2528-9705

Örgütsel Davranış Araştırmaları Dergisi
Journal Of Organizational Behavior Research
Cilt / Vol.: 3, Sayı / Is.: S2, Yıl/Year: 2018, Kod/ID: 81S270

INVESTIGATING THE EFFECT OF DEPRESSION ON CORPORATE GOVERNANCE AND FIRM VALUE IN TEHRAN STOCK EXCHANGE

Adalat NOBAHAR GHARAKHANLOU, Mohammad NASIRI*

Department of Humanities, Shabestar Branch, Islamic Azad University, Shabestar, Iran.

***Corresponding Author:**
Email: mohammadnasiri1359@gmail.com

ABSTRACT

The study aimed to investigate the effect of the depression on corporate governance and firm value in the Tehran Stock Exchange has been performed, that has been investigated four hypotheses. As well, the study in term of objective is applied research. The study sample consisted of 171 companies listed on Tehran Stock Exchange in period from 2011 to 2015, and the statistical sample is also elimination. The results of the study showed that macroeconomic changes like changes in gross domestic product (GDP) has any effect on the stability or change of managers of companies active in the Iranian capital market and macroeconomic changes (such as decrease in GDP) can have consequences on the micro level, one of which is the increase in firm value of active companies in the Tehran Stock Exchange. News about changes in the firm CEO could not be considered as a change in the firm value. Macroeconomic changes (such as the economic depression) also cannot create a correlation between the change in the firm director and firm value.

Keywords: *Depression, Corporate Governance, Firm Value, Management Cycle*

INTRODUCTION

With the expansion of financial markets in the worldwide, problem like the management cycle and firm value and corporate governance in the world of accounting, management, economics and other sciences are considered with special sensitivity, and every scholars and researchers has studied their sciences and interpreted their results. Economic conditions have a significant effect on the improvement of the features and governance structure of the firm. The economic depression is not a new phenomenon, and worldwide economies have repeatedly fallen into depression and get rid of depression. In this research, the effect of changing the business turnover has been examined on the correlation between corporate governance and firm value. This research contributes to the literature on the correlation between market conditions and corporate governance. Hence, we investigate the effect of macroeconomic environment on the correlation between firm governance and firm value. As managers have such ability and control over the firm which they can pursue their individual intends instead of maximizing shareholder wealth, so directors are in a state of empowerment. Additionally, in this study we investigate the effect of circulation of directors and their empowerment on the firm value under various economic conditions. In this regard, measures of corporate executives can aggravate bad economic conditions or even prolong them. The regulation outside of the company or by the company itself may be necessary in order to avoiding the increase of the authority of directors and their excess profits during the period of macroeconomic depression.

Geliş tarihi/Recieved: 14.11.2017 – Kabul tarihi/Accepted: 27.02.2018 – Yayın tarihi/Published: 21.08.2018

Statement of problem

After the financial and accounting scandals of the early third millennium, investors, industry stakeholders and professional groups, and law enforcement agencies showed their interest in getting more information about corporate governance procedure and their value. Philipon (2006), by presenting a theoretical model has shown that firms with an undesirable governance structure are severely respond to massive shocks compared to firms with favorable governance structures. Today, the importance of corporate governance and firm value for the success of companies is uncertain as it has become more important given the recent events of financial corporations. The study of the causes and pathology of the collapse of some large firms, which has had a massive loss, especially for shareholders, has been the result of the weakness of their corporate governance systems. Research reveals that corporate governance can improve corporate standards, encourage, provide and equip capital and investors and improving their business activities, and one of the reasons for improving the firm economic efficiency is due to the correlation between shareholders, CEO, managers and other stakeholders. According to the fact that during the depression increases the pressure of the managers, they will be forced by the industry. We also looked at the issue of whether managers' empowerment was affected by the business turnover or not? In addition, the results indicate that the impact of the empowerment on the firm value is sensitive to the changes of the economy. Considering the fact that previous studies have examined the correlation between corporate governance and firm value with other variables, we examine the correlation between corporate governance and firm value with the economic variable, ie, depression, to consider the status of the firm in terms of governance and how is the firm value in depression and there are also years of empowerment exist among our examples, which we can well recognize by examining these years of empowerment. Therefore, the corporate governance and firm value are influenced by many variables, and this study examined whether corporate governance is related to firm value and how this correlation is in a depression.

Importance of study

In this study, the correlation between corporate governance and firm value in different stages of the business turnover has been investigated. According to our hypothesis, it is expected that bad economic conditions will increase industry turnover. An increase in industry turnover is expected to lead to an increase in industry pressure on managers and, consequently, to increase their efforts to maintain shareholder satisfaction. This study also examines the effect of economic conditions on the level of managers' empowerment. The results show a significant increase in managers' empowerment during the depression. In general, it is predicted that companies will increase anti-permissive measures in times of severe economic conditions to prevent non-state secession. In addition, we stated that bad economic conditions give the managers a good opportunity to camouflage their measures and make more personal profits. In such conditions, managers may abuse the position and attribute weak performance to the depression. Hence, it is expected agency problems increased during the depression. As results, increasing the managers' empowerment leads to a reduction in the firm value and ultimately leads to bad economic conditions. In addition, we examined the effects of industry turnover and managers' empowerment on the firm value under different economic conditions. Considering the fact that the study is an applied research, it examined the correlation of variables and describes the relations between variables and examines efforts to improve behaviors and methods. The

statistical population of this research is the stock exchange companies. Therefore, the users of this research are market analysts of capital, investors and creditors, and stock exchange and stock exchange companies.

Objectives of study

In this study we are addressing the following objectives:

1. Investigating the correlation between economic depression and corporate governance
2. Investigating the correlation between the economic depression and firm value
3. Investigate the correlation between corporate governance and firm value
4. Investigating the effect of economic depression on the correlation between corporate governance and firm value

THEORETICAL BACKGROUND

A view of corporate governance reveals that corporate governance should be such as to limit the damage caused by the abuse of manager's power. Followers of this view argue that tracking stakeholder or investor interests as the highest objective of the company may be eliminated by the behavior of managers. In this regard, directors may take action that is inaccurate and it is impossible to predict their results at a given time.

Governance mechanisms can be used to reflect the principles of transparency, presentation and disclosure as well as accountability, but should be reviewed periodically. As firm CEO abuses its power, it causes inefficiencies at the micro level but if the firm is very big, so we will have a problem at the macro level. In designing governance systems, all investor should be addressed. The best option for the owners is to design control measures in a way that converts the performance of the firm to the most efficient state by matching the interests of directors and stakeholders. The stakeholder theory reveals that firms must pay attention to different stakeholder groups, rather than focusing on investors according to the traditional view. These various groups include customers, suppliers, staff, society and stakeholder all benefit of firm. So, the proponents of this perspective declare that effective governance for representatives of the beneficiary groups must be present on the board of directors. As a result, the theory focused the role of non-commercial mechanisms such as the need to specify the optimal size of the board of directors and the need for creating specific committees. Such structures will create committees such as valuation committees (such as the board of directors) and control committees (such as the audit committee) (Hasas Yeganeh, 2006).

Fos and Danso (2016) in a study examined the informational asymmetric, finance leverages and firm value are effective in crisis and growth? Their empirical results which have been gathered using a large sample of British firms show that informational asymmetry has a negative impact on the value, and this effect is reduced by the leverage of the company.

They also found that the leverage had a negative effect on the firm value, and that the leverage effect was lower for firms with asymmetric information. (Samuel Fosu et al., 2016)

Dah and Kassar (2016), in a study entitled corporate governance and firm value have been examined the effect of depression on this factors. The bad economic conditions give the managers a good opportunity to camouflage their measures and make more personal profits. In such conditions, directors may abuse the position and attribute weak performance to the depression.

McDonell (2015) in a study addressed corporate governance. He declared that there is a different between the definition of company laws and the role of decision making in the various stakeholder groups of firm. If the objective in firm affairs is to concentrate only on stock prices, it cannot be used to pursue other goals, such as defending the rights of creditors, staffs and shareholders.

Nikanor and Smith (2014) in a study addressed the issue of firm diversification and its value during the business turnover. They revealed that diverse companies, on average, have a remarkable leverage. Such companies tend to reduce their leverage during the period of relative depression in their individual sectors. They proved that diversified companies increased their relative leverage after the 2001 depression, but this increase was not accompanied by an increase in the relative value of diversified companies. In contrast, as diversified firm have leverage after the depression; their relative value has decreased to level before depression.

They concluded that within the business turnover, diversified firms would not increase their financial leverage toward one-part firms (Nikanor and Smith, 2014)

Nourbakhsh et al (2016) examined the corporate governance and financial crisis in listed companies in Tehran Stock Exchange. They addressed four mechanisms of corporate governance (the independence of the board of directors and the duality of CEO duties and institutional ownership and the type of audit statements) and they concluded that the variable of the board of directors and the variable of institutional ownership and the type of auditor's statement's had a negative and significant correlation with the financial crisis and the duality variable has a positive and significant correlation with the probability of a bankruptcy.

Mehrani and Norouzi (2015) in a study investigated the effect of corporate governance on the correlation between firm value and earnings management. Their research results show that shareholders know earnings management as opportunity, and profit management has a negative effect on the firm value, but this effect decreases in companies with strong corporate governance.

Gharehbagh and Mohammadi (2014) in a study addressed the effect of financial security models on financial performance of companies under the conditions of economic fluctuations. The results of the hypothesis show that there is a positive linear correlation between the debt and debt ratio and the linear correlation between the debt and earnings per unit of sales and the positive linear correlation between the share of shareholders and the profits of each unit of equity and the positive linear correlation between the share of shareholders and profit of each sales unit.

Mahdavi et al (2013) in a study investigate the effect of corporate governance characteristics on predicted earnings quality by management of listed companies in Tehran Stock Exchange. The results of their research showed that only the financial leverage variable had a negative effect on both the accuracy and the predicted profit by management. In fact, if the financial leverage to be greater, the predicted profit quality will be reduced by management.

Tabar and Ashae (2012) in a study examined the correlation between corporate governance mechanisms and the performance of companies listed on the Tehran Stock Exchange. In this research, the correlation between corporate governance mechanisms and the performance of companies listed on Tehran Stock Exchange has been investigated. According to the results of the study, it seems that the non-executive members of the board of directors have been successful as one of the most important mechanisms of corporate governance in Iran in influencing the

performance of firms. In the representation theory, what is expected from board of directors is to reduce the conflict of interests between shareholders and directors.

Abbasi and Ahmadi (2012) in a study investigated the correlation between corporate governance and the presence of institutional investors in board of directors and firm value; they concluded that institutional ownership is positively and significantly related to the firm value. It means, effective presence of institutional owners in the ownership structure of the firms, improve the firm value, because these types of investors are looking for better profit and performance and with the influence and control in the ownership structure of firms, they seek to achieve this goal.

Hassanzadeh et al. (2012) addressed the correlation between some of the mechanisms of corporate governance with value created for equity holders and economic value added. The results of testing hypothesis reveal that there is a positive correlation between the amount of shares owned by institutional investors with the value created for shareholders and economic value added. According to the theoretical foundations, institutional investors, using voting rights influence the decision making and structure of the firm board of directors and can be one of the sources for monitoring the performance of the firm management. As well, the results of the research show a positive correlation between the centralized structure and the value created for the shareholders. In contrast the results of testing the second main hypothesis showed that there is no correlation between the firm ownership structure and economic value added because it is due to focus on a strong concentration of ownership.

Hasas Yeganeh and Molodi (2011) in a study investigated the correlation between corporate governance and the value created for shareholders. In this study, the correlation between the percentage of ownership of institutional shareholders, the concentration of institutional shareholders, the reward of the board of directors, non-executive directors, and the separation of the duties of the CEO and the chairman or vice chairman of the board of directors as a mechanism of corporate governance with value created for shareholders as a measure of performance has been examined. The results of testing hypothesis showed that, first, in the companies that have created value, there is direct and significant correlation between the reward of the board and the value created for the shareholders. Second, in companies that have lost value, there is a direct and significant correlation between the degree of concentration of institutional shareholders and the value created for shareholders.

Third, in companies that have lost value, there is a reversed and significant correlation between the ratio of non-executive directors and remuneration of the board with the value created for shareholders. Fourth, there was no significant correlation between the percentage of ownership of institutional shareholders and the separation of the CEO's duties from the chairman or vice chairman of the board of directors with value created for shareholders. (Hasas Yeganeh and Molodi, 2011)

Vakili Fard and Bavandpour (2010) in a study investigate the effect of corporate governance on the performance of listed companies in Tehran Stock Exchange. In this study, they concluded that there is a significant and positive correlation between the existence of institutional shareholders and the performance of companies, and the presence of major shareholders in the ownership structure of companies does not have much effect on their performance. The ratio of the presence of unaudited members of the board of directors in the composition of the board of directors has a significant and reverse correlation with the performance of companies, and also the quality of financial information is not related to the performance of companies.

Asadi et al (2009) in a study examine the effect of intellectual capital on market value of the company. The results of the testing the main hypothesis of the research that is "companies with a higher coefficient of intellectual capital, has higher market value to book value ratio ", show that there is a positive and significant correlation between the coefficient of value added of intellectual capital and market value to book value ratio.

Qalibaf and Moshabaki (2009) in a study investigate the effect of ownership structure (concentration and composition) on the returns and value of companies listed on Tehran Stock Exchange. The results show that there is a linear and significant positive correlation between the two factors of ownership concentration and company returns and the absence of any significant correlation between centralized ownership and firm value. On the other hand, the results of the test of the effects of the ownership type show that contrary to the inverse correlation between stock returns and state ownership ratio, there is a direct and significant correlation between individual, corporate and private ownership with returns. However, the ownership concentration variable in all models has a direct linear correlation with stock returns. The test of the correlation between the types of property with firm value led to similar results with what was said about returns.

METHODOLOGY

Research Method

Accounting research can be categorized based on 5 bases. This research:

In terms of purpose, it is applied research because the results are used by a wide range of users.

In terms of nature: it is a correlational research is an attempt to examine the correlation and effect of numerous variables on each other.

In terms of time: it is a retrospective study. Because of the information about the past events of the typical members it is used.

In terms of the logic of implementation: it is an inductive research because the result of study is generalized to the whole society based on limited observations (examples).

In terms of data nature: it is a quantitative study because the variables of the research are measured and used in numbers and figures.

Instruments and method of data collection

Considering the fact that the data in the stock market companies is needed in this study, this data is available on the Stock Exchange website and all data is extracted from this site and data on economic indicators such as GDP is available at the Central Bank website and it is downloaded from this site. Therefore, the method of collecting data is library. Updated data about the companies and the central bank that is available on the site can be downloaded through the Internet therefore the tool instrument for data collection is databases and computer networks.

Data analysis (application of statistics in this research)

The purpose of analyzing research data is to use descriptive statistics and inferential statistics in relation to the statistical data measured in relation to the variables of the research as well as their application in hypothesis testing.

Descriptive Statistics

In this section, the acronyms used in the variables of the research and the indicators of the dispersion and central variables are shown.

Table 1: Acronyms of variables used in the analysis

Symbol	Variable	Variable role
TURNOVER	Corporate Governance (Changing CEO)	Dependent and independent
QTOBIN	firm value	Dependent
RDUMMY	Economic dispersion	Independent and moderator
SIZE	Firm size	Control
CAPX	Capital expenditures	Control
LEV	Financial leverage	Control
LIQ	Current ratio	Control
ROA	Asset return rate	Control
INDEPEN	Independence of the board of directors	Control
GDP	Gross Domestic Product	Control

The variables of the research and how they are measured

Independent, dependent and moderating variables

- **Corporate Governance (turnover)**

In this research, the purpose of corporate governance is to change the management of the firm. The above variable is an artificial variable (virtual) that operates with 0 and 1. If the firm management changes during current year, the corporate governance variable (change of CEO) in relation to the target company is equal to 1, otherwise is equal to 0(Dah, 2016). This variable is related to the first hypothesis as the dependent variable and in the third and fourth hypotheses plays the role of an independent variable.

- **Firm Value (Qtobin)**

In order to operate the firm value variable, the Tobin ratio is used. The Tobin ratio equals the sum of the equity market value and the book value of the firm debt divided by the book value of the total assets (Dah, 2016).

This variable is not available in the first hypothesis of the research, but in the second, third and fourth hypotheses played the role of the dependent variable.

- **Economic Dispersion (Rdummy)**

It is a virtual variable with a value of 1 and 0. If the Gross Domestic Product (GDP) is less than the average GDP during the years 2006 to 2016, the depression variable will be equal to 1, otherwise it will be 0 (Oh, 2016). The variable of economic depression in the first and second hypotheses is the independent variable and in the fourth hypothesis plays the role of the moderator variable.

Control variables

SIZE: it is firm size that is obtained by calculating the natural logarithm of the total assets of the company at the end of the fiscal year (Dah, 2016).

Capx: it is the firm capital expenditures in current year that are generated by dividing the amounts invested in non-current assets into total assets (Dah, 2016).

LEV: it is the financial leverage that comes from dividing the total debt into all company assets at the end of the fiscal year (Dah, 2016).

Liq: it is the liquidity of a company that operates using the current ratio (current assets divided by current liabilities) (Dah, 2016).

ROA: it is the return on equity (profitability index) that results from dividing the net profit of the firm by the total assets of the firm at the end of the fiscal year (Dah, 2016).

Indepen: it is independence of the CEO, which results from the division of the number of non-executive members of the board of directors on the total number of members of the board of directors (Dah, 2016).

GDP: it is GDP in the current year (Dah, 2016).

statistical population

In this study, statistical population consisted of the companies listed in the Tehran Stock Exchange (Ranjbaran, 2009).

Sample size and sampling

In this research, systematic deletion method was used for sampling. Thus, considering the statistical society (all companies admitted to the stock exchange until 2015) sample of has been selected as follows. Of the statistical population, only 171 companies have met all of these criteria and are therefore used as examples in this study.

The criteria used to sample selection are as follows:

1. Companies that have been in the stock market during the research period (2011-2011).
2. Companies whose fiscal year ends on March 29th
3. Companies that are not part of leasing companies and not financial intermediaries
4. Information about them will be available within the research period (2011-2011)

Companies that do not include these criteria will be systematically excluded, meaning that they will be excluded from their selection as a sample.

After considering all of the above criteria, 171 companies have remained as a screened community, all of which have been selected as research samples. Therefore, our observations reach the 855-year firm (5 years × 171 companies) during the period from 2011 to 2015.

Research hypotheses

According to the above, and the importance and objectives of the research, the hypotheses of the research are as follows:

1. Depression affects corporate governance.
2. Depression affects firm value.
3. Corporate governance affects firm value.
4. The economic depression affects the correlation between corporate governance and firm value.

Research empirical models

The model used to test the first hypothesis of the research

$$Turnover = a + B1\ Rdummy + B2\ Size + B3\ Capx + B4\ Lev + B5\ Liq + B6\ Roa + B7\ indepen + B8\ GDP + \varepsilon$$

The model used to test the second hypothesis of the research

$$Qtobin = a + B1\ Rdummy + B2\ Size + B3\ Capx + B4\ Lev + B5\ Liq + B6\ Roa + B7\ indepen + B8\ GDP + \varepsilon$$

The model used to test the third hypothesis of the research

$$Qtobin = a + B1\ turnover + B2\ Size + B3\ Capx + B4\ Lev + B5\ Liq + B6\ Roa + B7\ indepen + B8\ GDP + \varepsilon$$

The model used to test the fourth hypothesis of the research

$$Qtobin = a + B1\ turnover + B2\ Rdummy + B3\ turnover^{*}Rdummy + B4\ Size + B5\ Capx + B6\ Lev + B7\ Liq + B8\ Roa + B9\ indepen + B10\ GDP + \varepsilon$$

RESULTS

In this research, descriptive statistical methods were used to analyze the collected data and test the hypotheses. Data were analyzed by EVIEWS software.

Table 2: Descriptive statistics for research variables-numbers in millions of Rials

	CAPX	GDP	INDEPEN	QTOBIN	TURNOVER	SIZE
Mean	0.260010	2083842.	0.686558	1.387781	0.278363	14.11435
Median	0.218165	2028481.	0.600000	1.212055	0.000000	13.86682
Maximum	0.849634	2349028.	1.000000	6.145156	1.000000	19.10620
Minimum	0.019015	2005873.	0.000000	-0.844906	0.000000	10.16654
Std. Dev.	0.178736	133058.6	0.182913	0.888226	0.448455	1.563191
Skewness	0.981165	1.478213	-0.405529	1.194706	0.989027	0.840629
Kurtosis	3.389934	3.220992	3.177248	5.000109	1.978174	4.007623
Observations	855	855	855	855	855	855

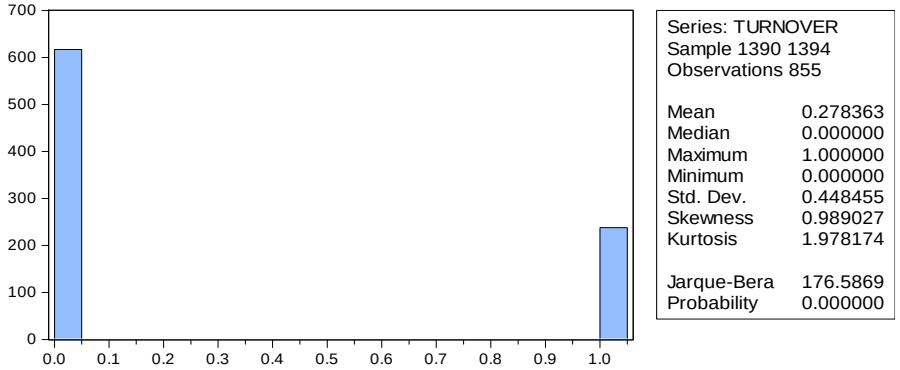
LEV	RDUMMY	LIQ	ROA
0.607006	0.600000	1.449667	0.111903
0.611503	1.000000	1.223324	0.095927
2.077506	1.000000	13.15063	0.626784
0.090164	0.000000	0.223282	-0.789647
0.222749	0.490185	1.006993	0.140371
0.771541	-0.408248	5.103274	0.167091
6.700477	1.166667	44.38510	6.204839
855	855	855	855

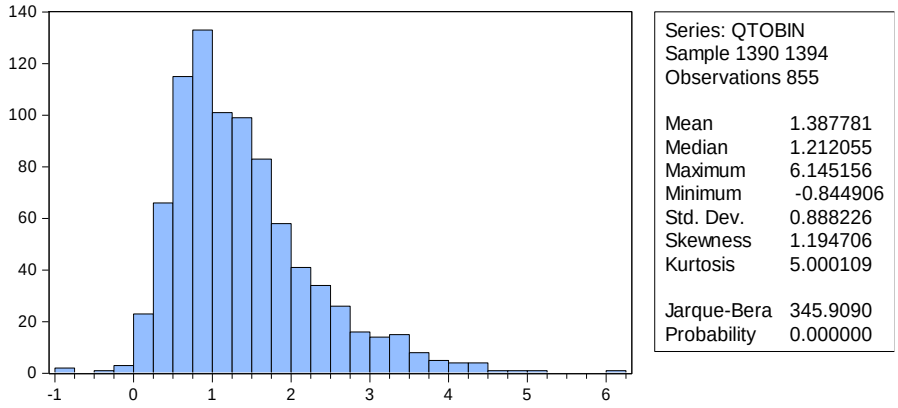
According to Table 4-2, entitled descriptive statistics, as it is obvious that the mean (median) for the CAPX variable is equal to 0.26 (0.21), for the GDP variable is 2083842 (2028481) for INDEPEN variable is equal to 0.68 (0.60), for QTOBIN variable 1.38 (1.21), TURNOVER variable is 0.27 (0), for SIZE variable is equal to 14.11 (13.86), for LEV variable is equal to 0.60 (0.61), for RDUMMY variable is 0.60 (1), for LIQ variable is 1.44 (1.22), for ROA variable is equal to 0.11 (0.09).

Normalization of the dependent variable of the research

To test the normality of the dependent variables of the research models, the Jarque-Bera test has been used. The significance level of the Jarque-Bera test is less than 0.05. Therefore, according to the table below, the dependent variable of the research is not normal.

Table 3: Testing the normality of dependent variables





Qtobin	Turnover	Variable
345.90	176.58	Jarque-Bera statics
0.0000	0.0000	significant level
Smaller	Smaller	Compared to 0.05
Is not normal	Is not normal	Test result

* Source: writer results

One of the needed assumptions (conditions) for using the linear regression model to test the research hypothesis is the normality of the dependence variables. According to the results of the Jarque-Bera test, as it is known that the data related to the dependent variables of the research do not follow the normal distribution, under these conditions, there are 3 ways:

1. Using nonparametric tests (such as Spearman correlation coefficient)
2. Normalizing the dependent variable and using the regression model to test the research hypotheses.
3. Ignoring the non-normality of the data related t the dependent variable due to the high number of observations (year-firm) and using parametric tests (multiple linear regression model).

It is clear; the third solution prefer to the first and second solutions, because normalizing the data (second solution) lead to the manipulation and destroying the data, which makes the research results not sufficiently reliant. On the other hand, the use of non-parametric tests (first solution) is not necessary for parametric tests and it is better to use parametric tests such as linear regression model.

Since in the study, the number of observations (year-firm) in relation to each of the variables (such as dependent variables of the research) is equal to 855, and this amount is considered to be high statistical rules, so in this research, the third solution can be used to analyze the data. So, we use multiple linear regression models in order to analyze the data in the present study and because of the large value of observation (year-firm), normalization of data related to dependent variables does not create a problem and the results of the statistical analysis will be sufficiently relied upon.

Analysis of stationarity of research variables

Table 4: analysis of stationarity of research variables (Hadri unit root test)

Null Hypothesis: Stationarity Series: CAPX Date: 06/02/17 Time: 05:31 Sample: 2011 2015 Exogenous variables: Individual effects Newey-West automatic bandwidth selection and Bartlett kernel Total (balanced) observations: 855 Cross-sections included: 171		
Method	Statistic	Prob.**
Hadri Z-stat	21.3266	0.0000
Heteroscedastic Consistent Z-stat	22.3427	0.0000

Null Hypothesis: Stationarity Series: GDP Date: 06/02/17 Time: 05:31 Sample: 2011 2015 Exogenous variables: Individual effects Newey-West automatic bandwidth selection and Bartlett kernel Total (balanced) observations: 855 Cross-sections included: 171		
Method	Statistic	Prob.**
Hadri Z-stat	13.3255	0.0000
Heteroscedastic Consistent Z-stat	13.3255	0.0000

Null Hypothesis: Stationarity Series: INDEPEN Date: 06/02/17 Time: 05:31 Sample: 2011 2015 Exogenous variables: Individual effects Newey-West automatic bandwidth selection and Bartlett kernel Total (balanced) observations: 745 Cross-sections included: 149 (22 dropped)		
Method	Statistic	Prob.**
Hadri Z-stat	18.9201	0.0000
Heteroscedastic Consistent Z-stat	26.9160	0.0000

Null Hypothesis: Stationarity Series: LEV Date: 06/02/17 Time: 05:32 Sample: 2011 2015 Exogenous variables: Individual effects Newey-West automatic bandwidth selection and Bartlett kernel Total (balanced) observations: 855 Cross-sections included: 171		
Method	Statistic	Prob.**
Hadri Z-stat	23.2475	0.0000
Heteroscedastic Consistent Z-stat	22.3601	0.0000

Null Hypothesis: Stationarity Series: LIQ Date: 06/02/17 Time: 05:32 Sample: 2011 2015 Exogenous variables: Individual effects Newey-West automatic bandwidth selection and Bartlett kernel Total (balanced) observations: 855 Cross-sections included: 171		
Method	Statistic	Prob.**
Hadri Z-stat	18.9500	0.0000
Heteroscedastic Consistent Z-stat	23.5953	0.0000

Null Hypothesis: Stationarity Series: QTOBIN Date: 06/02/17 Time: 05:32 Sample: 2011 2015 Exogenous variables: Individual effects Newey-West automatic bandwidth selection and Bartlett kernel Total (balanced) observations: 855 Cross-sections included: 171		
Method	Statistic	Prob.**
Hadri Z-stat	22.5696	0.0000
Heteroscedastic Consistent Z-stat	23.0697	0.0000

Null Hypothesis: Stationarity Series: RDUMMY Date: 06/02/17 Time: 05:32 Sample: 2011 2015 Exogenous variables: Individual effects Newey-West automatic bandwidth selection and Bartlett kernel Total (balanced) observations: 855 Cross-sections included: 171		
Method	Statistic	Prob.**
Hadri Z-stat	23.3923	0.0000
Heteroscedastic Consistent Z-stat	23.3923	0.0000

Null Hypothesis: Stationarity Series: ROA Date: 06/02/17 Time: 05:32 Sample: 2011 2015 Exogenous variables: Individual effects Newey-West automatic bandwidth selection and Bartlett kernel Total (balanced) observations: 855 Cross-sections included: 171		
Method	Statistic	Prob.**
Hadri Z-stat	19.9108	0.0000
Heteroscedastic Consistent Z-stat	23.0473	0.0000

Null Hypothesis: Stationarity Series: SIZE Date: 06/02/17 Time: 05:33 Sample: 2011 2015 Exogenous variables: Individual effects Newey-West automatic bandwidth selection and Bartlett kernel Total (balanced) observations: 855 Cross-sections included: 171		
Method	Statistic	Prob.**
Hadri Z-stat	26.9219	0.0000
Heteroscedastic Consistent Z-stat	25.7123	0.0000

Null Hypothesis: Stationarity Series: TURNOVER Date: 06/02/17 Time: 05:33 Sample: 2011 2015 Exogenous variables: Individual effects Newey-West automatic bandwidth selection and Bartlett kernel Total (balanced) observations: 705 Cross-sections included: 141 (30 dropped)		
Method	Statistic	Prob.**
Hadri Z-stat	14.6712	0.0000
Heteroscedastic Consistent Z-stat	18.7049	0.0000

According to the above table, the significance level of the Hardi Z statistic for all variables is less than 5% and this evidence suggests that there is no unit root problem for any of the variables. So, it can be concluded that all of the variables used in the regression models of the research are static during the research period.

Testing the hypothesis of the research

Testing the first hypothesis

In order to testing the first hypothesis of the research, the binary logistic regression model is used.

The reason for using the binary regression model to test the first hypothesis is virtuality of the dependent variable of this hypothesis; it means the virtual variable of corporate governance (change of CEO) that only operates with numbers 0 and 1. The reason why the logistic method is used to calculate the binary regression model is that the dependent variable of corporate governance (change of CEO) according to the results of the Jarque-Bera test is not distributed normally.

$$Turnover = a + B1\ Rdummy + B2\ Size + B3\ Capx + B4\ Lev + B5\ Liq + B6\ Roa + B7\ indepen + B8\ GDP + \varepsilon$$

Table 5: Results from estimating model 1 to binary logistics / dependent variable: Turnover

Dependent Variable: TURNOVER Method: ML - Binary Logit (Newton-Raphson / Marquardt steps) Date: 06/02/17 Time: 06:00 Sample: 2011 2015 Included observations: 855 Convergence achieved after 4 iterations Coefficient covariance computed using observed Hessian

Variable	Coefficient	Std. Error	z-Statistic	Prob.
C	0.430003	1.970842	0.218182	0.8273
RDUMMY	-0.027693	0.206454	-0.134136	0.8933
SIZE	0.005575	0.051668	0.107896	0.9141
CAPX	0.003501	0.481092	0.007276	0.9942
LEV	0.405894	0.529150	0.767069	0.4430
LIQ	0.076790	0.100152	0.766732	0.4432
ROA	-1.713148	0.746507	-2.294887	0.0217
INDEPEN	0.587531	0.438456	1.339999	0.1802
GDP	-9.76E-07	7.79E-07	-1.253582	0.2100
McFadden R-squared	0.140844	Mean dependent var		0.278363
S.D. dependent var	0.448455	S.E. of regression		0.446419
Akaike info criterion	1.186295	Sum squared resid		168.5990
Schwarz criterion	1.236307	Log likelihood		-498.1411
Hannan-Quinn criter.	1.205447	Deviance		996.2823
Restr. deviance	1011.294	Restr. log likelihood		-505.6471
LR statistic	15.01202	Avg. log likelihood		-0.582621
Prob(LR statistic)	0.008912			
Obs with Dep=0	617	Total obs		855
Obs with Dep=1	238			

According to Table 5, the significance level of the Z statistic for the independent variable RDUMMY with the value -0.02 is equal to 0.8933, which is more than 5%. That is, the RDUMMY variable does not have a significant effect on the dependent variable. So, according to the first hypothesis of the study, the economic dispersion affects corporate governance (changing CEO), is not confirmed.

Testing the second hypothesis

Before estimating the regression model above, it is necessary to determine the type of data related to the hypothesis test, for integration (money) or panel. In this regard, F Limmer Test is used to determine the panel or the money status of the data. It is also necessary to explain that, as a result of the F lemmer test, data relating to a model, panel, is required. Another test, called Hausman's test, will be performed on the data of the relevant model to determine whether the panel data has either fixed effects or random effects.

In order to test the second hypothesis of the research, a multiple linear regression model is used:

Model 2:

Qtobin = a + B1 Rdummy +B2 Size + B3 Capx + B4 Lev + B5 Liq + B6 Roa + B7 indepen + B8 GDP + ε

Table 6: F Limmer test in relation to model data 2

Redundant Fixed Effects Tests Equation: Untitled Test cross-section fixed effects			
Effects Test	Statistic	d.f.	Prob.
Cross-section F	5.236451	(170,676)	0.0000
Cross-section Chi-square	718.381614	170	0.0000

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

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	41.343123	8	0.0000

In this step, since the data related to the given model are panel-fixed effects, we used given model to test the hypothesis fitness. The results of fitting the model are as follows:

Table 7: Results of the estimation of model 2 by the panel- fixed effect method/dependent variable: QTOBIN

Dependent Variable: QTOBIN Method: Panel Least Squares Date: 06/02/17 Time: 06:07 Sample: 2011 2015 Periods included: 5 Cross-sections included: 171 Total panel (balanced) observations: 855				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	7.521218	1.110093	6.775306	0.0000
RDUMMY	0.584139	0.044138	13.23442	0.0000
SIZE	-0.425314	0.069158	-6.149860	0.0000
CAPX	-0.206803	0.203964	-1.020131	0.3110
LEV	-1.085417	0.180258	-6.021466	0.0000
LIQ	-0.102378	0.038934	-2.629542	0.0087
ROA	2.750197	0.223284	12.31703	0.0000
INDEPEN	-0.164004	0.144264	-1.136838	0.2560
GDP	8.88E-08	1.43E-07	0.622982	0.5335
Effects Specification				
Cross-section fixed (dummy variables)				
R-squared	0.836732	Mean dependent var		1.387781
Adjusted R-squared	0.793742	S.D. dependent var		0.888226
S.E. of regression	0.403393	Akaike info criterion		1.205996
Sum squared resid	110.0030	Schwarz criterion		2.200671
Log likelihood	-336.5634	Hannan-Quinn criter.		1.586902
F-statistic	19.46317	Durbin-Watson stat		1.998945
Prob(F-statistic)	0.000000			

According to Table 7, the significance level of the T statistic for the variable RDUMMY with the value 0.58 is equal to 0.0000, which is less than 5%. So, the RDUMMY variable has a significant effect on the dependent variable QTOBIN and because of the positive coefficient of this variable (0.58), the correlation is direct, that is, by increasing one unit in the RDUMMY variable, the REM variable increases by 0.58 units, and vice versa. Therefore, according to the second hypothesis of the research, the economic dispersion affects the firm value, is confirmed.

Testing the third hypothesis

Before estimating the regression model above, it is necessary to determine the type of data related to the hypothesis test, for integration (money) or panel. In this regard, F Limmer Test is used to determine the panel or the money status of the data. It is also necessary to explain that, as a result of the F lemmer test, data relating to a model, panel, is required. Another test, called Hausman's test, will be performed on the data of the relevant model to determine whether the panel data has either fixed effects or random effects.

In order to test the third hypothesis of the research, a multiple linear regression model is used:

Model 3:

Qtobin = a + B1 turnover +B2 Size + B3 Capx + B4 Lev + B5 Liq + B6 Roa + B7 indepen + B8 GDP + ε

Table 8: F Limmer test in relation to model data 3

Redundant Fixed Effects Tests Equation: Untitled Test cross-section fixed effects			
Effects Test	Statistic	d.f.	Prob.
Cross-section F	3.998232	(170,676)	0.0000
Cross-section Chi-square	594.977128	170	0.0000

Correlated Random Effects - Hausman Test Equation: Untitled Test cross-section random effects			
Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	38.396289	8	0.0000

In this step, since the data related to the given model are panel-fixed effects, we used given model to test the hypothesis fitness. The results of fitting the model are as follows:

Table 9: Results of the estimation of model 3 by the panel- fixed effect method/dependent variable: QTOBIN

Dependent Variable: QTOBIN Method: Panel Least Squares Date: 06/02/17 Time: 06:03 Sample: 2011 2015 Periods included: 5 Cross-sections included: 171 Total panel (balanced) observations: 855				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	2.761016	1.180060	2.339725	0.0196
TURNOVER	0.031366	0.039135	0.801495	0.4231
SIZE	0.051118	0.066339	0.770563	0.4412
CAPX	-0.485627	0.227542	-2.134231	0.0332
LEV	-1.120210	0.202494	-5.532059	0.0000
LIQ	-0.029149	0.043226	-0.674325	0.5003
ROA	2.383725	0.249085	9.569912	0.0000
INDEPEN	-0.314031	0.161472	-1.944801	0.0522
GDP	-6.27E-07	1.48E-07	-4.236924	0.0000
Effects Specification				
Cross-section fixed (dummy variables)				
R-squared	0.794625	Mean dependent var		1.387781
Adjusted R-squared	0.740548	S.D. dependent var		0.888226
S.E. of regression	0.452431	Akaike info criterion		1.435441
Sum squared resid	138.3729	Schwarz criterion		2.430117
Log likelihood	-434.6512	Hannan-Quinn criter.		1.816347
F-statistic	14.69409	Durbin-Watson stat		2.265616
Prob(F-statistic)	0.000000			

According to Table 9, the significance level of the T statistic for the variable TURNOVER with the value 0.03 is equal to 0.4231, which is less than 5%. So, the TURNOVER variable has not a significant effect on the dependent variable QTOBIN. Therefore, according to the third hypothesis of the research, corporate governance (Changing CEO) affects firm value is not confirmed.

Testing the fourth hypothesis

Before estimating the regression model above, it is necessary to determine the type of data related to the hypothesis test, for integration (money) or panel. In this regard, F Limmer Test is used to determine the panel or the money status of the data. It is also necessary to explain that, as a result of the F lemmer test, data relating to a model, panel, is required. Another test, called Hausman's test, will be performed on the data of the relevant model to determine whether the panel data has either fixed effects or random effects.

In order to test the fourth hypothesis of the research, a multiple linear regression model is used:

Model 4:

Qtobin= a + B1 turnover +B2 Rdummy + B3 turnover*Rdummy +B4 Size + B5 Capx + B6 Lev + B7 Liq + B8 Roa + B9 indepen + B10 GDP + ε

Table 10: F Limmer test in relation to model data 4

Redundant Fixed Effects Tests Equation: Untitled Test cross-section fixed effects			
Effects Test	Statistic	d.f.	Prob.
Cross-section F	5.201887	(170,674)	0.0000
Cross-section Chi-square	716.604597	170	0.0000

Correlated Random Effects - Hausman Test Equation: Untitled Test cross-section random effects			
Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	66.668929	10	0.0000

In this step, since the data related to the given model are panel-fixed effects, we used given model to test the hypothesis fitness. The results of fitting the model are as follows:

Table 11: Results of the estimation of model 4 by the panel- fixed effect method/dependent variable: QTOBIN

Dependent Variable: QTOBIN Method: Panel Least Squares Date: 06/02/17 Time: 06:05 Sample: 2011 2015 Periods included: 5 Cross-sections included: 171 Total panel (balanced) observations: 855				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	7.469705	1.113432	6.708723	0.0000
TURNOVER	0.008952	0.056139	0.159467	0.8733
RDUMMY	0.575840	0.049595	11.61091	0.0000
TURNOVER*RDUMMY	0.024791	0.071332	0.347538	0.7283
SIZE	-0.422194	0.069406	-6.082969	0.0000

CAPX	-0.200923	0.204466	-0.982674	0.3261
LEV	-1.093378	0.180758	-6.048853	0.0000
LIQ	-0.102374	0.039026	-2.623224	0.0089
ROA	2.760219	0.224208	12.31098	0.0000
INDEPEN	-0.164381	0.144967	-1.133920	0.2572
GDP	9.27E-08	1.43E-07	0.648067	0.5172
Effects Specification				
Cross-section fixed (dummy variables)				
R-squared	0.836878	Mean dependent var		1.387781
Adjusted R-squared	0.793314	S.D. dependent var		0.888226
S.E. of regression	0.403811	Akaike info criterion		1.209782
Sum squared resid	109.9048	Schwarz criterion		2.215571
Log likelihood	-336.1819	Hannan-Quinn criter.		1.594944
F-statistic	19.21044	Durbin-Watson stat		1.998484
Prob(F-statistic)	0.000000			

According to Table 11, the significance level of the T statistic for the TURNOVER * RDUMMY with the value of 0.02 is equal to 0.7283, which is more than 5%. Hence, it can be argued that the RDUMMY moderating variable does not have a significant effect on the correlation between the independent variable TURNOVER and the dependent variable QTOBIN. However, the fourth hypothesis of the research, that is: the economic depression is not affected by the correlation between corporate governance (corporate governance change) and firm value.

CONCLUSION

Summary of the results of testing hypotheses is shown in Table 12.

Table 12: General conclusion

Hypothesis	Claim	Result	Interpretation
1	The economic depression affects the firm value	hypothesis is rejected	Changes in macroeconomics such as changes in GDP do not affect the sustainability or changing CEO of companies active in the capital market of Iran.
2	Corporate governance (changing CEO) affects firm value	hypothesis is confirmed	Changes in macroeconomics (such as declining GDP) have consequences at the micro level, one of which is the increase in the value of active companies in the Tehran Stock Exchange.
3	The economic depression affects the correlation between corporate governance (changing CEO) and firm value.	hypothesis is rejected	It is not possible to consider news about changing CEO as a change in the firm value.
4	The economic depression affects the correlation between corporate governance (changing CEO) and firm value.	hypothesis is rejected	Macroeconomic changes (such as the economic depression) also cannot create a correlation between the changing CEO and firm value.

Suggestions

Research practical suggestions

1. According to the results of the first hypothesis of the research which has not been confirmed, it is suggested to all investors of companies which are active in Tehran Stock Exchange that do not judge based on the macroeconomic changes regarding the status of the governance of companies of Tehran Stock Exchange.
2. According to the results of the second hypothesis of the research which has been confirmed, it is suggested to all investors of companies which are active in Tehran Stock Exchange to sell their shares during the depression (decrease in GDP) because based on the evidence obtained in the present study, the firm value in a depression is higher than other periods of time, and this causes stockholders to sell their shares more.
3. According to the results of the third hypothesis of the research, which has not been confirmed, it is suggested to all investors of companies which are active in Tehran Stock Exchange that do not judge based on the status of governance in companies (such as change in CEO) regarding the firm value and do not make a decision based on this interpretation. Because, according to the evidence obtained in this study, changing the director does not affect the firm value.
4. According to the results of the fourth hypothesis of the research, which has not been confirmed, it is suggested to all investors of companies which are active in Tehran Stock Exchange that under the conditions of the depression, do not interpret the change in the director as a change in the firm value. Because, according to the evidence obtained in the present study, the depression cannot create a correlation between the change in the CEO and the firm value.

Suggestions for future research

First Suggestions: Investigating the effect of economic depression on profit management.
Second Suggestions: Investigating the effect of depression on the quality of financial reporting.
Third Suggestions: Investigating the effect of depression on the performance of companies listed in Tehran Stock Exchange.
Fourth Suggestions: Investigating the effect of macroeconomic variables on the value of listed companies in Tehran Stock Exchange.
Fifth Suggestions: Investigating the effect of the effect of depression on bankruptcy risk

Research limitations

The most important research limitations including:

1. This study has been carried out over a period of 5 years from 2011 to 2015. It may be different from the results of the research doing at other period.
2. Due to limitations such as lack of access to information, this research has been carried out in relation to 171 companies accepted in Tehran Stock Exchange. Therefore, by changing the sample, the results of the research change as well.
3. The statistical population used in this research is Tehran Stock Exchange. Therefore, changing the statistical population, the results of the research change as well.
4. In order to operate the economic depression variable, the criterion of GDP reduction has been used. To measure the firm value, the Tobin Q ratio has been used. Therefore, by changing the criteria above, the research results change as well.

References

Abbasi Majid, Ahmadi Mousa, Investigating the Relationship between Corporate Governance and the Presence of Institutional Investors in the Board of Directors with the Value of Companies - Journal of Development Management Process, 2013- Vol. 26 - No. 1 - Page 213-191

Aryan Tabar Ahmad, Ashae Ali. The Study of the Relationship between Corporate Governance Mechanisms and the Performance of Companies Listed in Tehran Stock Exchange - 2012

Asadi Gholam Hossein, Rahmani Zarnagh Behrouz, Rashidi Naser. The Effect of Intellectual Capital on the Value of the Company - The First International Conference on Intellectual Capital Management 2009 - IICM01_047

Brett H McDonnell - Corporate Governance - This article is a revision of the previous edition article by M.M. Blair, volume 4, pp. 2797–2803, 2001, Elsevier Ltd.

Ghalibbaf Asl Hassan, Naderi Masoomeh. Investigating the excessive reaction of the traders in the Tehran Stock Exchange to the information and news published in the conditions of depression and prosperity - Financial Research Journal - 2006 - Volume 8- Number 21 - Page 112-97

Hassanzadeh Rasool Baradaran, Badavar Nahandi Younes, Babaei Ghader Hossein. - Investigating the Relationship Between Some Corporate Governance Mechanisms with Value Added to Equity Holders and Economic Value Added - The Journal of Accounting and Auditing - 2012 - Volume 19 - Issue 2-page 16-1

Hesas Yeganeh Yahya, Molodi Abdollah. The Relationship between Corporate Governance and Value Created for Shareholders - Journal of Industrial Management Studies - 2011 - Vol. 9 - No. 23 - Page 261-223

Hesas Yeganeh, The Effect of Corporate Governance on Auditors' Decisions on Risk and Planning, Financial Accounting and Audit Research, 2009- No. 23 - Page 39-63

Mahdavi Gholam Hossein, Hosseini Seyed Mojtaba, Raissi Zohreh. - The Effect of Corporate Governance Features on the Projected Quality Quality by Managing Companies Listed in Tehran Stock Exchange - Journal of Management Accounting - Year Six / Number Sixteen / Spring 2013

Mehrani Sasan, Nowruzi Sauna - Investigating the Effect of Corporate Governance on the Relationship between Company Value and Earnings Management - Knowledge Research in Financial Accounting - 2015 Volume 2 - Number 3 Page 122-105

Mustafa A. Dah - Governance and firm value: The effect of a depression - Adnan Kassar School of Business, Lebanese American University, Beirut, Lebanon - Research in International Business and Finance 37 (2016) 464–476

Nikanor I. Volkov -Garrett C. Smith-Corporate diversification and firm value during economic depressions - The Quarterly Review of Economics and Finance – 2014 -

Department of Finance, College of Business, Florida Atlantic University, Boca Raton, FL 33431, United States

Nourbakhsh Langroudi, Mohsen Mohammad Gholizadeh Mohammad Hassan, Eini Ghorbani Fatemeh, Corporate Governance Review and Financial Crisis in Tehran Stock Exchange Incorporated Companies - Management and Accounting Magazine – 2015

Reza Garabagh Razieh, Mohammadi Parastoo. The Effect of Financial Financing Patterns on Corporate Financial Performance in Economic Conditions. Journal of Financial Management Strategy - 2015 - Volume 3 - Number 8 - Page 70-51

Samuel Fosu; Albert Danso; Wasim Ahmad; William Coffie- Information Asymmetry, Leverage and Firm Value: Do Crisis and Growth Matter? – 2016 - International Review of Financial Analysis

Vakili Fard, Hamid Reza, and Bavandpour Lida. The Effect of Corporate Governance on the Performance of Companies Listed in Tehran Stock Exchange - Financial Journal - 2010 - Volume 8 - P. 140-119