm-level corporate governance provisions matter more in countries with weak legal environments. Selvaggi and Upton (2008) claimed that good corporate governance enhances firm's performance for the United Kingdom and found the presence of a strong causality between the two variables. Similarly, Black (2001) has reached the same conclusions in the case of Russian firms.

Kowalewski (2012), studied the question of "Does higher corporate governance lead to an increase in cash dividend?" and answered "yes". In his research, he studied the firms in Poland during the recent financial crises (after 2008-2009 US financial crises), and he found that corporate governance is positively associated with return on assets. However, he also concluded that, in the period of the financial crises better governed firms paid dividends less generously then do firms with lower corporate governance standards. Indeed, his study confirms that even during the financial crises better governed firms outperformed firms with weak corporate governance standards.

The empirical study of Mitton (2001) which taken sample of 398 firms include Korean, Malaysian, Indonesian, Philippines, Thailand have found that the firm-level differences in variables are related to corporate governance has strong impact on firm performance during East Asian Crisis in 1997 and 1998. The results suggest that better price performance is associated with firms that have indicators of higher disclosure quality, higher outside ownership concentration and they are focused rather than diversified.

Brown and Caylor (2004a) analyze the US firms with 51 factors, 8 sub-categories for 2327 firms based on dataset of Institutional Shareholder Service (ISS). Their findings show that better governed firms are relatively more profitable, more valuable and pay more cash to their shareholder. Lipton and Lorsch (1992) and Jensen (1993) declare that limiting board size improves firm performance because the benefits by larger boards of increased monitoring are outweighed by the poorer communication and decision-making of larger groups. The study by Yermack (1996) points out an inverse relationship between board size and profitability, asset utilizations, and Tobin's Q. Anderson et al. (2004) discuss that the cost of debt is lower for larger boards, because creditors view these firms as having more effective monitors of their financial accounting processes.

On the contrary, some other studies found no significant positive relationship between performance and corporate governance. For instance, Bauer et al. (2004) argued that initially an insignificant relationship was reported which afterwards turned to a significantly and statistically negative relationship. Moreover, other studies (Park and Shin 2004 and Prevost et al. 2002) did not found any evidence of any relationship between the two variables.

Given the fact that measures used to capture the essentials of financial performance differ across studies, this underlines that there is no agreed consensus on which proxy is the best. For instance, Larcker et al. (2007) argued that return on assets "is likely to remove the impact of governance that we are trying to estimate" if "governance structures are stable over time" whilst others disagree on whether Tobin Q is a good approximate for firm value. In the light of the above, it is to be noted that

there exists from the literature an extensive list of proxies adopted or models to estimate performance.

2.8.1. Board Structure: Board Size and Independent Directors

Corporate governance theory accepts that, the board structure will influence firm performance. The board controls the firm on behalf of shareholders and the board size is expected to affect firm's performance. But the question is "What is the appropriate size of a successful board?" On the other hand, theory argues that the board size may cause agency problems. Several researches conducted found inverse relationship between the board size and firm performance. Some researchers argue that larger boards may be less effective than smaller boards. A board of limited size is expected to be more performing than a bigger one due to better communication and decision making process. On the contrary, some researchers also argue that small boards may lack the advantage of providing expert advices in larger numbers. (see Adams et al. (2010), Doğan and Topal (2015) for a survey of the literature on boards of directors)

Qualification of board of directors and size of board has been considered important in corporate governance literature. The relationship between board independence, board size and firm performance is one of the most studied relationships in the literature.

Cheng (2008) in his article suggest that larger boards are less efficient and slower in decision-making because it is more difficult for the firm to arrange board meetings and for the board to reach a consensus. He also argues when the board size is bigger it will be easier for CEO to have a dominant on the board and increase the CEO power in decision-making. In addition, some studies document a negative association between board size and firm performance (Yermack 1996; Eisenberg et al. 1998).

Lipton and Lorsh (1992) in their early study pointed out that small board would be more effective due to their decision mechanism. Yermack (1996) also found negative relationship between the board size and performance in his empirical research in which he observed 452 US firms during 1984-1991. Bennedsen et al. (2008) examined

6.850 Danish firms for boards with 6 and more members and found no positive relationship between board sizes and firm performances (ROA). Ammari et al. (2014) employing dynamic panel system examined board structure (board size, independent members) of 40 French firms listed on the SBF 120 during the periods of 2002-2009. They used ROA, ROE, Tobin's Q and Market to Book ratio as measurements. They found a strong negative relationship between board sizes and performances.

Abdullah and Page (2009) studying the relationship between board size and performance indicators declared that larger board sizes are positively related to market to book ratio. Companies with larger boards had low ROA and sales to assets ratios. In sum, they concluded that, companies with larger boards or a higher proportion of independent directors have no lower risk of large adverse share price movements than others. As one of the aims of appointing independent board members is to reduce the incidence of strategic mistakes, more investigation of the role of independent directors in strategy making is warranted.

In corporate governance theory, there is a tradeoff between more information and more effective decision-making. Bigger boards bring more (sources of) information but make coming to a collective decision more difficult. An optimal board is one with the size and composition that adjusts this tradeoff to maximize firm value. However, according to Demsetz (1983), looking across firms, there should be no relation between board structure and firm performance. The evidence is mixed.

Wo and Phan (2013), finds empirical evidence to support the view that a board size will contribute negatively to firm's performance for Vietnam's listed firms.

Fernandez (2014) in his recent study also found a strong negative relation between performance and board size. He analyzed the sample of firms that constitute the EUROSTOXX50 Index. He used ROA, ROE and Tobin's Q as performance indicators.

Obradovich and Jill (2013) stated in their research that "larger board size negatively impacts the value of American firms however financial leverage and firm size positively impact the value of American firms."

Andersen et al. (2004) showed that the cost of debt is lower for larger boards, presumably because creditors view these firms as having more effective monitors of their financial accounting process.

Zakaria et al., (2014a) in their recent study presented the relationship between board governance and firm performance of the Malaysian listed trading and services sector by using panel data analysis with random effects model. They examined 73 firms for the period of 2005-2010. Considering the effect of investment opportunities, firm age, leverage and firm size, they found rather different than the general argument that board size positively influences firm performance. Board independent and foreign board members had insignificant effect on firm performance. The firm performance was also negatively influenced by leverage and firm size. Additionally and surprisingly, during the crisis period (2007-2008), firm performances were negatively affected by board independence.

Guest (2009) examined the impact of board size on firm performance for UK listed firms over 1981-2002. He found that board size has a strong negative impact on profitability, Tobin's Q and share returns. He surprisingly found this result is strongest for large firms, which tend to have larger boards. He attributed this result to the problems of poor communication and decision making which undermine the effectiveness of large boards.

There are other opposite assessments on the relations between board size and firm performance as well. According to one assessment, if the size of board is smaller it provides efficiency for quick and right decisions that positively affects firm performance (see Jensen, 1993; Yermack, 1996). On the opposite side, Coles et al., (2008) argue that, if the size of board is bigger anonymous decisions will be wiser and more effective. But this result is valid only for complex (large) firms not for simple firms.

There is a wide acceptance in the corporate governance literature that effective boards are composed of bigger proportions of independent members. This argument is mainly supported by agency theory since it is actually a control-based theory. One of

the primary duties of the board is to serve as a monitoring authority (Fama and Jensen, 1983).

There are several studies showed a positive relationship between independent board members and firm performance. For example, Mak and Kusnadi (2005) stated that increasing number of independent members on the board helps in enhancing firms' value. Weisbach (1988) also points out that the higher the number of outside directors sitting on the board, the stronger would be the corporate governance of the firm. It is believed that independent board members are an important component of good corporate governance.

The question for the independent members is "whether independent members can add value to the firm or not". Independent members are assumed to add more value to the firm. Therefore corporate governance suggests that increase in the number of independent members should increase firm performance (Ammari et al., 2014). Nicholson and Kiel (2007) argued that inside directors better understand the business than outside directors and so can make better decisions. Rashid et al., (2010) argued that there is a greater information asymmetry between inside and outside independent directors due to the lack of day to day inside knowledge that would effectively limit the ability of outside independent directors in controlling the firm due to lack of support of the inside directors.

On the other hand, there are arguments on independent directors since the way of their election is still unclear. Because, controlling shareholders can use their power to select independent members or independent members cannot behave as independent as they were expected due to economical reasons. In some other cases, independent directors could influence firms to increase in equity financing which lead transfer of wealth from shareholders to debt holders.

Bhagat and Bolton (2009) studied the effects of corporate governance on firm performance in America by evaluating the operating performance before and after the Sarbanes-Oxley Act (SOX; launched in 2002). They found a negative and significant relationship between board independence and operating performance during the pre-

2002 period, but a positive and significant relationship during the post-2002 period. They concluded that agency cost is the most important issue to deal with.

Yammeesri, and Herath (2010) raised doubts about the ability of non-executive directors in monitoring firm management and found no conclusive evidence in their capabilities either in increasing or decreasing the corporate performance. In the case of Thai firms, no evidence was found to confirm that the existence of independent directors is significantly related to firm value.

John and Senbet (1998) in their article argued that boards of directors become more independent as the proportion of independent members (outside managers) increases. As opposed to this argument some researchers such as Fosberg (1989) found no relation between the proportion of independent members and various performance measures. Bhagat and Black (2002) also found no relation between proportion of independent members of board and ROA, asset turnover and stock returns.

In his study on Taiwan, Jui-Lin (2011) discussed the impact of duality and board structure in corporate governance on firm performance by using Ordinary Least Squares (OLS) as regression model. As result, she showed that regarding Tobin's Q, independent members have a positive impact while other variables have no impact on firm performance. Similar results were also achieved using ROA and ROE for analysis. Duality, board size and family controlled board members had a negative impact on ROA and ROE.

2.8.2. Ownership Structure

Ownership structure is important in corporate governance debates because the ability of firms to carry out their stakeholders' needs is tightly related to ownership structure. From a firms' perspective, ownership structure determines the firms' profitability (Javid and Iqbal, 2008, p.643). The relationship between ownership structure and firm performance is empirically examined by Jensen and Meckling (1976) and Sleifer and Vishny (1986).

Before we start, we should know what is ownership structure? Who are these shareholders: family, individual, worker, manager, institutional shareholder, or foreign enterprise? In this study we concentrated on the foreign ownership and free float as corporate governance variables and its effects on firm performance.

Ownership structure in developing countries is considered as one of the main triggers of profitability. Foreign ownership or institutional shareholders instead of family share or block holders affect the control and management of the firm. These are essential parts of corporate governance structure. The choice of a family member as manager can have a significant impact if the individual does not have the experience or talent to run the firm.

La Porta et al., (1999) show that the countries with weak legal environment, the families or certain shareholders try to maintain large positions in their firms which results in concentration of ownership. As regards the effects of foreign ownership on firm performance, it is argued that the high productivity was observed because they are concentrated in high productive sectors (Javid and Iqbal, 2008). Additionally, foreign owned firms are strong in monitoring which helps to close the gap of inefficient monitoring of domestic institutions. Foreign ownership is important because of their representation on supervisory board. Their existence in board is assumed to create a strong incentive for managers to make value-maximizing decisions.

Grant and Kirchmaier (2004) studied on the firms across Europe and showed that ownership has a significant impact on firm performance. They documented for Germany and Spain that widely held firms significantly outperform those under legal control. On the contrary, Demsetz and Villalonga (2001) found no statistically significant relation between ownership structure and firm performance.

Salami (2011) investigated ownership structure and its effect on company profitability. He used panel data regression models in his study and concluded that firms with low ownership concentration showed low firm profitability. This result supported the findings of Sorensen (2007) who examined the effects of ownership dispersion on cost efficiency. Pagano et al. (1998) in their study found an insignificant

negative relationship between ownership structure and firm performance by using panel data regression analysis.

Heibatollah et al., (2009) studied on Chinese listed firms and their result showed that ownership concentration and board independence have a positive impact on firm performance and valuation. They also found that firm value increases with foreign ownership.

Foreign ownership is given importance in corporate governance studies. A foreign ownership of a company is assumed to enhance firm's reputation and firm's value. The foreign ownership is expected to give more importance to monitoring and transparency. Additionally, a company with foreign owners is assumed to have more successful financial risk management. On top of it, having at least one foreign member on the board is generally seen as a greater signal of firm's commitment to corporate governance principles. Zakaria et al., (2014a, p.5) states that, "This is because conflict of interest is lesser with the foreign board members who are more independent than the local board members."

Dwivedi and Jain (2005) in their research for India concluded that firms with high foreign ownership structure have high market value than the others.

Hu and Izumida (2008, p.77) concluded that concentrated ownership is associated with the benefits of better monitoring and the costs of the expropriation by large shareholders. However, in Continental Europe and East Asian economies, with a high average ownership concentration, empirical studies find similar results that block holders have a positive effect on corporate performance.

2.8.3. Leverage

Leverage is generally taken as a control variable which is used frequently in the studies to test the effect of corporate governance on firm value. Leverage is an important ratio due to its influence on firm value via interest and tax shield effect. It is assumed that the companies use the debt funds more effectively. The theory says that

financial leverage is among the means for enhancing the financial performance of a company as well as shareholders' return. (Kannadhasan and Aramvalarthan, 2014)

Leverage is beneficial during growth phase of a firm. However, if debt increases the optimum level it will distort the ROA and ROE during normal period.

We employed leverage ratio in our study because the firms need borrowed money to invest in securities and to expand over and above the money provided by shareholders. The effect of financial leverage differs from country to country due to different economical structures.

Weill (2003) in his study found some mixed empirical evidence on the relationship between leverage and corporate performance. For Italian firms he found negative relationship oppositely he found positive relationship for firms in France and Germany. Majumdar and Chibber (1999) tested the relationship between leverage and corporate performance on a sample of Indian companies found negative relationship between leverage and corporate performance.

Vo and Nguyen (2014) studied on firms listed in Vietnam stock exchange to examine the interrelationship among managerial ownership and leverage and dividend policies. They employed 3 stage Least Squares approach and used sample of 81 listed firms for the period 2007-2012. By using Leverage (total debt/total assets) as a dependent variable they showed that the relation with managerial ownership and dividend are negative and significant. They also found a positive relationship between free cash flow and leverage which is theoretically expected. They found another positive relationship between size and leverage.

Dessi and Robertson (2003) found that there existed a positive relationship between leverage and financial performance.

It is assumed that, good governed companies should have easier access to outside financial sources than the others. Hence, if they need loans for working capital or investments they can easily raise the amount. Therefore, we should expect positive relationship between leverage and corporate governance. However, it should be considered that higher debt ratio negatively impacts firm performance and firm value.

Thus, highly leveraged firms must show better performance; otherwise their managers would be replaced.

We employed two measurements to analyze the effect of leverage on firm performance which are leverage ratio (total debt to total assets) and financial debt ratio (total financial debt to assets).

2.8.4. Models used in Corporate Governance Studies in Different Countries

There are variety of models used in the studies that searched the relationship between corporate governance and firm performance. The common problems of the studies are generally described as finding data and establishing best models. Studying with a limited number of firms and limited period of time make the results open to question.

In this section we searched for the studies done in different countries to understand the models used and results concluded.

Hermes and Katsigianni (2011) investigated differences of corporate governance practices across companies in Greece in order to explain variations in performance. They used data from 124 firms listed on the Athens stock exchange for the year 2007 and constructed an index measuring company-specific corporate governance. Employing simple OLS and 2OLS analysis and using data for 2004-2007, they found that better governed companies show higher performance, measured by company valuation (Tobin's Q) and operating performance (ROA).

Bohren and Odegaard (2001) used data from all non-financial Oslo Stock Exchange (Norwegian) firms for the period of 1989-1997 and found that ownership structure matters for economic performance. They used multivariate regression model for tests. According to their result, insider ownership is almost value-creating, ownership concentration on the contrary destroys value, and direct ownership is superior to investing through intermediaries like institutions. Additionally they pointed

out that the value of the firm decreases with increasing board size and when firms finance with more debt and pay higher dividends.

In his study in India, Aggarwal (2013) used sample of 50 Indian companies listed on S&P CNX Nifty 50 Index. He used s series of statistical tools like descriptive statistics, multiple regression, correlation and tests of significance. He found that governance rating has a positive but insignificant impact on corporate profitability of firm. Further, he found that corporate profitability has an insignificant positive impact on governance rating of firm.

Amba (2010) studied on Bahrain firms listed in Bahrain Stock Exchange to examine the impact of corporate governance variables on firms' financial performance. He employed proportion of independent directors, concentrated ownership structure, institutional investors, and leverage ratio as corporate governance variables. He used multiple regression analysis to test the relationship between firms financial performance measured by ROA and governance variables. He found that corporate governance variables influence firms' performance. Proportion of independent board members and leverage has negative influence but proportion of institutional ownership has positive influence on firms' financial performance.

Chaghadari (2011) studied the relationship between corporate governance and firm performance in Malaysia by using board independency, ceo duality, ownership structure and board size. Applying the linear multiple regression as statistical tests, he found that there is no significant relationship between board independency, board size and ownership structure as independent variables and firm performance (ROA) as dependent variable.

Applying the multiple regression models to test the significance and of corporate governance and firm profitability of firms listed in Karachi Stock Exchange of Pakistan for the year 2005-2009, Khatab et al. (2011) showed that leverage and growth have a positive and significant relationship with Tobin's Q and ROA. However, growth has a negative and significant effect and firm size is insignificant.

Luxi et al., (2013) studied on China. In their paper they searched the relationship between corporate governance and firm performance by employing corporate

governance index and firm performance index for the period 2007-2011. They showed a positive association between corporate governance and performance with the evidence that size, leverage and industry affect the performance.

A surprising result was revealed in a study by Bollaert et al., (2010) for France. They analyzed the link between corporate governance and performance in French listed firms for the term 2005-2007. Using a Carhart four-factor analysis, they showed that firms with higher levels of corporate governance quality underperform those with lower levels of quality by an average of 1.5% per year.

Zheka (2006) investigated the impact of corporate governance on firm performance for listed firms in Ukraine for the years from 2000-2002. He constructed an index of corporate governance containing shareholder rights, transparency disclosure, board independence and chairman independence. He used two-stage least squares (2SLS) model. As result he found that corporate governance predicts firm performance. He documented that there is statistically strong effects of shareholder rights, transparency and board independence on performance.

Drobetz et al., (2003) studied on German listed firms to investigate the effect of corporate governance on firm performance. They constructed a corporate governance rating for German public firms. Using a time series regression model, they found a positive relationship between governance practices and firm valuation. High corporate governance rated firms earned abnormal returns of around 12% on an annual basis during the sample period of 1998-2002.

Using a survey data set on the corporate governance practices of listed Korean firms, Hwang et al., (2004) found that firms with strong corporate governance practices are associated with higher firm value and higher dividend payments too.

Black at al., (2008) also confirmed the Hwang at al.'s results. In their study they used panel data on Korean public firms over 1998-2004. Firms with higher scores on Korean corporate governance index were found to have higher Tobin's Q.

Ongore and K'Obonyo (2011) investigated the relationship among ownership, board and manager characteristics and Firm performance of 54 listed companies at the Nairobi Stock Exchange, Kenya. They used logistic regression for testing the model.

They presented evidence of significant positive relationship between foreign, insider, institutional and diverse ownership forms and firm performance while they showed a significant negative relationship between ownership concentration and firm performance.

Kowalewski (2012), using corporate governance index, investigated the relationship between corporate governance and firm's performance and dividend payouts during the financial crises in Poland. He used data of 298 non-financial companies listed on Warsaw Stock Exchange in the years 2006-2010. He employed a panel data regression model for test. He concluded that there is a positive association between corporate governance and firm performance measured by Tobin's Q. He also showed that higher corporate governance leads to an increase in cash dividends. Additionally he found that higher during the financial crises corporate governance is positively related with ROA.

Garay and Gonzales (2008) searched for Venezuela. They examined the relationship between corporate governance and firm value by using a multivariate regression for model. They constructed a governance index for listed firms. Assuming the investor protection is weak in Venezuela, they showed that an increase of 1% in the governance index results in an average increase of 11,3% in dividend payouts, 9,9% in price-to-book ratio and 2,7 percent in Tobin's Q.

2.9. Corporate Governance Literature in Turkey

Although the corporate governance practices are relatively new in Turkey there are already several and important studies on the issue published. The issue has been investigated in different aspects.

Gursoy and Aydogan (1999) in their study observed that increase in ownership concentration in listed firms increase their financial performance by using panel data analysis. Çıtak (2007) in her study found positive relationship between ownership structure and price to book value ratio.

Aydın et al. (2007) investigated the performance of foreign owned firms listed on Istanbul stock exchange in their study. They used operating profit margin, ROA and ROE as dependent variables for the period 2003-2004. The results reveal that the firms with foreign ownership operating in Turkey perform better than the domestic ownership in respect to ROA.

Yıldırım and Demireli (2009) concluded in their study that increase in the ownership concentration only increased Tobin's q and conversely ROA, net profit and ROE decreased.

Gurbuz and Aybars (2010) searched the financial performance of the companies with foreign ownership listed on the Istanbul Stock Exchange. They used panel data analysis with the sample of 205 non-financial firms for the period of 2005-2007. They concluded that foreign ownership improves firm financial performance in Turkey.

Mandaci and Gumus (2010) found conflicting results on the effects of managerial ownership and ownership concentration on firm performance.

Şengür and Püskül (2011) examined the link between board of directors' structure and firm performance in Turkey for the year 2009 and used 24 firms listed in ISE corporate governance index. As result they found that firms with audit committee and corporate governance committee have higher returns. However, firms with independent chairman for all of its committee's have lower returns. Additionally, firms with independent member in board have lower ROA and ROE.

Bayrakdaroglu (2010) used the figures of Istanbul Stock Exchange firms to examine the effect of ownership structure on firm performance. He used Tobin's q, ROA and ROE as dependent variables while ownership structure, floating rate, foreign ownership and managerial ownership were taken as independent variables. Panel data regression analysis was used. He concluded that ownership concentration and floating rate effects financial performance. On the other hand he found that foreign ownership and managerial ownership variables have no effect on financial performance as opposed to expectations.

Ünlü et al. (2011) investigated the relationship between managerial ownership and firm performance of listed ISE Turkish firms for the period 2004-2008. They used

panel data analysis. They found no significant relationship between managerial ownership and firm performance with respect to Tobin's Q.

Süer and Köseoğlu (2012), using 33 firms listed in ISE and in corporate governance index, evaluated the effect of corporate governance practices on firm value and performance for the year 2009. They used descriptive analysis for comparisons and hypotheses tests. They searched the relationship between corporate governance index and firm value. Two proxies were used; price/book value and Tobin's Q ratio. As result they showed that corporate governance index and Tobin's Q has a positive but weakly significant relationship, however, corporate governance index and price/book value has a positive but insignificant relationship. Additionally, they searched the relationship between leverage and price/book value and found a significant relationship.

Karaca and Eksi (2012) investigated the relationship between ownership structure and corporate performance of 50 companies listed in manufacturing sector on the Istanbul Stock Exchange during the 2005-2008 period. They used ownership concentration as corporate governance factor. As result they found a positive relationship between ownership and firm performance.

Akçay and Aygün (2014), in their article, investigated relationship between ownership structure and firm performance. They used two measures to test the degree of relations. One is accounting based (ROE) and another one is market based Tobin's Q. Their research was conducted for the period 2009-2010 and data for the 117 Istanbul Stock Exchange companies was utilized. As a result, they found positive and significant relationship between the ownership structure and Tobin's q. Conversely, they found no significant relation between ROE and ownership structure.

Sençıtak (2007) for example, analyzed in her thesis, corporate governance and its effects on firm performance empirically and theoretically. She used the firms quoted at ISE (BIST). She finds that there is a relationship between corporate governance and firm performance at ISE for manufacturing firms. In addition, the relationship direction is positive.

Yıldırım (2007) in his PhD thesis, studied ownership structure and control mechanisms and its effects on financial performance. In this framework he employed 44 manufacturing firms listed in ISE 100 and searched the effects of CG practices on financial performance. He associated variables of ownership structure with financial performance indicators. As result, he showed that ownership structure has a negative relation with Return on Assets (ROA), Return on Equity (ROE) and Net Income (NI) but has a positive relation with Tobin's Q and Market Value of the firms.

Gündüz and Tatoğlu (2003) studied foreign ownership's effect on firm performance. The result showed that foreign ownership affects the performance of firms regarding to ROA, but they observed no effect in other financial ratios.

In the study by Dağlar and Pekin (2011), it is analyzed that in which way the manipulation risk in financial data is affected in the companies applying CG principles. They employed the firms listed in ISE CG index. As result, they indicated that, increasing corporate governance structure in the firms would diminish manipulation risk in financial data.

Gönenç (2006) studied on relationship between ownership concentration and firm performance. Using simultaneous equation systems (OLS and 2SLS) he analyzed 185 Turkish industrial firms listed in ISE for the period of 1992-1998. He found that ownership concentration is affected by the firm accounting performance rather than it affects the performance.

Sakarya (2011), in his study, studied relations between stock returns and announcement of rating notes of the firms which was the first time taken in the ISE CG index in 2009. Event Study method is used in the study and it is found that there is a positive relation between announcement of the good CG rating note and stock returns.

Yenice and Dolen (2013) investigated whether corporate governance rating affects market value of the firms listed in corporate governance index. They observed the market values of the firm's 30 days prior to and 30 days after the disclosure date of the ratings and these values are compared with the corporate governance ratings. Employing Wilcoxon Signed Rank Test and Paired Samples T-Test for the period

2007-2011, they found that there is a statistically significant relationship between corporate governance rating and market values.

In Dağlı, Ayaydın and Eyüboğlu (2010) study, considered 2007 September – 2009 November period CG index according to risk-return assessment with daily data, it is found that firms included in the CG index do not provide additional income to the investors and additionally they lose potential income due to their risk choice.

Karamustafa, Varıcı and Er (2009), finds in their study that, the performance of the firms listed in the ISE CG index slightly increased aftermath their joining in to the index.

In their study Çarıkçı, Kalaycı and Yaşar (2009) concluded that, in the context of ISE listed companies there is no relation between firm performance and CG consistency.

Tanrıöven et - al (2006) searched the relations between CG and firm performance in their study. In the study relations between ownership structure and the ratios that are used to measure banks' performance in the ISE listed commercial banks. They employed variance analysis. As result, they found no differences between family owned and holding owned banks however multy-partner and monitored banks differed from other commercial banks.

Coşkun and Sayılır (2012) study did not reach a conclusion that support the hypothesis of better corporate governance is associated with higher firm values and better performance. They employed corporate governance scores of 31 companies published by Corporate Governance Association of Turkey and their financial data. Regarding corporate governance and firm valuation, corporate governance was not found to have a statistically significant relationship with Tobin's Q. Regarding corporate governance and profitability, corporate governance was not to have a statistically significant relationship with ROE or ROA.

Turan and Bayyurt (2013) used panel regression analysis in their study to examine the relationship between ownership structure and performance for the term 2008-2011. They employed data of 100 manufacturing firm listed in ISE. According to their analysis, board size, number of members at supervision board and number of

independent board members has positive effects on firms' performance. On the other hand, proportion of biggest shareholder and free float rate have negative impact on performance. Additionally, they found no significance between foreign ownership and firm performance.

Şengür (2011) analyzed in her study whether properly implementing corporate governance principles make difference in firms' performance. She compared firms before and after they entered corporate governance index. She used corporate governance index companies and ISE 50 firms for analysis. Using ROA and Tobin's Q as performance measures she resulted that there is no significant difference in performance measures.

Aghabeigi and Öndeş (2015) studied on 60 firms listed in ISE for the period 2008-2012 to examine the effects of corporate governance factors on firm value. They used Tobin's Q as a measurement criterion of firm value. They employed multivariate regression model in panel data analysis and used the results of descriptive statistics. They revealed that corporate governance factors has positive and significant relationship with firm value of ISE listed firms. ROE controlling variables has positive and significant relationship with dependent variables. However, other control variables, size and leverage, are not found significant.

Additionally, Many researchers found positive relations between ROA, ROE and corporate governance (for example; Gürbüz et al. 2010). In their early research Varis et al. (2001) found positive relation between corporate governance and firms' profitability by using Istanbul Stock Exchange (ISE) data. In another research of Karamustafa et al. (2009) which investigated the relations between corporate governance variables and firm performance by using asset turnover, ROA and ROE they also found positive relations. They compared the firms prior to and after corporate governance index performance. On the contrary, Eyuboglu (2011) found no difference between monthly average returns after and before entering into the ISE index of corporate governance of companies.

CHAPTER 3. RESEARCH METHODOLOGY

3.1. Firm Performance Variables

Firm performance in the corporate governance literature is based on the financial indicators and firm value. There are many measures of firm performance. Kiel and Nicholson (2003), defines two set of financial measures of firm performance as accounting-based and market based measures. Most commonly used accounting based measures are return on assets (ROA), return on equity (ROE) and earnings per share. Market based measures are generally referred to market to book ratio and Tobin's Q.

Both accounting and market based measures have been used to analyze the relationship between corporate governance and firm performance (Heenetigala, 2011). Tobins'Q is a market based measure of profitability widely used in corporate governance studies as a proxy for firm performance (Agrawal and Knoeber, 1996). It is defined as the ratio of market value of assets to the replacement value assets which shows the financial strength of a firm. Tobins' Q is accepted as good if it is being greater than one. Although it is widely used in corporate governance studies, we did not employ Tobins' Q in our study as a performance indicator since there are several studies already used this indicator. Instead we used market to book ratio.

Return on Assets (ROA) is another performance measure widely used in the literature and highly representative as an accounting based measure. It shows the efficiency of assets employed. ROA shows the earnings that firm has generated from its investments in capital assets. Since managers are responsible for the operation of the business and utilization of the firm's assets, ROA is a measure that allows users to assess how well a firm's corporate governance system is working in securing and motivating efficiency of the firm's management (Epps and Cereola, 2008).

Return on equity (ROE), is another important measure of firm performance used in corporate governance studies. The primary aim of the firm is to make profit (Heenetigala, 2011). Return on equity is the most acceptable ratio in order to measure profit. It is defined as the net income divided by common equity.

We also used ebitda (earnings before interest, tax, depreciation and amortization) and leverage ratio (total debt to total assets) as performance indicators in our study.

Empirical researches on corporate governance use either market-based measures or accounting-based measures to assess firm performance. Klein (1998) uses return on assets (ROA) and Lo (2003) uses return on equity (ROE) as an operating performance indicator. Brown and Caylor (2004b) use ROE and ROA as their two operating performance measures. We can measure the operating performance of a firm through the ROA ratio which shows the amount of earnings have generated from an invested capital assets (Epps and Cereola 2008). Managers are directly responsible for the operations of the business and therefore the utilization of the firms' assets. Thus, ROA allows users to assess how well a firms' CG mechanism is in securing and motivating efficient management of the firm.

In corporate governance related studies, firm size, firm age, institutional ownership, foreign ownership, ownership concentration, supervisory board, board size, proportion of independent members in the board and the board subcommittees are argued to be the positive factors of performance of the companies.

3.2. Data Collection

Since the main aim of this thesis is to conduct an investigation of the corporate governance practices of firms listed in Istanbul Stock Exchange (BIST) and their effect on firm performance we used data of BIST 100, and CG index companies in BIST, Turkey. BIST data are published daily. We have CG Index data since 2005 in BIST. We also have CG ratings for every individual company. In this study, BIST 100 companies and CG Index companies which contain 50 firms are selected.

BIST CG index contains aspects of corporate governance practices related to the board of directors, board compensation, the audit committee, shareholder rights, and disclosure and transparency. The index is created in such a way that higher values of the index mean better corporate governance practices.

We removed banks, holdings and financial firms from the list due to their different asset structure and their operational readiness to corporate governance applications. Additionally we also removed some firms from the list to prevent double counting since some of those firms were in both list. Thus, a sample of 92 companies was selected from a total of 150 companies to study. The following was used respectively for independent variables; board size (number of board members), board independence (number of independent board members), share of foreign investors, floating rate, ebitda, net sales, asset size, leverage ratio and for dependent variables Return on Assets (ROA), leverage, financial debt to total assets, ebitda and price to book value (pbv).

We used data for the period 2007-2013. Data mainly collected from BIST sources via Finnet data publishing company's facilities. Some of the data have been collected from the firms' audit reports. We used firms' yearly fiscal reports to determine the size and composition (independent members) of the board. Because of number of board members and independent number of board members do not change by years we preferred to use a ratio instead of figure. For doing this, we also collected number of managerial staff for each year of studied period. These figures were collected from yearly fiscal reports of firms. It has been the most time consuming stage of the research. After all we calculated the ratio of number of board members / number of managerial staff and number of independent board members / number of managerial staff for each year.

3.3. Design of the Variables and Hypotheses

There are many studies about corporate governance and firm performance. The studies were first made for developed countries and then developing countries. Since

early 2000 there have been researches in Turkey about consistency of listed companies to the corporate governance rules. However we see that the studies made on relations between firm value, firm performance and corporate governance applications are rare. Additionally, methodology and data collection are still subject of limitations.

We aim in this study to contribute all stakeholders (shareholders, investors, managers) and researchers. On top of it, we hope to contribute corporate governance studies related to firm performance and firm value and to guide new studies with new characters.

It is clear that there is no method of measuring corporate governance levels of firms. Therefore, there are several and different studies trying to measure corporate governance level of companies.

The relation between corporate governance and firm performance seems very clear and simple at first instance. Since we attribute positive specialties first expectation from corporate governance practices is to increase firm performance. However it is difficult to determine and show in econometric models the relation between corporate governance and firm performance. It is because corporate governance is not a concept that can be simplified into some basic parameters which are easy to determine and measure. Corporate governance practices are changing according to countries, cultures and even sectors. Countries accept different rules and legal frameworks. (Işık and Saygılı, 2006; p.163).

In our study, we employed BIST 100 listed companies and BIST CG Index companies. Our variables were selected from previous empirical works. The set of variables include; board size, board independence, leverage (total debt/total assets), ownership structure (foreign ownership and floating rate), ebitda and firm size. ROA and ebitda are considered as accounting measures of corporate governance and price to book value (pbv) is considered as market based measure.

Our main hypothesis is; corporate governance variables (board structure and ownership structure) have a significant impact on firm's financial performance.

3.3.1. Board Size and Board Independence

The board of directors is the center for monitoring and rewarding (penalizing) managers. However, this is not the only role that boards play. They also act as advisors providing input into strategic decision making. Our focus is monitoring, but the theory discusses that better monitoring likely means poorer advising.

Boards are typically measured by two characteristics—their size (number of members) and their composition (fraction of members who are outsiders or independent of management). Accordingly, we define a variable board size (nbmYpers - bsize), which is the number of directors that are on the board, and board independency (indpbs), which is the proportion of outsiders on the board. As mentioned earlier, these two variables were used as ratio. Ratios were calculated as: number of board members / number of managerial staff and number of independent board members / number of managerial staff.

In corporate governance literature, it is generally believed that larger board size negatively impacts the performance of the firm. (see Lipton and Lorsch (1992) and Jensen (1993)). Similarly, Mak and Kusnadi (2005) found a negative relationship between the board size and firm value.

On the opposite side, Kiel and Nicholson (2003) pointed out in their study, from an agency perspective, larger companies require bigger boards to monitor and control the managements' action.

In our study we considered the board size as a variable that can impact corporate governance practices and firm performance.

As for the relation between board independence and firm performance, if outside directors are independent and have professional ability, they are supposed to be more objective to make decisions and monitor managers. Results of previous empirical studies do not indicate any statistically significant positive relationship between the degree of board independence and better financial performance.

Bhagat and Black (2002) for example, found no positive correlation between the degree of board independence and firm performance (Tobin's Q, return on assets,

sales to assets ratio and market adjusted stock price returns), controlling for a variety of other governance variables, including ownership characteristics, firm and board size, and industry.

On the other hand, a few studies provide evidence that firms with a high percentage of independent directors may perform worse.

It is possible to ask the question of causality of relationships in this case. For example, it is possible that companies with poor previous performance are more likely to adopt corporate governance recommendations rather than the adoption of recommendations leading to changes in performance.

According to Allen et al. (2000), the effectiveness of independent directors as board governance mechanism is still unclear especially in a country where the firm controlling shareholders will use their power to select members of the entire board of directors.

Overall the majority of research finds either no relationship or a negative relationship between independence and performance. (Abdullah and Page, p.22)

H1: There is a negative relationship between board size and firm performance in Turkish market.

H2: There is a negative relationship between board independence and firm performance in Turkish market.

3.3.2. Leverage and Financial Debt to Total Assets

Leverage is considered as an important factor for firm value. Additionally, corporate governance literature argues that leverage is affected by good governance. There is a relationship between corporate governance and leverage. Good governed companies are believed to have lower rates and easy access to funds.

Cheng and Tzeng (2011) studied on 645 firms listed in the Taiwan Securities Exchange from 2000-2009 and found a positive relationship between leverage and

firm value. Sharma (2006) examined Indian manufacturing firms and showed that there is a direct relationship between firm value and financial leverage.

Leverage is used as a variable in several studies such as Weill (2003).

We employed two leverage ratio in this thesis ; total debt / total assets and total financial debt/total assets.

H3: There is a positive relationship between leverage and firm performance in Turkish market. (or, leverage is positively affected by foreign ownership and board size)

H4: There is a positive relationship between financial debt/total debt ratio and firm performance in Turkish market.

3.3.3. Ownership Structure

Modern listed companies always have a widespread ownership structure. Corporate governance theory argued that large ownership brings greater market liquidity and better risk-diversification to companies. However, this wide spread ownership structure would create the problem of free-rider, which reduces the quality of corporate governance mechanism. Thus, the large ownership should be appropriately concentrated in large shareholders, such as institutional investors or foreign shareholders. Institutional shareholders or foreign shareholders can effectively monitor managerial teams to increase the quality of corporate governance, thus driving managerial teams to increase firm performance. From this framework we assumed foreign shareholders' positive effect in the firms' performance. We also investigated the affect of shareholder structure if firms are publicly open.

On the contrary, the inappropriate ownership concentration will negatively affect firm performance, since it triggers the conflict of interest between large and small shareholders. Similarly, large shareholders impair the firm performance, since they appoint their affiliated people to work as managerial staffs of the company (Yeh, 2005).

Fama and Jensen (1983) suggest that boards that are structurally more independent from management are better able to control management decision-making on behalf of shareholders.

Firms with foreign board members are able to enhance the firm's reputation and value in the financial market. By having at least one foreign member on the board, it is a signal of greater company's commitment to corporate monitoring and transparency. Firms with foreign board members, regardless of their number, showed better results in terms of handling risk, and in terms of reducing risk.

Consistent with the existing literature, we use the percentage of shares owned by foreign shareholders as a proxy for corporate governance.

Empirical studies on foreign ownership concluded that, to a certain extent, foreign shareholders contribute to the supervisory activities (control) of a firm's management.

H5: There is a positive relationship between foreign ownership and firm performance in Turkish market.

H6: There is a positive relationship between floating rate and firm performance in Turkish market.

3.3.4. Firm Size

Another controversial issue in corporate governance literature is firm size. Firm size is generally assumed to have positive effect on firm performance. Gill and Mathur (2011) for example, examined 91 Canadian manufacturing firms listed in Toronto Stock Exchange for the period of 2008-2010 and found that board size negatively but firm size positively impact the firm value.

As we saw in several studies related with the issue firm size can also be measured by total assets. We assumed in this thesis that asset size have an impact on the variables used in the model.

H7: There is a positive effect between firm size and the firm performance in Turkish Market.

CHAPTER 4. MODEL and STATISTICAL ANALYSIS

The purpose of this chapter is to describe the research methodology of this thesis. Since we aimed to examine the effect of corporate governance practices on firm performance, the design of the model was based on prior researches into these relationships. In this chapter we described the model used in this thesis, data collection method, and the variables used to test the hypothesis.

4.1. Panel Data Analysis

According to the hypotheses given above we constructed a regression model for testing empirical analysis. The characteristic of the sample is cross sectional and of time series. Panel data is obtained when cross-sectional data of a variable is observed at several different times (Gujarati, 2003). Baltagi (1998; p.1) gives a clear definition for panel data method. “Panel data refers to data sets consisting of multiple observations on each sampling unit. This could be generated by pooling time-series observations across a variety of cross-sectional units including countries, states, regions, firms or randomly sampled individuals or households.”

Baltagi (2005; p.4) listed the benefits of using panel data in models :

1. Controlling for individual heterogeneity. Panel data models can control unobservable individual heterogeneity (incorrect specification leads to biased and inconsistent estimator)
2. Panel data provides more informative data, more variability, less collinearity among the variables, more degrees of freedom and more efficiency. Panel data gives rich information about cross-sectional variations and dynamics.

3. Panel data is comparably better able to study the dynamics of adjustment.
4. Panel data is superior to identify and measure effects that are simply not detectable in pure cross-section or pure time-series data. Panel data models can identify individual and time effects which cannot be identified by pure cross-section or time series data.
5. Panel data models allow us to construct and test more complicated behavioral models than purely cross-section or time-series data. Panel data models can avoid problems in time series data, e.g. multicollianearity, aggregation bias and nonstationarity.
6. Micro panel data provided on individuals, firms and households may be more accurately measured than similar variables measured at the macro level.
7. Macro panel data on the other hand have a longer time series and unlike the problem of nonstandard distributions typical of unit roots tests in time-series analysis.

Limitations of panel data sets also described in Baltagi (1998; p.2).

1. Data management of panel surveys creates problems in the designing and data collecting,
2. These include coverage problems,
3. Large parts of panel data are unbalanced,
4. Non-response (due to lack of cooperation of the respondent)
5. Recall problems (respondent not remembering correctly)
6. Frequency of interviewing (reference period problem),
7. Distortions due to measurement errors,
8. Bias problem of data set due to sample selection problems.
9. Data covering short span of time

Panel data consist of the observations on the same n entities at two or more time periods T. If the data set contains observations on the variables X and Y, then the data are denoted:

(X_{it}, Y_{it}), i = 1, …., n and t = 1, …., t

and the model is generally designed as follows :

$$Y_{it} = \alpha_{it} + \beta_{kit} X_{kit} + u_{it}$$

Where the first subscript, i, refers to the entity being observed, and the second subscript, t, refers to the date at which it is observed (for panel data analysis see Tatoğlu 2013a and 2013b)

Panels were considered as balanced and unbalanced panel. Balanced panel is defined as if variables are observed for each entity and each time period. Unbalanced panel is defined as if there are some missing data for at least one time period.

As result, we used panel data model (unbalanced) to analyze data to eliminate the autocorrelation of variables in time series and heteroscedasticity of individuals in cross section. Panel data analysis is constructed in two regression models; fixed effect and random effect.

For using panel data model we employed stata (stata v.13) statistics program.

4.2. Statistical Model

Since data have both cross-sectional dimension and time dimension panel regression techniques are preferred to model the relationship between the dependent variables and control variables. The panel data set consist of 7 years period from 2007 – 2013, with a sample of 92 listed firms at BIST.

Panel regression techniques are superior to classical regression techniques as they consider both the time dimension and cross-sectional dimension. Applying classical regression methods to a panel data may yield to biased estimates due to heterogeneity of variables.

We searched the relationship between firms' financial performance and corporate governance variables. Variables used in this empirical study include: (1) dependent variables (firm's performance); (2) independent variables; and (3) control variables.

In literature, Tobin's q, ROA, ROE are considered as performance indicators. In our study we employed ROA, ebitda, Leverage (lev), financial debt/total assets and price to book value (pbv) as dependent variables. ROA, ebitda and lev were taken as accounting base while pbv was taken as market base performance measurement.

Table 1: Concepts, measurements of variables and notations in the model

Variables	Definition	Measurement	Notation
Dependent Variables (Performance Indicators)			
ROA	Return on Asset	Net income / Total asset	roa
P / BV	book value per share	price / book value	pbv
Ebitda	income	(log) Earnings before interest, tax, depreciation and amortization in TL	ebitda
Leverage	Total leverage	Total debt / Total asset	lev
Financial debt / total assets	Financial Leverage	Financial debt / Total asset	fdta
Independent Variables (Corporate Governance Measures)			
Board Size	Board size	Number of board members / number of managerial staff	BS
Board Independent	Board independent	Number of independent board members / number of managerial staff	BI
Floating Rate	coated shares	Free float rate of total shares	orate
Foreign Ownership	Foreign investor	A dummy variable equal to 1 if foreigners own 10% or more of the shares of the company and otherwise equal to zero.	finv
Control Variables			
Net Sales	Net sales	Logarithms of firms' net sales in TL	NS
Firm Size	Firm size	Logarithms of firms' total asset in TL	FS

We used board size, board independence, proportion of tradable shares (floating rate) and foreign ownership as independent variables and firm size (assets) and net

sales amount as control variables. We used sales as control variable simply because firms with good growth opportunities usually show a higher market value (pbv).

Variables, their definitions, measurement of variables and their notations used in the model are given in Table 1.

The empirical model used in this thesis can be described as follows:

Model 1 : The relation between governance variables (floating rate, board size, board independence, firm size and foreign ownership) and firm performance (ROA)

$$ROA = \beta_0 + \beta_1 orate + \beta_2 NS + \beta_3 ebitda + \beta_4 lev + \beta_5 BS + \beta_6 BI + \beta_7 FS + \beta_8 finv + u$$

Where the dependent variable is:

ROA: Net income / total assets

Where ROA, Return on assets taken as dependent variable. Independent variables are floating rate (orate), net sales (NS), ebitda, leverage (lev), board size (BS), board independence (BI), asset size (FS), and foreign ownership ratio (finv). $\beta 1$, $\beta 2$, $\beta 3$, $\beta 4$, $\beta 5$, $\beta 6$, $\beta 7$, $\beta 8$ are regression coefficient, β_0 is a constant and u is the error term.

ROA has been used by many studies to measure for firm performance including Demsetz and Villalonga (2001), Douma et al. (2006) and Phung and Hoang (2013).

Model 2: The relation between governance variables (floating rate, board size, board independence and firm size) and firm performance (ebitda)

$$ebitda = \beta_0 + \beta_1 orate + \beta_2 NS + \beta_3 lev + \beta_4 BS + \beta_5 BI + \beta_6 FS + u$$

Where the dependent variable is:

ebitda: (log) Earnings before interest, tax depreciation and amortization

Model 3 : The relation between governance variables (floating rate, board size, board independence and firm size) and price to book value (pbv)

$$pbv = \beta_0 + \beta_1 orate + \beta_2 NS + \beta_3 ebitda + \beta_4 lev + \beta_5 BS + \beta_6 BI + \beta_7 FS + u$$

Where the dependent variable is:

pbv: Price / book value

Price to book value is a measure of market performance

Model 4 : The relation between governance variables (floating rate, board size, board independence and firm size) and Leverage (lev)

$lev = \beta_0 + \beta_1 orate + \beta_2 NS + \beta_3 ebitda + \beta_4 BS + \beta_5 BI + \beta_6 FS + u$

Where the dependent variable is:

Leverage (lev): Total debt / total assets

Leverage is measured based on debt to total assets ratio as suggested by previous researches such as Gaver, and Gaver, (1993) and Bhagat and Bolton (2009). Leverage is used as a dependent variable in Bhagat and Bolton (2009) study. In their study model is designed as follows :

Leverage= Performance + Governance + Ownership + Industry leverage + firm size + R&D Expenses + Board Size + Risk + Market to Book Value + Z Score + u

Model 5 : The relation between governance variables (floating rate, board size, board independence, firm size and foreign ownership) and financial debt to total assets (fdta)

$fdta = \beta_0 + \beta_1 orate + \beta_2 NS + \beta_3 ebitda + \beta_4 BS + \beta_5 BI + \beta_6 FS + \beta_7 finv + u$

Where the dependent variable is:

fdta : Total financial debt / Total Assets

In Chae et al. (2009) research, firm size is one of the control variables measured by using ln of total assets.

We set up model with age and foreign ownership variables in addition to the above given variables. Unit root test results indicate that age and finv contains unit root and they are not stationary. Thus these variables are excluded from the analysis. In order to use foreign ownership ratio as a variable, finv is recoded as dummy variable. A firm is considered to have foreign share if the foreign ownership ratio is

above 10%. However, considering dummy variables, according to the econometric theory, in a fixed effects model, only time varying variables can be used, the time invariant variables should be dropped. Therefore, we dropped foreign ownership (finv) variable in fixed effect models (2, 3, and 4) and we preferred to use finv variable in random effect models (model 1 and 5).

Leverage and financial debt/total assets ratio are taken as performance indicator and at the same time as explanatory variable. We assumed that leverage and financial debt would be a good variable to show the effect of corporate governance during the financial crises. Therefore, we used the data from the period of 2007-2013 which overlaps the 2008-2009 financial crisis years.

4.3. Statistical Analysis

In order to study the panel data analysis to test the hypothesis stated in the study we used stata statistical program. Before applying panel regression analysis, first variables are checked for unit root. Unit root test results are given in Table 2.

Table 2: Unit Root Test Results

Variable	Model	P-Value	Statistic	Method
roa	Intercept	0.000***	590.9445	PP-Fisher
lev	Intercept	0.000***	461.0932	PP-Fisher
pbv	Intercept	0.000***	570.8478	PP-Fisher
ebitda	Intercept	0.000***	407.5828	PP-Fisher
fdta	Intercept	0.000***	490.3708	PP-Fisher
orate	Intercept	0.000***	-3.902	Pesaran
age	Intercept	1.000	29.804	Pesaran
finv	Intercept	1.000	30.111	Pesaran
NS	Intercept	0.001***	246.4101	PP-Fisher
BS	Intercept	0.000***	290.2668	PP-Fisher
BI	Intercept	0.000***	269.4336	PP-Fisher
FS	Intercept	0.000***	285.3277	PP-Fisher

(***) No unit root. Stationary variables

Unit root test helps us to determine whether variables are stationary or not. If variables are not stationary, statistically they should not be used in the model.

We wanted to employ age and finv as a corporate governance variable in the model. However, unit root test results indicated that age and finv contains unit root and they are not stationary. Thus these variables are excluded from the analysis. In order to use foreign ownership ratio as a variable, finv is recoded as dummy variable. A firm is considered to have foreign share if the foreign ratio is above 10%.

Five different dependent variables for measuring firm performances are selected namely, ROA, LEV, PBV, EBITDA and FDTA.

4.3.1. Descriptive Statistics

Descriptive statistics have been generally used in academic studies on corporate governance. Descriptive statistics measure the central tendency and dispersion. Mean, mode, median, min. and max are the most commonly used measures of descriptive statistics. The descriptive statistics employed in this thesis consist of mean, maximum and minimum.

Table 3: Descriptive Statistics for Variables

Variable	Obs	Mean	Std. Dev.	Min	Max
roa	644	6.627165	10.6901	-81.5491	54.45779
lev	644	0.463975	0.362247	0	4.478909
pbv	644	1.769281	2.100407	0	16.63863
ebitda	567	4.440706	1.892014	-4.9359	8.509367
fdta	638	0.198909	0.199868	0	1.581668
orate	644	0.348505	0.177801	0	1
NS	628	6.298321	1.988798	-6.90776	10.65577
BS	644	0.357696	0.368717	0.028571	2.333333
BI	644	0.103587	0.11365	0.005556	0.666667
FS	638	6.781272	1.535135	2.453372	10.14259
finv	644	0.254658	0.436008	0	1

Descriptive statistics also contain the number of observations for each variable which are useful. The mean is the sum of all observations divided by the number of values. The maximum is designed to compare the highest value and the minimum is designed to compare the lowest values of the variables for the period of 2007-2013.

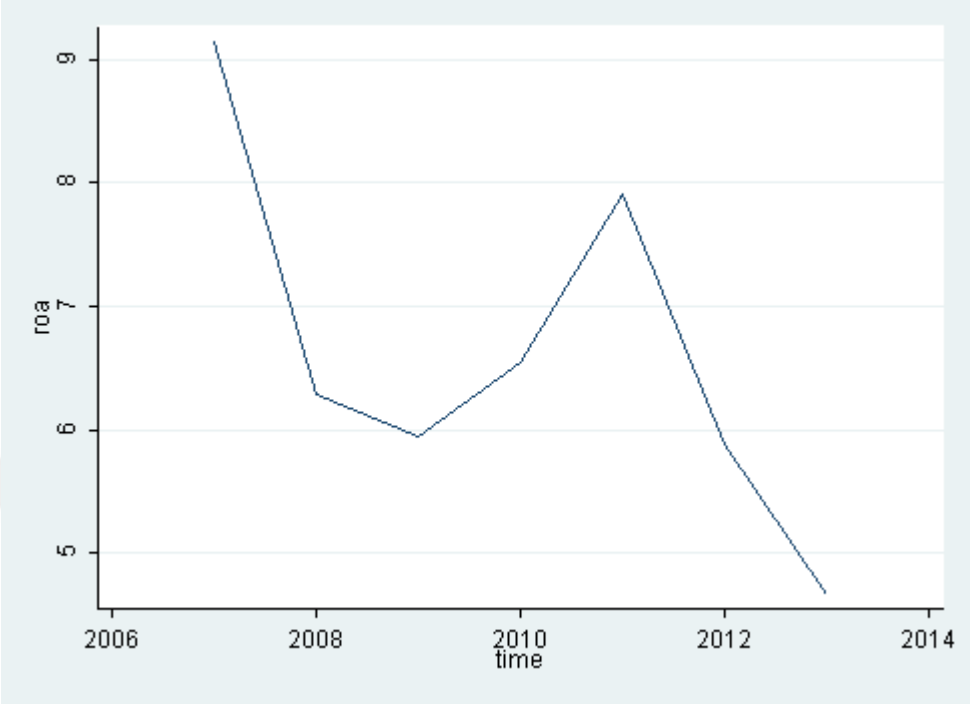
Table 3 summarizes the descriptive statistics for governance mechanisms, controls, and performance measures in our sample firms.

We should expect higher mean values for performance variables if selected companies are good at corporate governance practices. Higher mean values for ROA, pbv and ebitda indicate higher performance.

There are maximum of 644 observations and minimum of 567 (ebitda figures) observations used in the model. ROA averaged around 6,6% with a minimum value of -81% and maximum value of 54%. The Mean of leverage (lev) is around 46% which is comparably low. As a market performance indicator pbv, higher value represents a positive performance for the firm. The mean value for pbv is 1,6 and maximum value is 16.

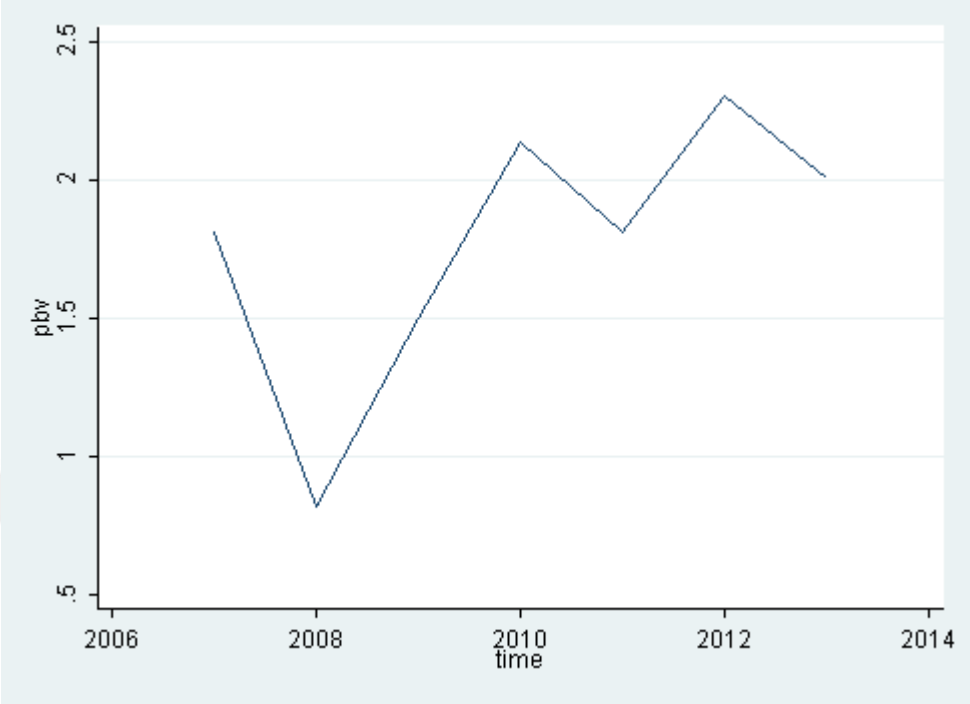
Following graphics are given to show the trends of variables during the analysis period.

ROA graphic (graphic 1) shows that there has been a dramatic down trend in the roa performance of BIST 100 and CG 50 firms during the period of 2007-2013. We can easily understand that 2008-2009 period is a financial risk period and therefore roa decreased. However, we can also interpret this development that during this financial risk period corporate governance has not been as effective as expected. Additionally, we may also say that after financial risk period firms performed well until 2011. After 2011, again roa performance of firms decreased. Assuming that BIST 100 and CG 50 firms are the best firms among the listed companies we should expect a better performance in roa.



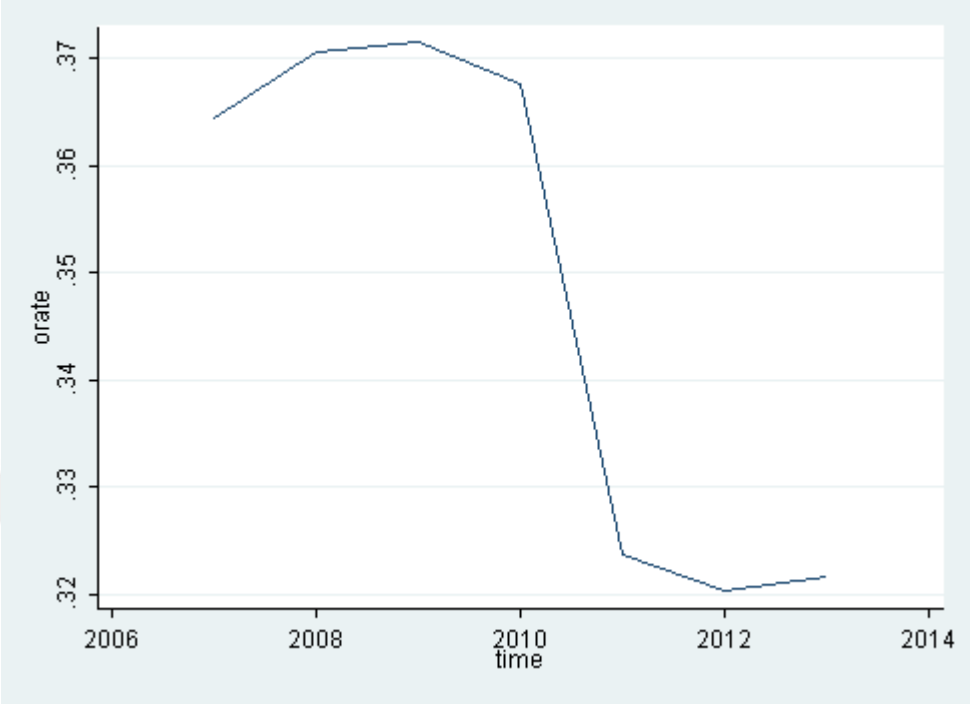
Graphic 1 : Changes in roa during 2007-2013

According to graph 2, pbv has developed positively during 2007-2013. Again we observed that during financial crises of 2008 pbv decreased. Although this result seemed controversial with roa development there is an explanation related with corporate governance. Pbv graph points out that corporate governance helped firms to show a better market performance. In other words firms with good corporate governance practices were rewarded by the market. Increase in market value (pbv) happened in spite of lower roa.



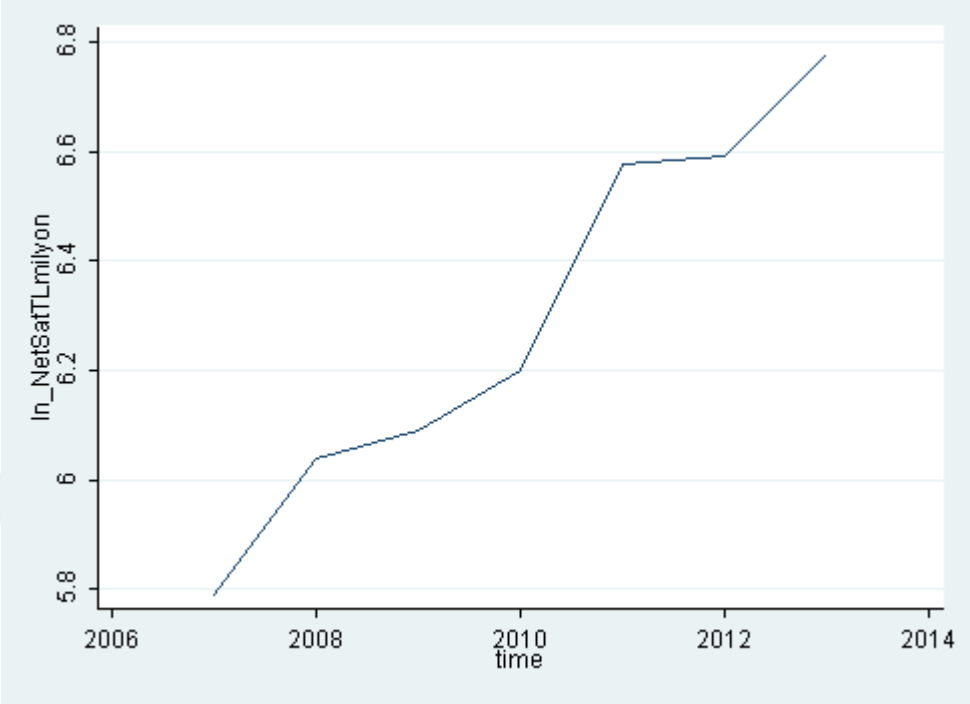
Graphic 2 : Changes in pbv during 2007-2013

Another unexpected result is observed in graphic 3, which shows a decrease in floating rate in BIST 100 and CG 50 companies during 2007-2013 period. According to the graphic 3, floating rate increased during crises period of 2008-2009. After this period floating rate decreased which we should not expect. This development need to be investigated further. However we can assume that some big companies had changed ownership structure after 2008.

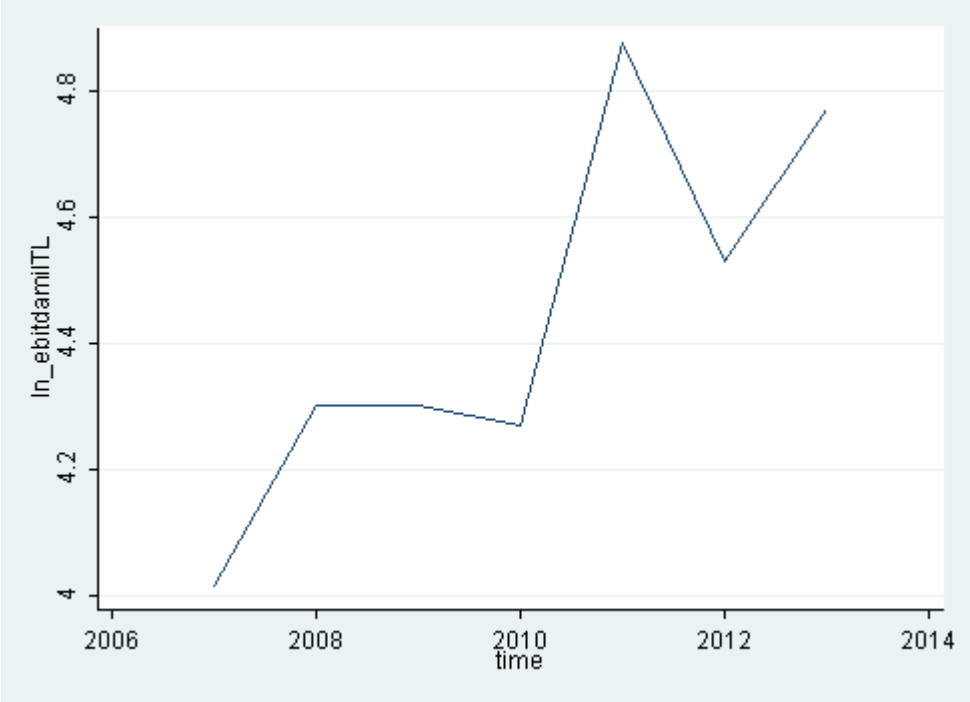


Graphic 3 : Changes in floating rate (orate) during 2007-2013

Graphic 4, in below show an increasing trend in sales during the period of 2007-2013. Net sales increased sharply after 2009 that can be attributed to effect of corporate governance. However this issue remains open to investigation since we did not compare figures with figures of Turkish economy.



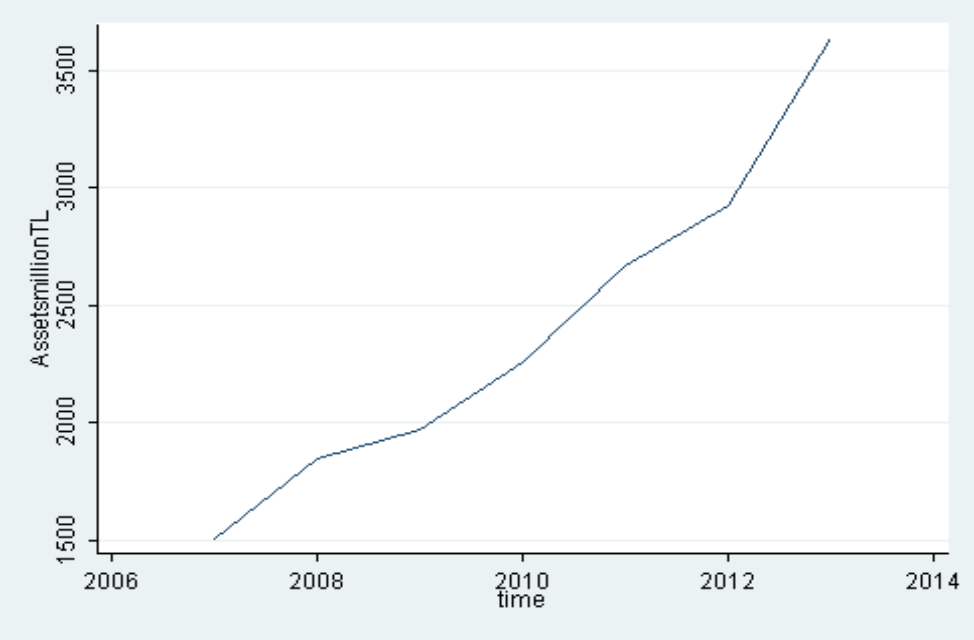
Graphic 4 : Developments in netsales during 2007-2013



Graphic 5 : Changes in ebitda during 2007-2013

Ebitda change is opposite to roa changes (Graphic 5). Ebitda increased during the analyses period. It may mean that asset size increased in Turkish companies. Therefore while ebitda performance increased asset performance decreased. Although it is a controversial result, ebitda performance shows that firm size is a factor of financial performance.

As can be seen in graphic 6 asset size increased during the period of 2007-2013 sharply. Asset increase caused a lower roa performance. On the other hand, due to increase in asset size firms performed better during and after the financial crises period considering ebitda.

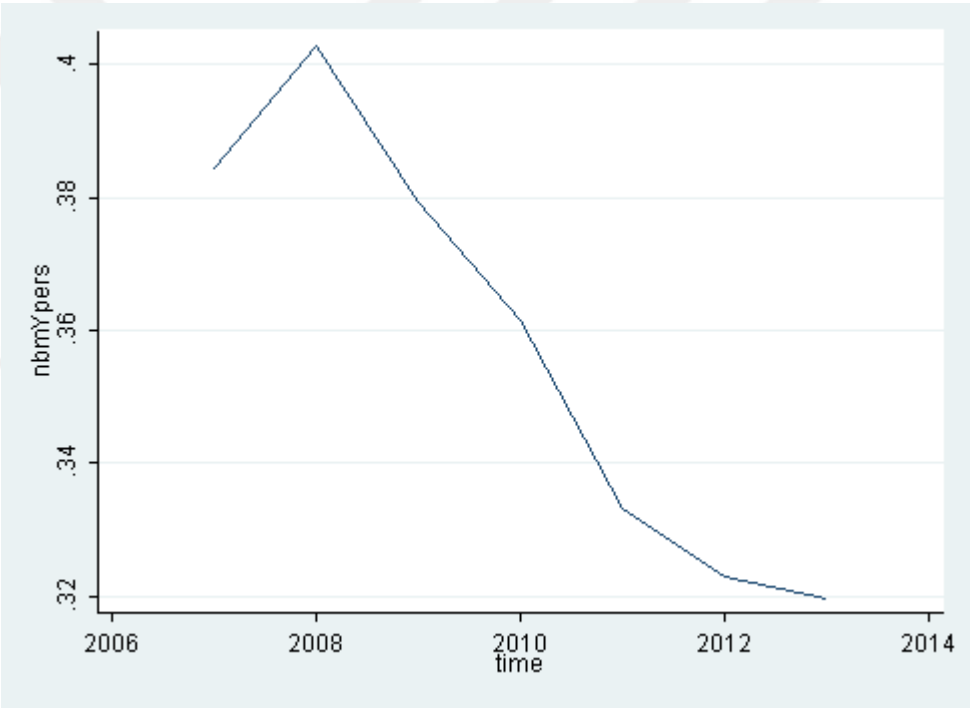


Graphic 6 : Changes in assetsize during 2007-2013

Graphic 7 shows that, the ratio of number of board members to number of managerial staff decreased during the period of 2007-2013, in BIST 100 and CG 50 companies in Turkey. This result is in fact supported by some other studies which argued that larger boards are less effective in decision making and so performance.

Developments in board size in Turkey are realized parallel with corporate governance theory. However, according to the result we reached in our model in this thesis, board size has significant but negative relationship with board performance. Therefore, graphic 7 result and model result are not consistent.

Increased ebitda and lower board size is consistent with corporate governance theory. Therefore figures of graphic 5 and 7 support this argument. But our model did not support this assumption.

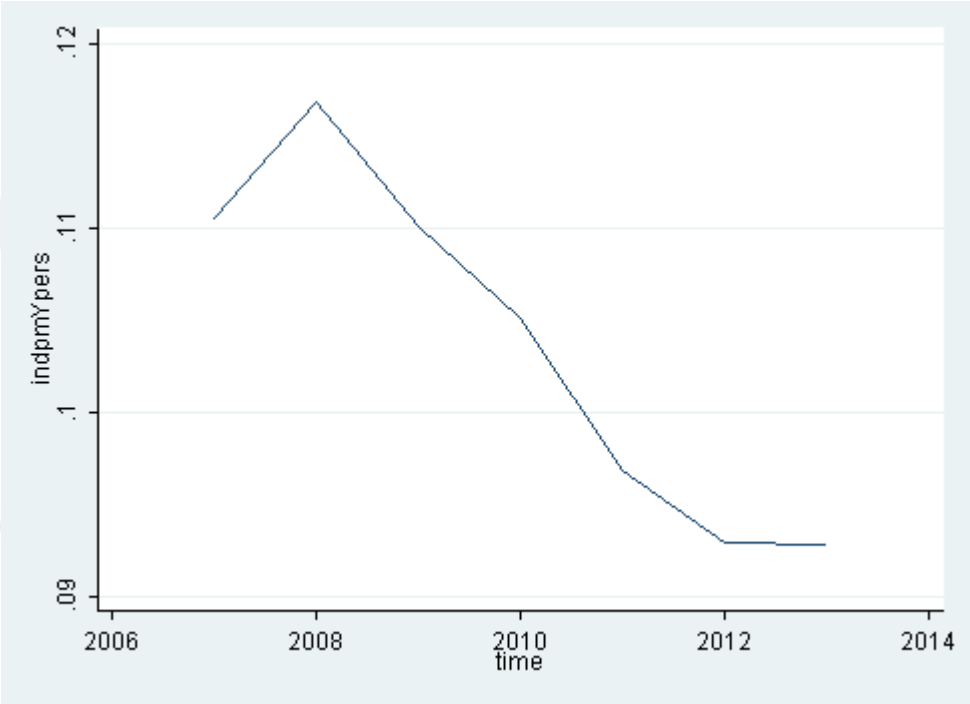


Graphic 7 : Changes in board size during 2007-2013

Similar result is observed between the financial performance of firms and number of independent board members. According to Graphic 8, ratio of number of independent board members to managerial staff decreased during the period of 2007-2013 in firms. At the same period firms' financial performance considering ebitda increased. Theoretically increase in the number of independent members on the board should help firms to increase financial performance. However we observed opposite

results in Turkish firms. Ebitda increased while ratio of number of independent board members to number of managerial staff decreases.

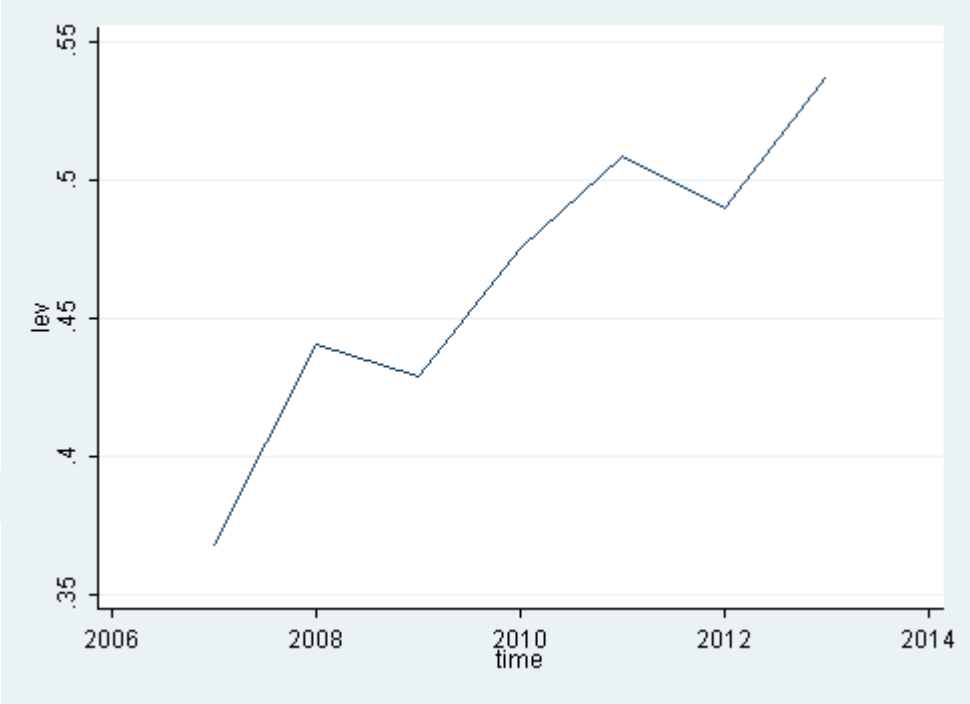
In the statistical model we found a significant but negative relationship between board independence and ebitda. In that case, our structure could not be relevant.



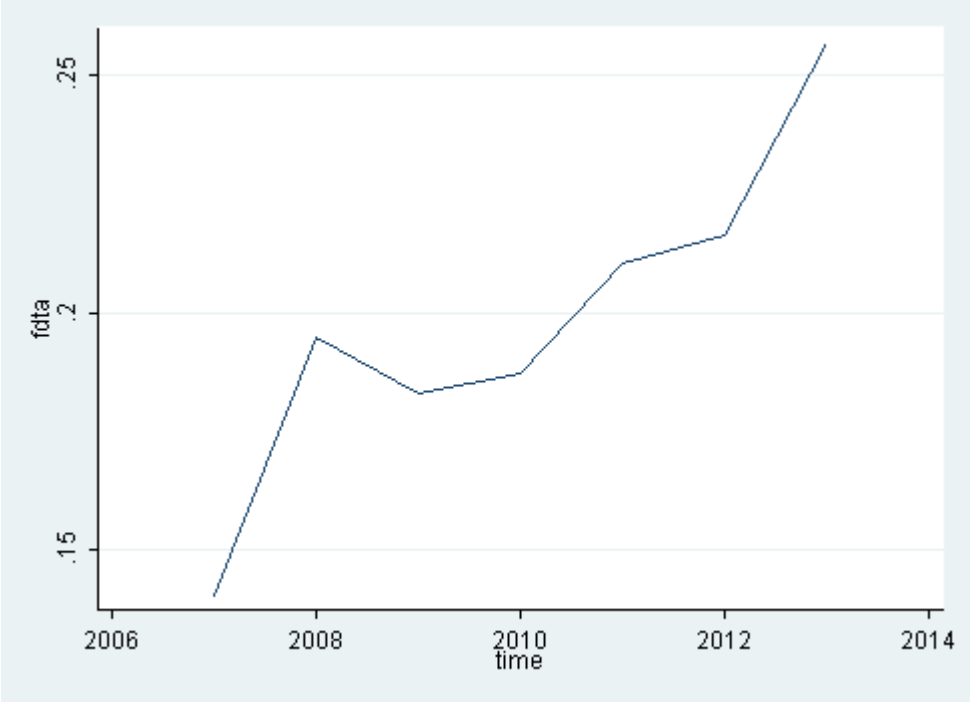
Graphic 8 : Changes in ratio of independent board members during 2007-2013

Graphics 9 and 10 are showing the trend results of leverage and financial debt level.

These 2 graphics are almost the same in shape. We interpret these results that the firms have increased their asset by using debt. On the other hand, financial debt and commercial debt seem to be increased at the same degree. However we observe that financial debt (Graphic 10) has decreased deeper than commercial debt after financial crises.



Graphic 9 : Changes in leverage during 2007-2013



Graphic 10 : Changes in ratio of fdta during 2007-2013

4.3.2. Correlation Matrix

Table 4 shows correlation for all the variables in the model. The correlation test examines the association between the corporate governance variables and firm performance variables.

In this thesis, we employed a large number of variables to investigate the effects of corporate governance and the relationships among corporate governance variables and firm performances (ROA, ebitda, pbv and leverage).

Controlling the correlation matrix a high positive correlation is observed between net sales and ebitda; net sales and assets; ebitda and assets; board independence (BI) and board size (BS). It is not surprise that there is a significant and negative correlation between board size and ebitda and between board independency and ebitda.

Overall, we observe low correlations between variables. Another concrete observation is the majority of variables are statistically significant ($p < 0,01$ and 0,05). (see appendix 1)

The results suggest that corporate governance variables (orate, BS, BI, FS and finv) are not strongly correlated with performance variables ROA, pbv and ebitda.

According to correlation table, although they are statistically significant, leverage (-0,40) and fdta (-0,33) are negatively and weakly correlated with ROA as expected. Pbv is positively but weakly (0,31) correlated with ROA. However, leverage (0,279) and fdta (0,30) are positively and significantly correlated with ebitda. Although it is not surprise there is no positive correlation between floating rate (orate) and other variables. We found significant and weak but negative correlation between orate and ROA and sales. We may expect that there should be positive correlation between orate and market value of the firm (pbv). However, we found a weak and negative correlation between floating rate and pbv. Floating rate is only positively but weakly correlated with board size (0,28) and board independency (0,33). It is generally observed in several studies that high floating rate (low concentration in ownership) causes problems in having unanimous decisions. If there is no strong shareholders

structure in the board, decision making is becoming difficult. Whereas biggest shareholders generally support efficient auditing and control mechanisms which is also benefit of small shareholders.

There is a significant and high correlation between ebitda and asset size (0,82). Apart from floating rate, board size has no positive correlation with other variables. There is a negative correlation between numbers of independent board members (BI) and ROA, leverage, pbv, ebitda, and sales. Board independency only has a positive correlation with floating rate (orate).

Firm size is statistically correlated with ROA and has a positive sign. Firm size is significant, positively correlated with lev and fdta, and positive with ebitda and sales. Firm size is positively and weakly correlated with pbv but it is statistically not significant. However, firm size is negatively correlated with orate, board size, and numbers of independent board members.

Foreign ownership (finv) has a weak correlation with all variables. Finv is correlated positively with ROA, lev and fdta, pbv, ebitda, sales and assets. Finv is negatively correlated with orate (-0,32), board size (-0,19) and board independency (-0,23).

Table 4: Correlation Matrix of Variables

	roa	lev	pbv	ebitda	fdta	orate	NS	BS	BI	FS	finv
roa	1										
lev	-0.4064*	1									
pbv	0.3116*	0.0537	1								
ebitda	0.3611*	0.2792*	0.1584*	1							
fdta	-0.3395*	0.7274*	-0.0352	0.3061*	1						
orate	-0.1108*	-0.2046*	-0.0555	-0.2585*	-0.1961*	1					
NS	0.2404*	0.2612*	0.1443*	0.8203*	0.2666*	-0.2669*	1				
BS	-0.1784*	-0.2289*	-0.1758*	-0.5053*	-0.2113*	0.2886*	-0.5112*	1			
BI	-0.2174*	-0.2188*	-0.1996*	-0.4940*	-0.2104*	0.3392*	-0.4570*	0.9605*	1		
FS	0.1437*	0.1836*	0.0499	0.8213*	0.3335*	-0.2784*	0.7583*	-0.4275*	-0.4108*	1	
finv	0.1017*	0.0852**	0.0919**	0.1997*	0.1617*	-0.3262*	0.2724*	-0.1961*	-0.2392*	0.1783*	1

(*) correlation is significant at the 1% level.
(**) correlation is significant at the 5% level.

4.4. Panel Regression Results

Before applying panel regression analysis, first variables are checked for unit root. Unit root test results are given in Table 2 (see page 63).

Five different dependent variables for measuring firm performances are selected; ROA, leverage (lev), price to book value (pbv), ebitda and financial debt to total assets (fdta).

Panel regression results for Model 1 to Model 5 are given in Tables 5 - 9. In panel data analysis there are fixed effect and random effect models. In order to determine which model to use in the research Hausman test should be used. Hausman is one of the main tests in panel data studies. The main assumption in fixed effects model is that error part can be coefficient with descriptive variables. But in random effects model it is assumed that there is no coefficient between error part and descriptive variables. Hausman test uses chi-square criteria. If probability of tests statistic is more than 10%, we can choose fixed effects to random effects at significance level of 90%. Otherwise, fixed effects are chosen. Based on the Hausman test results, while random effect regression is preferred in Model 1, and model 5, fixed effect regressions are preferred in Model 2, 3 and 4. In random effect models, we also employed foreign ownership (finv) as a corporate governance variable since econometric theory suggest that dummy variables should not be used in fixed effect models. According to the econometric theory, in a fixed effects model, only time varying variables can be used, the time invariant variables should be dropped. Therefore, we dropped foreign ownership (finv) variable in fixed effect models (2, 3, and 4) and we preferred to use it in random effect models (model 1 and 5).

In Model-1 possible determinants for ROA is investigated (Table 5a). Random effect regression is preferred as Hausman test suggests ($X2=9.470$, $p>0.05$). r^2 is found 0.542 which indicates a good explanation ratio for the dependent variables (r^2 explains the explanatory degree of model. In other words, it measures the strength and the direction of a linear relationship between dependent and independent variables). The

figure of r^2, 0,542 shows that changes in ROA is explained by independent variables by %54.

Wald test indicates model is significant (X2 =519.130, p=0.000). Regression result suggests that lev, BI and assets (FS) are inversely linked with ROA, while net sales (NS) and ebitda are linked positively. No significant effects are determined between ROA and orate, dfinv and board size.

On the other hand Durbin–Watson's (1.276) and Baltagi – Wu 's (1.849) serial correlation test results suggest there is serial correlation problem in the model. Also Levene-Brown- Forsythe' test for heteroscedasticity suggest that such a problem exists (F=7.191, p=0.000). In case of serial correlation and heteroscedasticity, robust estimators can be preferred. In random effect regression, quasi likelihood estimator is preferred and results for this estimation are given in Table 5b.

Table 5a: Random Effect Panel Regression: Dependent Variable ROA (Model 1)

	Coef.	Std. Err.	z	P>z	[95% Conf. Interval]	
orate	-0.791	2.108	-0.380	0.707	-4.922	3.340
NS	0.882	0.467	1.890	0.059	-0.033	1.796
ebitda	4.660	0.262	17.800	0.000	4.147	5.173
lev	-8.264	1.556	-5.310	0.000	-11.314	-5.213
BS (board size)	6.887	4.513	1.530	0.127	-1.960	15.733
BI (board independence)	-23.265	14.573	-1.600	0.110	-51.827	5.296
FS (Firm size)	-5.478	0.442	-12.400	0.000	-6.344	-4.612
dfinv	-1.028	1.082	-0.950	0.342	-3.148	1.092
constant	24.391	2.536	9.620	0.000	19.420	29.361
Wald chi2	519.130			0.000		
r^2	0.542					
Hausman	9.470			0.304		
Durbin-Watson (Autocorrelation)	1.276					
Bhargara, Franzini Narendranathan and Baltagi - Wu (Autocorrelation)	1.849					
Adjusted Lagrange Multiplier test (Autocorrelation)	39.940			0.000		
Levene - Brown and Forsythe (Heteroscedastisity)	7.191			0.000		

Robust estimation results suggest that while lev and assets are negatively significant on ROA, only ebitda is found positively significant. Two variables which are found significant in non-robust estimates are found non-significant in robust estimation namely net sales and BI. No new variables appeared to be significant in robust estimates. Overall significance of the model is confirmed with the Wald test (X2=142.950, p=0.000).

Table 5b : Random Effect Panel Regression with quasi least squares Dependent Variable ROA

	Coef.	Std. Err.	z	P>z	[95% Conf.	Interval]
orate	-0.086	2.144	-0.040	0.968	-4.287	4.116
NS	0.922	0.784	1.180	0.240	-0.614	2.458
ebitda	4.534	0.921	4.920	0.000	2.728	6.339
lev	-7.444	3.104	-2.400	0.016	-13.529	-1.360
BS	9.408	6.650	1.410	0.157	-3.627	22.443
BI	-30.485	20.541	-1.480	0.138	-70.744	9.774
FS	-5.228	0.611	-8.560	0.000	-6.425	-4.030
finv	-0.844	0.935	-0.900	0.367	-2.677	0.988
constant	22.127	4.046	5.470	0.000	14.198	30.057
Wald chi2	142.950			0.000		

Overall, though they are not statistically significant, a negative relationship between floating rate, board Independence, foreign ownership and ROA was found (see Table 5b); that is, larger independent members, floating rate and foreign ownership negatively impacts the profit of firms. On the other hand, board size is found insignificant but positively affect the ROA. Which means, larger boards has positive effect on firm performance. Asset size is significant but negatively affects ROA. Fernandez (2014) in his article supported our result. He found in his study that there existed a strong and negative relation between firm size and financial performance. He concludes that large company size depresses financial performance.

Empirical studies of publicly traded firms have shown a negative relationship between board size and firm performance. Hermalin and Weisbach (2003, p.20) concluded that "[…] board size and firm value are negatively correlated". Bennedsen et al. (2008) after analyzing several researches on several countries stated that "[…]

the negative board size effect exist for publicly traded firms […] thus with a few exception, the negative board size effect is well established for publicly held firms across countries," (p.1099). Zakaria et al. (2014) examined 73 listed firms in Malaysia for the period 2005-2010 by using panel data analysis. As result they found that board size positively influences firm performance while board independence and foreign board members have no significant effect. However, Fooladi (2012) studied again on Malaysian listed firms but did not reach the supporting results with Zakaria et al. He concluded that there is no significant relationship among board independency, board size and ownership structure as independent variables and firm performance (ROE and ROA) as dependent variables. Similarly Lipton and Lorsch (1992) argued that large corporate boards may be less efficient due to difficulties in solving the agency problem among the members of the board.

Additionally, our result suggests that board independence in Turkish firms is not associated with important performance measures. There is no link between board independence and firm performance. This result is consistent with the study of Bhagat and Black (2002). Bhagat and Black stated in their article that "today's independent directors are not independent enough" (p.266). Our result is also consistent with the study of Rashid et al. (2010) who examined the influence of the board in the form of representation of outside members on firm economic performance in Bangladesh. They concluded that the independent members cannot add potential value to the firm's economic performance in Bangladesh. On the contrary, some studies such as Kaplan and Reishus (1990) and Beasly (1996) found a positive impact of board with independence members on firm performance.

In Model 2, possible determinants for lev are investigated (Table-6a). Fixed effect regression is preferred as Hausman test suggests ($X2=17.27$, $p<0.05$). Therefore we did not use dummy variable finv in this model. r^2 is found 0.148 which points out a weak explanatory power. F test indicates model is significant ($F=19.690$, $p=0.000$). Regression result suggests that only three variables have effect on lev. Net sales and firm size have positive effect on lev and ebitda has negative effect on lev. Other variables don't have significant effects on lev.

On the other hand Durbin –Watson's (0.944) and Baltagi – Wu's (1.510) serial correlation test results suggest there is serial correlation problem in the model. Also Wald's test statistic for heteroscedasticity suggest that such a problem exists (X2=32721.220, p=0.000). In case of serial correlation and heteroscedasticity, robust estimators can be preferred. In fixed effect regression, Driscoll- Kraay estimator is preferred and results for this estimation are given in Table 6b.

Table 6a: Fixed Effect Panel Regression Dependent Variable lev (Model 2)

lev	Coef.	Std. Err.	z	P>z	[95% Conf.	Interval]
orate	-0.039496	0.06291	-0.63	0.53	-0.16311	0.08412
NS	0.034452	0.0167	2.06	0.04	0.00164	0.06726
ebitda	-0.015731	0.00718	-2.19	0.029	-0.02983	-0.00163
BS	-0.278024	0.2457	-1.13	0.258	-0.76084	0.2048
BI	1.27471	0.83954	1.52	0.13	-0.37506	2.92448
FS	0.033136	0.01603	2.07	0.039	0.00163	0.06464
constant	0.048238	0.09504	0.51	0.612	-0.13852	0.235
F	19.690			0.000		
r^2	0.148					
Hausman	17.27			0.008		
Durbin-Watson (Autocorrelation)	0.944					
Bhargara, Franzini Narendranathan and Baltagi - Wu (Autocorrelation)	1.510					
Wald (Heteroscedastisity)	34721.220			0.000		

Table 6b: Fixed Effect Panel Regression with driscoll-kraay estimator Dependent Variable lev

lev	Coef.	Std. Err.	t	P>t	[95% Conf.	Interval]
orate	-0.039496	0.04651	-0.85	0.398	-0.13193	0.05294
NS	0.034452	0.02346	1.47	0.145	-0.01216	0.08107
ebitda	-0.015731	0.01218	-1.29	0.2	-0.03994	0.00848
BS	-0.278024	0.27444	-1.01	0.314	-0.82342	0.26737
BI	1.27471	1.0329	1.23	0.22	-0.77796	3.32738
FS	0.033136	0.01466	2.26	0.026	0.004	0.06227
constant	0.048238	0.06008	0.8	0.424	-0.07117	0.16764
F	950.680					
within r^2	0.066					

Robust estimation results suggest that only one variable (asset) positively affect lev. Results for non-robust estimates are different from robust estimates. Overall significance of the model is confirmed with the F test (F=950.680, p=0.000).

There are several studies investigated the relationship between financial leverage and performance. The results of these studies are inconclusive. In theory it is assumed that financial leverage is an important mean of enhancing the financial performance of the company. A good governed company has also chance to find lower cost and suitable funds for its growth. Especially in the financial crises time, companies with alternative exterior financing sources are expected to live less difficulties.

Corporate governance theory (agency cost theory) assumes that, good governed company can have easy access to the exterior funds and when firms take a higher leverage, due to the increased bankruptcy risk, the managers will act on the best interest of shareholders since both parties interest has been parallel. Therefore, we should normally expect to observe a positive relationship between firm performance and firm leverage.

However, we also know that if debt increases beyond the optimum level, it hurts the profits of the company.

Dessi and Robertson, (2003) found that there existed a positive relationship between leverage and financial performance.

Kannadhasan and Aramvalarthan (2014) examined the relationship between leverage and financial performance of 95 Indian pharmaceuticals firms for the period of 2000-2012, by employing panel data regression analysis with a random effect regression. They found as result that financial leverage has a positive impact on financial performance significantly.

Our result on the relationship between leverage and corporate governance variables is not fully consistent with the above mentioned studies. Leverage has only significant and positive relationship with assets. Leverage has no significant effect on the other variables used in our model. However, Shen (2012) also has reached the similar conclusion in his study that examined the effect of capital structure on firms' performance based on 2007 data from 4 big countries in Europe : Germany, France,

Italy and England. He found a negative relationship between firm's leverage and performance. In Turkey, the relationship between leverage and corporate governance has not been studied much.

In Model 3, possible determinants for pbv are investigated (Table-7a). Fixed effect regression is preferred as Hausman test suggests (X2=32.850, p<0.05). r^2 is found 0.001 which is weak. F test indicates model is significant (F=5.110, p=0.000). Regression result suggests that only two variables have effect on pbv. Assets and floating rate (orate) have positive effects on pbv. Other variables don't have significant effects on pbv.

Table 7a: Fixed Effect Panel Regression Dependent Variable pbv (Model 3)

pbv	Coef.	Std. Err.	z	P>z	[95% Conf. Interval]	
orate	1.518	0.823	1.840	0.066	-0.100	3.136
NS	0.039	0.219	0.180	0.860	-0.392	0.470
ebitda	0.088	0.094	0.930	0.353	-0.098	0.273
lev	0.253	0.607	0.420	0.677	-0.940	1.447
BS	0.849	3.219	0.260	0.792	-5.476	7.175
BI	-1.141	11.011	-0.100	0.918	-22.777	20.496
FS	0.690	0.211	3.270	0.001	0.276	1.104
constant	-4.346	1.244	-3.490	0.001	-6.790	-1.902
F	5.110			0.000		
r^2	0.001					
Hausman	32.850			0.000		
Durbin-Watson (Autocorrelation)	1.251					
Bhargara, Franzini Narendranathan and Baltagi - Wu (Autocorrelation)	1.716					
Wald (Heteroscedastisity)	1.5E+05			0.000		

On the other hand Durbin –Watson's (1.251) and Baltagi – Wu's (1.716) serial correlation test results suggest there is serial correlation problem in the model. Additionally, Wald's test statistic for heteroscedasticity suggest that there is such a problem exists (X2=1.5E+05, p=0.000). In case of serial correlation and heteroscedasticity, robust estimators can be preferred. In fixed effect regression, Driscoll- Kraay estimator is preferred and results for this estimation are given in Table 7b.

Table 7b: Fixed Effect Panel Regression with driscoll-kraay estimator Dependent Variable pbv

pbv	Coef.	Std. Err.	t	P>t	[95% Conf.	Interval]
orate	1.518	0.582	2.610	0.011	0.361	2.675
NS	0.039	0.104	0.370	0.711	-0.169	0.246
ebitda	0.088	0.016	5.500	0.000	0.056	0.119
lev	0.253	0.485	0.520	0.603	-0.711	1.218
BS	0.849	1.012	0.840	0.404	-1.162	2.861
BI	-1.141	4.405	-0.260	0.796	-9.895	7.614
FS	0.690	0.259	2.660	0.009	0.174	1.205
constant	-4.346	1.582	-2.750	0.007	-7.489	-1.203
F	13463.250					
within r^2	0.072					

Robust estimation results suggest that three variables, floating rate, ebitda and assets positively affect pbv. Results for non-robust estimates are different from robust estimates. Overall significance of the model is confirmed with the F test (F=13463.25, p=0.000).

Floating rate has a positive and significant effect on pbv. This result is considerable with corporate governance arguments. Positive and significant sign of ebitda and firm size is also expectable.

Beiner and Dchmid (2005) examined the relationship between corporate governance applications and market value of listed firms for Switzerland in the year 2003. They established a corporate governance index that consists of 38 governance attributes across 5 categories. As result they reported that a one point increase in the corporate governance index causes an increase in market capitalization of roughly 8,52%.

Klapper and Love (2004) employed firm-level data for 374 firms in 14 emerging countries and established an governance index. They concluded that better corporate governance is highly correlated with better operating performance and higher market valuation.

In Model 4, possible determinants for ebitda are investigated (Table 8a). Fixed effect regression is preferred as Hausman test suggests (X2=45.950, p<0.05). r^2 is found 0.636 which indicates a strong explanation power. F test indicates model is

significant (F=56.56, p=0.000). Regression result suggests that two variables have effect on ebitda. Netsales (NS) has positive effect on ebitda and lev has negative effect on ebitda. Other variables don't have significant effects on ebitda.

Table 8a: Fixed Effect Panel Regression Dependent Variable ebitda (Model 4)

ebitda	Coef.	Std. Err.	z	P>z	[95% Conf. Interval]	
orate	0.085	0.405	0.210	0.833	-0.711	0.881
NS	1.170	0.093	12.550	0.000	0.987	1.354
lev	-0.652	0.297	-2.190	0.029	-1.236	-0.068
BS (board size)	-0.859	1.583	-0.540	0.588	-3.970	2.252
BI (board independent)	1.299	5.417	0.240	0.811	-9.346	11.944
FS	-0.156	0.103	-1.510	0.132	-0.359	0.047
constant	-1.722	0.607	-2.840	0.005	-2.914	-0.530
F	56.560			0.000		
r^2	0.636					
Hausman	45.950			0.000		
Durbin-Watson (Autocorrelation)	1.483					
Bhargara, Franzini Narendranathan and Baltagi - Wu (Autocorrelation)	2.178					
Wald (Heteroscedastisity)	2.2E+30			0.000		

On the other hand Durbin –Watson's (1.483) and Baltagi – Wu's (2.178) serial correlation test results suggest there is serial correlation problem in the model. Additionally, Wald's test statistic for heteroscedasticity suggest that there is such a problem exists (X2=2.2E+30, p=0.000). In case of serial correlation and heteroscedasticity, robust estimators can be preferred. In fixed effect regression, Driscoll- Kraay estimator is preferred and results for this estimation are given in Table 8b.

Robust estimation results suggest that two variables, assets (FS) negatively and netsales (NS) positively effects ebitda. Results for non-robust estimates are different from robust estimates. Overall significance of the model is confirmed with the F test (F=1631.410, p=0.000).

Table 8b: Fixed Effect Panel Regression with driscoll-kraay estimator Dependent Variable ebitda

ebitda	Coef.	Std. Err.	t	P>t	[95% Conf.	Interval]
orate	0.085	0.322	0.270	0.792	-0.555	0.726
NS	1.170	0.049	23.910	0.000	1.073	1.268
lev	-0.652	0.446	-1.460	0.148	-1.538	0.235
BS	-0.859	0.589	-1.460	0.149	-2.030	0.313
BI	1.299	1.593	0.820	0.417	-1.867	4.464
FS	-0.156	0.045	-3.480	0.001	-0.245	-0.067
constant	-1.722	0.315	-5.470	0.000	-2.348	-1.096
F	1631.410			0.000		
within R2	0.422					

In Model 5 possible determinants for fdta is investigated (Table 9a). Random effect regression is preferred as Hausman test suggests (X2=70.80, p>0.05). r^2 is found 0.232 which indicates a poor explanation ratio for the dependent variables. Wald test indicates that model is significant (X2 =75.680, p=0.000). Regression result suggests that ebitda is inversely linked with fdta, while asset(FS) and finv are linked positively. No significant effect is determined between fdta and the other variables.

On the other hand Durbin –Watson's (1.003) and Baltagi – Wu 's (1.482) serial correlation test results suggest there is serial correlation problem in the model. Also Levene-Brown- Forsythe' test for heteroscedasticity suggest that such a problem exists (F=4.4124, p=0.000). In case of serial correlation and heteroscedasticity, robust estimators can be preferred. In random effect regression, quasi likelihood estimator is preferred and results for this estimation are given in Table 9b.

Robust estimation results suggest that while ebitda is negatively significant on fdta, only asset is found positively significant. Foreign ownership (finv) variable which is found significant in non-robust estimates is found non-significant in robust estimation. No new variables appeared to be significant in robust estimates. Overall significance of the model is confirmed with the Wald test (X2=47.760, p=0.000).

We expected finv has a positive effect on lev like we found this relationship in non-robust estimates however, we reached the converse relationship between lev and foreign ownership.

Table 9a: Random Effect Panel Regression Dependent Variable fdta (Model 5)

fdta	Coef.	Std. Err.	z	P>z	[95% Conf. Interval]	
orate	-0.041	0.048	-0.860	0.389	-0.134	0.052
NS	0.010	0.011	0.940	0.346	-0.011	0.032
ebitda	-0.016	0.006	-2.930	0.003	-0.027	-0.005
BS	0.120	0.119	1.000	0.315	-0.114	0.354
BI	-0.265	0.389	-0.680	0.496	-1.028	0.498
FS	0.057	0.011	5.430	0.000	0.037	0.078
dfinv	0.051	0.029	1.750	0.080	-0.006	0.108
constant	-0.211	0.063	-3.350	0.001	-0.334	-0.087
Wald chi2	75.680			0.000		
r^2	0.232					
Hausman	7.080			0.421		
Durbin-Watson (Autocorrelation)	1.003					
Bhargara, Franzini Narendranathan and Baltagi - Wu (Autocorrelation)	1.482					
Adjusted Lagrange Multiplier test (Autocorrelation)	26.320			0.000		
Levene - Brown and Forsythe (Heteroscedastisity)	4.412424			0.000		

Table 9b: Random Effect Panel Regression with driscoll-kraay estimator Dependent Variable fdta

	Coef.	Std. Err.	t	P>t	[95% Conf.	Interval]
orate	-0.025	0.047	-0.530	0.596	-0.117	0.067
NS	-0.002	0.012	-0.190	0.853	-0.027	0.022
ebitda	-0.011	0.007	-1.710	0.088	-0.024	0.002
BS	0.001	0.100	0.010	0.995	-0.195	0.196
BI	0.139	0.324	0.430	0.668	-0.496	0.775
FS	0.071	0.013	5.640	0.000	0.046	0.096
finv	0.044	0.030	1.460	0.145	-0.015	0.104
constant	-0.252	0.079	-3.170	0.002	-0.407	-0.096
Wald chi2	47.760			0.000		

4.5. Summary of the Results

In this section, we submitted the panel regression results with their significance and signs in a summary table to make the comparison easier.

Table 10 : : Summary table of the Panel Regression Results

Model 1 : ROA= β0+ β1orate+β2NS+β3ebitda+β4lev+β5BS+β6BI+β7FS+u

ROA :	β0	β1orate	β2NS	β3ebitda	β4lev	β5BS	β6BI	β7FS	$\beta_8$finv
	significant	insignificant	insignificant	significant	significant	insignificant	insignificant	significant	insignificant
sign		-	+	+	-	+	-	-	-

Model 2: ebitda= β0+ β1orate+ β2NS+ β3lev+ β4BS+ β5BI+ β6FS+ u

ebitda :	β0	β1orate	β2NS	β3lev	β4BS	β5BI	β6FS	
	significant	insignificant	significant	insignificant	insignificant	insignificant	significant	
sign		+	+	-	-	+	-	

Model 3: pbv= β0+ β1orate+ β2NS+β3ebitda+β4lev+β5BS+ β6BI+β7FS+ u

pbv :	β0	β1orate	β2NS	β3ebitda	β4lev	β5BS	β6BI	β7FS
	insignificant	significant	insignificant	significant	insignificant	insignificant	insignificant	significant
sign		+	+	+	+	+	-	+

Model 4: lev = β0+ β1orate+ β2NS+β3ebitda+β4BS+ β5BI+ β6FS+u

Lev :	β0	β1orate	β2NS	β3ebitda	β4lev	β5BS	β6BI	
	insignificant	insignificant	insignificant	insignificant	insignificant	insignificant	significant	
sign		-	+	-	-	+	+	

Model 5: fdta= β0+ β1orate+ β2NS+β3ebitda+β4BS+β5BI+β6FS+β7finv+u

fdta :	β0	β1orate	β2NS	β3ebitda	β4BS	β5BI	β6FS	β7finv
	significant	insignificant	insignificant	significant	insignificant	insignificant	significant	insignificant
sign		-	-	-	+	+	+	+

CHAPTER 5. DISCUSSIONS and CONCLUSIONS

5.1. Discussions and Implications

The discussion and implications of the results of the relationship between corporate governance applications and firm performance in Turkey and comparative studies are reported in this chapter.

Our study revealed that there is significant relationship between corporate governance practices (board structure, ownership structure and firm size) and firm performance measures of ROA, pbv, ebitda, leverage and fdta. On the other hand, although it is statistically significant, it is weak and in most cases the sign of relationship is not expected.

The variables that are significantly related to ROA in the model are the combination of ebitda, lev, and assets (FS). However lev and assets are inversely linked with ROA. No significant effects are determined between ROA and orate, NS, BS, BI, and finv.

Another theoretically important relation is examined between pbv and corporate governance variables. Although Tobin's Q is widely used in studies that search the relationship between corporate governance and performance, in our model we preferred to use pbv for market measure of firm performance. Pbv is found only significant with floating rate (orate), ebitda, and firm size. Pbv is significantly and positively related with orate, ebitda and assets. Netsales (NS), lev, board size and board independency are not significantly related to pbv. Additionally, the explanatory power of model is also very low (r^2 = 0,002).

However, robust test found that floating rate, ebitda and firm size are also significantly and positively related with pbv. The explanatory power of the model (r^2) has also increased to %11,5.

5.1.1. Board size

We considered board size as a variable that can affect firm performance in this thesis. Board size generally depends on firm size. If a firm is considered big in asset size usually has a larger board. In several studies such as Yermack (1996), Kiel and Nicholson (2003) pointed out that board size and firm performance are correlated and board size effects firm performance. In theory, larger boards are supported due to its monitoring and controlling actions. However opposite reviews suggest that larger boards are ineffective due to its weak decision making mechanisms.

The size of boards is one of the main subjects of the corporate governance. Therefore it received much attention in the business community and so researchers. There are several empirical studies of firms that have shown a robust negative relationship between board size and firm performance. For example; Lipton and Lorsch (1992) discussed that large corporate boards may be less effective due to difficulties in solving the agency problems between the board members. Yermack (1996) studied on board size effect on performance by using a fixed effect panel data analysis in America. He employed 452 large firms for the period of 1984 – 1991. As result he found that there is a negative and significant board size effect on Tobins' Q. A similar result was reached by Bennedsen et al. (2008).

However there are a few exemptions in literature that finds a positive relation between board size and performance. Kiel and Nicholson (2003) found a positive board size effects in Australia. Zakaria et al. (2014) using panel random effects model examined 73 Malaysian listed trading and services sector firms for the period of 2005-2010 and also found that board size positively influences firm performance.

Board size effect has been largely discussed in the theory and commonly emphasized that the boards generally depend on a number of firm characteristics. However, Hermalin and Weisbach (2003) in their research, strongly argue that board size and firm value are negatively correlated. Similarly, Wu et al. (2013) in their study on Taiwan listed firms for the period of 2001-2008 showed that board size is significantly and negatively related to ROA, stock return and Tobin's Q.

Ersoy et al. (2011) investigated the relationship between corporate governance and firm performance for 51 firms listed in the ISE-100 index for the period of 1998-2007 using panel logistic regression models. In their study they found that board size has positive relation with Tobin's Q.

Some studies related with the relationship between board size and firm performance is given in the table below.

Table 11 : Studies on Relationship between Board Size and Firm Performance

Authors	Year	Country	Method	Variables				Relation / Board size and firm performance
				ROA	ROE	Tobin's Q	Stock Return	
Yermack	1996	USA	OLS / Fixed effect panel data analysis	-		-		negative and significant
Lipton and Lorsch	1992							Large Boards are less effective
Bennedsen et al.	2008	Denmark	OLS	-				negative and significant
Hermalin and Weisbach	2003		Studied other researches					Board size and firm value (negatively correlated)
Wu et al.	2013	Taiwan	OLS regression	-		-	-	negative and significant
Dwivedi and Jain	2005	India	Multiple regression model			-		negative and significant (larger boards are less effective)
Kiel and Nicholson	2003	Australia	Regression	+		+		positive and significant
Ersoy et al.	2011	Turkey	Panel logistic regression			+		positive and significant
Zakaria et al.	2014	Malaysia	Panel random effects	+				positive and significant

Our result is consistent with the majority of the studies. In our model we found that there is no significant relationship between board size (BS) and ROA, lev, pbv, ebitda, and fdta.

5.1.2. Board Independence

According to the arguments raised by agency theory, independent board members are an important part of the board that affects firm performance. Theory suggests that the higher the number of independent members on the board, the stronger would be the corporate governance of the firm. The presence of independent members on board

is supposed to add more value to the firm. Because they are assumed increase the intellectual capacity of the board.

High proportion of independent members can assume the coalition of control and use their power to influence the process of decision on the board and limit the possibilities of implementations of supplementary control mechanisms. (Ammari et al., 2014)

From this point of view, many corporate governance advocates suggested more independent boards to the firms. We also accepted the hypothesis in this thesis that board composition and firm performance are positively related.

The board independence issue also has been attractive due to the prominent business failures of large firms such as Enron and Parmalat. The quality and number of independent members on the board is important because of their views carry significant weight on the decision making. Therefore, a board with complementary skills, experience and a degree of independence can be more effective board than an ordinary appointed board.

According to Allen et al. (2000), the effectiveness of independent members as board governance mechanism is still unclear especially in a country where the firm controlling shareholders will use their power to select members of the entire board. Erkens et al. (2012) investigated the influence of corporate governance on financial firms' performance during the 2007-2008 financial crises. Using a data set of 296 financial firms from 30 countries they found that firms with more independent boards and higher institutional ownership experienced worse stock returns during the crisis period. They explain this result with capital structure. They say that firms with more independent boards raised more equity capital during the crisis, which led to a wealth transfer from existing shareholders to debt holders. Similarly, Black et al. (2008) find negative relationship between board independency and firm performance.

An interesting result has been found by Bhagat and Bolton (2013). They studied the impact of the Sarbanes-Oxley Act on the relationship between corporate governance and company performance for the period of 1998-2007. They found a significant negative relationship between board independence and operating

performance during the pre-2002 period, but a positive and significant relationship during the post-2002 periods. This result may indicate that legislative support (SOX) affects board independence and so effectiveness of corporate governance.

Wu et al. (2013) in their study on Taiwan listed firms also found a positive and significant relation between board independence and ROA and Tobin's Q.

Table 12 : Studies on Relationship between Board Independence and Firm Performance

Authors	Year	Country	Method	Variables				Relation / Board independent and firm performance
				ROA	ROE	Tobin's Q	Profitability	
Allen et al.	2000	USA						unclear
Erkens et al.	2012	30 Countries	Regression				-	Worst stock returns during the crisis period (2007-2008)
Black et al.	2008	Korea	2SLS / OLS			-	-	negative, insignificant
Bhagat and Bolton	2013	USA	OLS / Panel data	- / +		- / +		negative and significant pre 2002 and positive and significant post 2002
Fooladi	2012	Malaysia	Linear multiple regression	+	+			insignificant
Zakaria et al.	2014	Malaysia	Panel random effects	-				insignificant pre 2007 / negative during crisis period (2007-2008)
Dwivedi and Jain	2005	India	Multiple regression model			+		insignificant
Wu et al.	2013	Taiwan	OLS regression	+		+	+	positive and significant

In our model we found that there is no significant relationship between board independence (BI) and ROA, lev, pbv, ebitda, and fdta. We accepted the hypothesis. These results are not consistent with general theory of corporate governance. Turkey as a special case we may argue that independent members in the boards are not really independent in Turkey. According to the legislation launched by CMB, firms listed in BIST have to employ independent board members in their board. It seems that firms employ independent members in order to fulfill the requirements of the legislation.

The board structure result of this thesis is not consistent with the predominant theory of corporate governance, agency theory, which supports independent board structures. Our study for Turkey did not support that boards dominated with independent members are significantly related to performance for both accounting based measures and market based measures. Therefore the issue of board

independency as a factor of corporate governance needs to be investigated further by considering cultural environment, legislative applications and general acceptance of the practices.

In summary, firm should not fully depend on independent directors to reduce the agency problem. This is because the independent directors may not have the skills to do so, or they may be inefficient and thus they are not effective in performing their duties.

5.1.3. Foreign Ownership

Foreign ownership is among the important corporate governance indicators. Theoretically it is assumed that foreign owners generally demand high quality of corporate governance in order to protect their rights as well as minority rights.

In our model we employed foreign ownership variable in random effect models and we found that there is no significant relationship between foreign ownership (finv) and ROA, fdta. We observed foreign ownership has an insignificant and negative relationship with ROA and insignificant but positive relationship with fdta. According to the results foreign ownership has negative effect on firms' performance which we did not expect. Although not significant foreign ownership is found to have positive effect on financial debt which is expected. On the other hand, this study also has reached mixed results on the foreign ownership and good corporate governance relations issue. It is assumed that foreign ownership helps firms to establish a good corporate governance practices. However, our model did not support this argument strongly.

Lee (2008), using panel data for South Korea for the period of 2000-2006 in his study, found that foreign ownership is insignificant with ROA. Demsetz and Villalonga (2001) also found no significant relationship between ownership structure and firm performance.

In several studies such as Alimehmeti and Paletta (2012), it has been found that there is a significant positive relationship between ownership structure and firm

performance. However, these studies examine general structure of ownership. Considering solely foreign ownership give different results.

Dwivedi and Jain (2005) studied on 340 large Indian firms listed in stock exchange for the period of 1997-2001 by using regression analysis and they found a positive significant relation between foreign ownership and firm performance. Zakaria et al. (2014b) investigated Malaysian trading and services firms listed in stock exchange for the period of 2005-2010 and found that there is a positive relationship between ownership concentration and firm performance. However, they found positive but insignificant relationship between foreign ownership and firm performance before the financial crises of 2008 but positive and significant relation after 2008 in the same study.

We see from the results of several studies on ownership structure that, there should be no systematic relation between variations in ownership structure and firm performance.

In Turkey, Mizrahi (2009) using a corporate governance index, found a positive and significant relationship in his thesis, between the average foreign ownership ratios and corporate governance scores. According to his study firms with higher foreign ownership engage in better corporate governance practices and therefore have higher corporate governance scores.

Karaca and Ekşi (2012) using panel regression analysis also found a positive relation between ownership structure /concentration) and firm performance for 50 firms listed in ISE during 2005-2008.

Gurbuz and Aybars (2010) indicated that foreign ownership improves firm financial performance in Turkey up to a certain level. However beyond this level, additional ownership by the foreigners does not add to firm profitability. They used data of 205 non-financial listed firms for the period of 2005-2007 and employed regression method.

Additionally, Gunduz and Tatoglu (2003) showed that profitability of firms which had foreign ownership is higher than the other firms. Aydın et al. (2007) examined the relationship between foreign ownership and firm performance for the

period of 2003-2004. They also resulted that firms with high percentage of foreign ownership performs better than local firms. Akcay and Aygun (2014) found that there is a positive but insignificant relationship between foreign ownership and firm performance (ROE).

Table 13 : Studies on Relationship between Foreign Ownership and Firm Performance

Authors	Year	Country	Method	Variables			Relation / foreign ownership and firm performance
				ROA	ROE	Tobin's Q	
Lee	2008	Korea	Panel data analysis	+			insignificant
Demsetz and Willalonga	2001	USA	OLS / 2SLS			+	insignificant
Alimehmeti and Paletta	2012	Italy	OLS / Regression	+			positive, significant
Dwivedi and Jain	2005	India	Multi regression model (Panel)			+	positive, significant
Zakaria et al.	2014b	Malaysia	Panel random effects	+			positive, insignificant pre-2008 and positive significant post-2008
Mizrahi	2009	Turkey	Panel regression analysis	+		+	positive and significant
Karaca and Ekşi	2012	Turkey	Panel regression analysis	+	+		positive and significant between ownership structure and firm performance
Gürbüz and Aybars	2010	Turkey	OLS Regression	+			positive up to a certain level
Gündüz and Tatoğlu	2003	Turkey	Regression	+			positive
Aydın et al.	2007	Turkey	t-test statistics	+	+		positive and significant
Akçay and Aygün	2014	Turkey	Multi regression		+	+	positive, significant with Tobin's Q / insignificant with ROE

In this thesis we rejected the hypothesis: apart from financial debt/total asset ratio, there is no positive significant relationship between foreign ownership and firm performance. These results are not consistent with general theory of corporate governance.

5.1.4. Floating rate

Ownership concentration has important affects for firms' strategy. Decisions of investment, compensation schemes, management successions, dividend policy strongly influence corporate performance. Therefore, together with foreign ownership, public share of the firm also gain importance.

Publicly open firms are assumed to have careful managements since they are under control of legal authorities and they are transparent to public and third parts. These firms can effectively monitor managerial teams to increase the quality of corporate governance. Therefore existing shareholder and managers are expected to be more efficient in operations.

In our study, we considered floating rate as one of the corporate governance factor that is supposed to effect firm performance positively. As result we found in our model that floating rate (orate) is not significant with any of the dependent variables of ROA, pbv, leverage, ebitda, and fdta. There is no relationship between proportion of tradable shares and firm performance. We had the same results with robustness check. We reject the hypothesis. This result is converse to the expectation that the publicly open firms perform better than the others. One possible explanation of this result may be the low percentage of tradable shares. This phenomenon may reduce the efficiency of the shareholders' monitoring. Another important reason may be the insufficiency of data.

5.1.5. Firm Size

Among the factors of corporate governance, previous studies indicated that firm size is another factor that will influence firm performance. Firm size is assumed to provide competition advantages and enhance the productivity growth. Additionally, firm size is accepted to increase the quality of the corporate governance mechanism.

Firm size in this thesis is represented by total assets. In our model, asset is found to be significant with ROA but the sign is negative. It means that asset size has a

negative relationship with ROA. ROA decreases while assets increase. We normally should not expect this result. However, this can be attributed to the formula that is because denominator of formula increases but the profit does not increase at the same time.

Using book value as firm size indicator Luxi et al. (2013) found a positive and significant relationship between firm size and firm performance for Chinese listed firms in the years 2007-2011.

Süer et al. (2012) found no relation between corporate governance and firm size in Turkey. Aghabeigi and Ondes (2015) investigated the effects of corporate governance factors on firm values of companies listed in ISE. They collected data from 60 companies for the period of 2008-2012. Using panel data analysis they found that there is a significant positive relationship between corporate governance factors and firm value. But, size and leverage is statistically insignificant with ROE.

Mizrahi (2009) studied on Turkish firms, and also found that firm size has a negative relationship with the firm value. Akcay and Aygun (2014) in their study found positive and significant relationship between ROE and size and leverage.

Table 14: Studies on Relationship between Firm Size and Firm Performance

Authors	Year	Country	Method	Variables				Relation / Firm size and firm performance
				ROA	ROE	Tobin's Q	pbv / eps	
Luxi et al.	2013	China	OLS Regression	+	+		+	positive and significant
Aghabeigi and Öndeş	2015	Turkey	Panel regression analysis		+			positive and significant
Akçay and Aygün	2014	Turkey	Multy regression		+			positive and significant
Süer et al.	2012	Turkey						no relation
Zakaria et al.	2014	Malaysia	Panel random effects	-				negative and significant
Mizrahi	2009	Turkey	Panel regression analysis	-		-	-	negative and significant

Firm size is found significantly but negatively related with ROA. We found firm size is insignificant with ebitda. In the robustness check we also found significant but negative relation between ebitda and firm size. On the other hand, we found positive

and significant relationship between firm size and leverage, pbv and fdta. According to these test results firm size has positive effects on firm's market value, leverage and financial debt capacity. However, our model shows that there is negative relation between firm size and ROA and there is no relation between firm size and ebitda.

5.1.6. Leverage and Financial Debt to Total Assets

In our models leverage is found only positively significant with net sales and firm size (assets). Leverage is found negatively significant with ebitda. Floating rate, board size, board independence and foreign ownership are not significant with leverage. In robustness check, leverage is also found positively significant with foreign ownership. But in robustness check net sales found insignificant with leverage.

Anderson et al. (2004) showed that the cost of debt is lower for larger boards, presumably because creditors view these firms as having more effective monitors of their financial accounting process. However, we found in this thesis no relation between board size and leverage.

Luxi et al. (2013) examined Chinese listed firms in their study and found that, although it is not significant, leverage assuages the positive impact of corporate governance on firm performance.

Table 15 : Studies on Relationship between Leverage and Firm Performance

Authors	Year	Country	Method	Variables				Relation / Leverage and firm performance
				ROA	ROE	Tobin's Q	Profitability	
Anderson et al.	2004	USA	Panel data analysis				+	negative and significant
Zakaria et al.	2014	Malaysia	Panel random effects	-				negative and significant
Luxi et al.	2013	China	OLS Regression	+	+			positive and insignificant

Similarly, in our study fdta is found positively significant with firm size and foreign ownership but negatively significant with ebitda. However, in the robustness check, we only found fdta is positively significant with firm size. Ebitda stayed negative and foreign ownership is found insignificant in robustness check.

5.2. Limitations of the Thesis

Although the corporate governance issue has been discussing since 1930's we observe contrasting theories and evidences on the relationship between corporate governance and firm performance. It proves that there is always room for further evidences. Differences in the findings of prior studies show that models, factors, variables, country, term, and sample selection affect the results. From this point of view, our study adds further evidences on corporate governance debates.

One of the main limitations could be observed in this thesis is focusing only internal factors of a firm. Although we discussed in theoretical explanations on the issue, business environment, countries' legislations and regulations could have strong impact on firm management and so firm performance.

Another limitation which is common in other studies that is also experienced in this thesis is related to sample size. We examined 92 firms selected out of 150 firms. These firms were also BIST 100 and CG index companies which are supposed to be good governed firms comparing with the others. It would be better to have more comparable results if we employ all of BIST firms in Turkey. However, since there are still difficulties of collecting data due to missing figures of age, staff number ext. it is not easy to study with all firms listed on BIST.

Nevertheless, this thesis still provides useful hints on the issue of corporate governance and its impact on the firm performance of Turkish firms.

CHAPTER 6. CONCLUSION

Corporate governance is considered an important component of firm performance in literature. This argument is also considered important in Turkey.

We aimed to reach a conclusion that would lead us to the importance of corporate governance. Is corporate governance a reality for the companies or is it not as much important as it was introduced?

In this study we take ROA, leverage, financial debt to total assets ratio and ebitda to measure accounting performance, pbv to measure firm value and market performance.

According to the panel data analysis, board size has no significant relation to ROA, ebitda, leverage, fdta and pbv. Neither limited boards nor larger boards have any affects on corporate governance.

It is generally discussed in corporate governance literature that whether board composition with the independent members may have any positive effects on the firms. In our study board independence is negatively and significantly related to ROA. However, in robust test, we found board independence insignificant in explaining ROA. Our result suggests that board independence in Turkish firms is not associated with important performance measures. There is no link between board independence and firm performance.

In general, we may conclude that firms with more independent boards do not perform better than other firms.

Foreign ownership is positively and significantly ($p<0.10$) related to leverage. Foreign ownership is found to have negative effect on pbv. On the other hand, we found no relation between foreign ownership and other corporate governance variables.

We found no significant relationships between corporate governance variables and performance indicators in publicly held companies (floating rate).

Asset size is positively related to ebitda, pbv, leverage and negatively related to ROA. The direction signs of relations are all expected. The results of the model show that the ebitda of the firms is positively and significantly affected by firm size which is consistent with previous empirical works. On the other hand, increase in foreign ownership increases leverage. It indicates that foreign investors like to use leverage and also foreign ownership makes borrowing easier which is an assumption of this study.

Leverage ratio is statistically significant to corporate governance with a positive relationship to net sales and asset size and a negative relationship with ebitda.

This study searches the relationship between corporate governance and firm performance of the BIST 100 and Corporate Governance Index companies by using panel data analysis. The study includes 92 firms for the period of seven years from 2007 to 2013. This period also covers the financial crises which occurred in 2008 - 2009. We observed that during the crisis period (2008-2009), firm performance positively affected.

We believe that these companies are already using corporate governance principals and therefore observing the differences caused by corporate governance should not be easy. Therefore increasing the number of companies observed in these types of studies would provide further benefit. Additionally we did not consider the sector differences which make observing the effects more difficult. However this study presents the effect of ownership concentration and board structure together through using panel data analysis.

In this study we found no strong relationships between corporate governance practices and firm performance. Therefore Turkish firms should consider corporate governance practices as a value creator and performance developer. Otherwise these practices would be a symbol of another wave of modern organization implications. It is important to build confidence in investors, stakeholders and other institutions through reforms in corporate governance.

A country specific approach to corporate governance is required to capture the real diversity between firms and countries.

Consequently, this thesis was designed to provide a useful framework for firms in Turkey which are attempting to improve corporate governance mechanisms.

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Note : Below given article which was mainly derived from this thesis was published in April 2016.

Yılmaz, C., and Büyüklü, A. Hakan. (2016). Impacts of Corporate Governance on Firm Performance: Turkey Case with a Panel Data Analysis. *Eurasian Journal of Economics and Finance*, Vol.4, No.1, pp.56-72.

APPENDICES

Appendix 1 : Correlation Matrix with significance levels

	roa	lev	pbv	ebitda	fdta	orate	NS	BS	BI	FS	finv
roa	1.0000										
sig											
lev	-0.4064	1.0000									
sig	0.0000										
pbv	0.3116	0.0537	1.0000								
sig	0.0000	0.1731*									
ebitda	0.3611	0.2792	0.1584	1.0000							
sig	0.0000	0.0000	0.0002								
fdta	-0.3395	0.7274	-0.0352	0.3061	1.0000						
sig	0.0000	0.0000	0.3750*	0.0000							
orate	-0.1108	-0.2046	-0.0555	-0.2585	-0.1961	1.0000					
sig	0.0049	0.0000	0.1594*	0.0000	0.0000						
NS	0.2404	0.2612	0.1443	0.8203	0.2666	-0.2669	1.0000				
Sig	0.0000	0.0000	0.0003	0.0000	0.0000	0.0000					
BS	-0.1784	-0.2289	-0.1758	-0.5053	-0.2113	0.2886	-0.5112	1.0000			
Sig	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000				
BI	-0.2174	-0.2188	-0.1996	-0.4940	-0.2104	0.3392	-0.4570	0.9605	1.0000		
Sig	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			
FS	0.1437	0.1836	0.0499	0.8213	0.3335	-0.2784	0.7583	-0.4275	-0.4108	1.0000	
Sig	0.0003	0.0000	0.2086*	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
finv	0.1017	0.0852	0.0919	0.1997	0.1617	-0.3262	0.2724	-0.1961	-0.2392	0.1783	1.0000
sig	0.0098	0.0306	0.0196	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	

(*) insignificant variables (p > 0,1)

Appendix 2 : Regression Analysis Results for Models

Regression Model for ROA (Model 1)

```
. xtreg roa orate NS ebitda lev BS BI FS dfinv,re

Random-effects GLS regression                   Number of obs      =       559
Group variable: id                              Number of groups   =        89

R-sq:  within  = 0.4623                         Obs per group: min =         2
       between = 0.5845                                        avg =       6.3
       overall = 0.5424                                        max =         7

                                                Wald chi2(8)       =    519.13
corr(u_i, X)   = 0 (assumed)                    Prob > chi2        =    0.0000
```

roa	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
orate	-.7911507	2.107594	-0.38	0.707	-4.92196	3.339659
NS	.8815288	.4667151	1.89	0.059	-.0332159	1.796274
ebitda	4.659864	.2618414	17.80	0.000	4.146665	5.173064
lev	-8.263833	1.556348	-5.31	0.000	-11.31422	-5.213446
BS	6.886507	4.513479	1.53	0.127	-1.959749	15.73276
BI	-23.26548	14.57269	-1.60	0.110	-51.82742	5.296471
FS	-5.477946	.4417716	-12.40	0.000	-6.343802	-4.61209
dfinv	-1.027732	1.08157	-0.95	0.342	-3.147571	1.092107
_cons	24.39052	2.536013	9.62	0.000	19.42002	29.36101
sigma_u	4.2053217					
sigma_e	3.9260913					
rho	.53429927	(fraction of variance due to u_i)				

```
. xtqls roa orate NS ebitda lev BS BI FS dfinv, i(id) t(time) f(gau) vce(robust) c(AR 1)

Iteration 1: tolerance = .77874466
Iteration 2: tolerance = 1.664e-14

GEE population-averaged model                   Number of obs      =       559
Group and time vars:           id __00000S      Number of groups   =        89
Link:                             identity      Obs per group: min =         2
Family:                           Gaussian                     avg =       6.3
Correlation:              fixed (specified)                    max =         7
                                                Wald chi2(8)       =    142.95
Scale parameter:                  32.86796      Prob > chi2        =    0.0000

                                    (Std. Err. adjusted for clustering on id)
```

roa	Coef.	Robust Std. Err.	z	P>|z|	[95% Conf.	Interval]
orate	-.0855109	2.143688	-0.04	0.968	-4.287062	4.116041
NS	.9216884	.7837498	1.18	0.240	-.614433	2.45781
ebitda	4.533723	.9211514	4.92	0.000	2.7283	6.339147
lev	-7.444245	3.104396	-2.40	0.016	-13.52875	-1.359741
BS	9.408203	6.650499	1.41	0.157	-3.626534	22.44294
BI	-30.48504	20.54069	-1.48	0.138	-70.74405	9.773966
FS	-5.227853	.6109485	-8.56	0.000	-6.42529	-4.030416
dfinv	-.8442774	.9349206	-0.90	0.367	-2.676688	.9881334
_cons	22.12744	4.045637	5.47	0.000	14.19814	30.05674

Regression Model for lev (Model 2)

```
. xtreg lev orate NS ebitda BS BI FS,fe

Fixed-effects (within) regression               Number of obs      =       559
Group variable: id                              Number of groups   =        89

R-sq:  within  = 0.0657                         Obs per group: min =         2
       between = 0.1231                                        avg =       6.3
       overall = 0.1484                                        max =         7

                                                F(6,464)           =      5.44
corr(u_i, Xb)  = -0.0016                        Prob > F           =    0.0000

------------------------------------------------------------------------------
         lev |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
       orate |  -.0394962   .0629053    -0.63   0.530    -.1631108    .0841184
          NS |   .0344517   .0166969     2.06   0.040     .0016409    .0672625
      ebitda |  -.0157314   .0071752    -2.19   0.029    -.0298313   -.0016315
          BS |   -.278024   .2456983    -1.13   0.258    -.7608432    .2047952
          BI |    1.27471   .8395382     1.52   0.130    -.3750578    2.924478
          FS |   .0331364    .016033     2.07   0.039     .0016302    .0646427
       _cons |   .0482382   .0950373     0.51   0.612    -.1385187    .2349951
-------------+----------------------------------------------------------------
     sigma_u |  .20318144
     sigma_e |  .09513813
         rho |  .82017582   (fraction of variance due to u_i)
------------------------------------------------------------------------------
F test that all u_i=0:     F(88, 464) =    19.69                 Prob > F = 0.0000
```

```
. xtscc lev orate NS ebitda BS BI FS, fe

Regression with Driscoll-Kraay standard errors  Number of obs     =       559
Method: Fixed-effects regression                Number of groups  =        89
Group variable (i): id                          F(  6,    88)     =    950.68
maximum lag: 2                                  Prob > F          =    0.0000
                                                within R-squared  =    0.0657

------------------------------------------------------------------------------
             |               Drisc/Kraay
         lev |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
       orate |  -.0394962   .0465134    -0.85   0.398    -.1319318    .0529394
          NS |   .0344517   .0234562     1.47   0.145    -.0121626     .081066
      ebitda |  -.0157314   .0121822    -1.29   0.200    -.0399409    .0084782
          BS |   -.278024   .2744435    -1.01   0.314    -.8234229    .2673748
          BI |    1.27471   1.032899     1.23   0.220    -.7779605    3.327381
          FS |   .0331364   .0146613     2.26   0.026     .0040002    .0622726
       _cons |   .0482382   .0600848     0.80   0.424    -.0711677     .167644
------------------------------------------------------------------------------
```

Regression Model for pbv (Model 3)

```
. xtreg pbv lev orate NS ebitda BS BI FS,fe

Fixed-effects (within) regression               Number of obs      =       559
Group variable: id                              Number of groups   =        89

R-sq:  within  = 0.0717                         Obs per group: min =         2
       between = 0.0002                                        avg =       6.3
       overall = 0.0007                                        max =         7

                                                F(7,463)           =      5.11
corr(u_i, Xb)  = -0.5061                        Prob > F           =    0.0000
```

pbv	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
lev	.2531352	.6073392	0.42	0.677	-.9403476	1.446618
orate	1.518036	.8233078	1.84	0.066	-.0998473	3.135918
NS	.0388367	.2194363	0.18	0.860	-.3923777	.4700511
ebitda	.0876412	.0943544	0.93	0.353	-.0977748	.2730571
BS	.8493844	3.218777	0.26	0.792	-5.475836	7.174605
BI	-1.140704	11.0105	-0.10	0.918	-22.77744	20.49604
FS	.6897252	.2107144	3.27	0.001	.2756501	1.1038
_cons	-4.346011	1.24367	-3.49	0.001	-6.789948	-1.902075
sigma_u	2.1582723					
sigma_e	1.2446433					
rho	.75043208	(fraction of variance due to u_i)				

```
F test that all u_i=0:     F(88, 463) =    12.27                 Prob > F = 0.0000
```

```
. xtscc pbv lev orate NS ebitda BS BI FS, fe

Regression with Driscoll-Kraay standard errors  Number of obs     =       559
Method: Fixed-effects regression                Number of groups  =        89
Group variable (i): id                          F(  7,    88)     =  13463.25
maximum lag: 2                                  Prob > F          =    0.0000
                                                within R-squared  =    0.0717
```

pbv	Drisc/Kraay Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
lev	.2531352	.4853231	0.52	0.603	-.7113426	1.217613
orate	1.518036	.5823992	2.61	0.011	.3606396	2.675432
NS	.0388367	.1043971	0.37	0.711	-.1686307	.246304
ebitda	.0876412	.0159214	5.50	0.000	.0560007	.1192816
BS	.8493844	1.01221	0.84	0.404	-1.162171	2.860939
BI	-1.140704	4.405163	-0.26	0.796	-9.895041	7.613632
FS	.6897252	.2594994	2.66	0.009	.1740247	1.205426
_cons	-4.346011	1.581568	-2.75	0.007	-7.489045	-1.202978

Regression Model for ebitda (Model 4)

```
. xtreg ebitda orate NS lev BS BI FS ,fe

Fixed-effects (within) regression               Number of obs      =       559
Group variable: id                              Number of groups   =        89

R-sq:  within  = 0.4224                         Obs per group: min =         2
       between = 0.6806                                        avg =       6.3
       overall = 0.6355                                        max =         7

                                                F(6,464)           =     56.56
corr(u_i, Xb)  = -0.3741                        Prob > F           =    0.0000

------------------------------------------------------------------------------
      ebitda |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
       orate |    .0854336   .4050607     0.21   0.833     -.710547    .8814142
          NS |    1.170444   .0932963    12.55   0.000     .9871084     1.35378
         lev |    -.651785   .2972843    -2.19   0.029    -1.235975   -.0675946
          BS |   -.8586636   1.583186    -0.54   0.588    -3.969766    2.252439
          BI |    1.298816   5.416999     0.24   0.811    -9.346074     11.9437
          FS |   -.1560215   .1034214    -1.51   0.132    -.3592539    .0472109
       _cons |   -1.721749   .6066618    -2.84   0.005    -2.913894   -.5296041
-------------+----------------------------------------------------------------
     sigma_u |  1.0982778
     sigma_e |  .61238364
         rho |  .76283384   (fraction of variance due to u_i)
------------------------------------------------------------------------------
F test that all u_i=0:     F(88, 464) =     9.38                 Prob > F = 0.0000
```

```
. xtscc ebitda orate NS lev BS BI FS , fe

Regression with Driscoll-Kraay standard errors  Number of obs     =       559
Method: Fixed-effects regression                Number of groups  =        89
Group variable (i): id                          F(  6,    88)     =   1631.41
maximum lag: 2                                  Prob > F          =    0.0000
                                                within R-squared  =    0.4224

------------------------------------------------------------------------------
             |               Drisc/Kraay
      ebitda |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
       orate |    .0854336   .3223386     0.27   0.792    -.5551466    .7260138
          NS |    1.170444   .0489596    23.91   0.000     1.073147    1.267741
         lev |    -.651785   .4461917    -1.46   0.148    -1.538497    .2349273
          BS |   -.8586636   .5894572    -1.46   0.149    -2.030086    .3127588
          BI |    1.298816   1.592814     0.82   0.417    -1.866567    4.464199
          FS |   -.1560215   .0447835    -3.48   0.001    -.2450192   -.0670238
       _cons |   -1.721749   .3148998    -5.47   0.000    -2.347546   -1.095952
------------------------------------------------------------------------------
```

Regression Model for fdta (Model 5)

```
Random-effects GLS regression                   Number of obs      =       559
Group variable: id                              Number of groups   =        89

R-sq:  within  = 0.0863                         Obs per group: min =         2
       between = 0.2707                                        avg =       6.3
       overall = 0.2323                                        max =         7

                                                Wald chi2(7)       =     75.68
corr(u_i, X)   = 0 (assumed)                    Prob > chi2        =    0.0000
```

fdta	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
orate	-.0410076	.0475844	-0.86	0.389	-.1342713	.0522561
NS	.0103848	.0110312	0.94	0.346	-.011236	.0320055
ebitda	-.0163457	.0055694	-2.93	0.003	-.0272616	-.0054298
BS	.1198841	.1193446	1.00	0.315	-.114027	.3537953
BI	-.2647626	.3893092	-0.68	0.496	-1.027795	.4982694
FS	.0574035	.0105795	5.43	0.000	.0366681	.0781389
dfinv	.0511847	.0292349	1.75	0.080	-.0061145	.108484
_cons	-.2106803	.0629382	-3.35	0.001	-.3340368	-.0873238
sigma_u	.12954434					
sigma_e	.08015669					
rho	.72313776	(fraction of variance due to u_i)				

```
. xtqls fdta orate NS ebitda BS BI FS dfinv, i(id) t(time) f(gau) vce(robust) c(AR 1)

Iteration 1: tolerance = .12055455
Iteration 2: tolerance = 1.949e-15

GEE population-averaged model                   Number of obs      =       559
Group and time vars:           id __00000S      Number of groups   =        89
Link:                             identity      Obs per group: min =         2
Family:                           Gaussian                     avg =       6.3
Correlation:             fixed (specified)                     max =         7
                                                Wald chi2(7)       =     47.76
Scale parameter:                  .0227967      Prob > chi2        =    0.0000

                                    (Std. Err. adjusted for clustering on id)
```

fdta	Coef.	Robust Std. Err.	z	P>|z|	[95% Conf.	Interval]
orate	-.0249414	.0470906	-0.53	0.596	-.1172374	.0673545
NS	-.0023104	.0124614	-0.19	0.853	-.0267343	.0221135
ebitda	-.0111017	.0065027	-1.71	0.088	-.0238468	.0016434
BS	.0005676	.0997041	0.01	0.995	-.1948489	.1959841
BI	.1392138	.3242154	0.43	0.668	-.4962367	.7746642
FS	.071072	.0125998	5.64	0.000	.0463768	.0957671
dfinv	.0443424	.0304536	1.46	0.145	-.0153456	.1040304
_cons	-.2516138	.0793274	-3.17	0.002	-.4070926	-.0961349

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