

Research Article

Studying the Effect of Level of Cash Holding & Ownership Concentration on Corporate Value in Tehran Stocks & Exchange Market

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ABSTRACT

The present research is aimed to study the effect of the level of cash holdings and concentration of ownership on the corporate value. The statistical society of the research is comprised of the companies which are accepted in Tehran Stocks & Exchange Market. The final sample includes 495 companies. The research is of applied type and also, executively, it is descriptive. The required information has been extracted and gathered through field and library methods. Testing the research hypotheses has been done using Pearson correlation test, multi-variable linear regression and Excel and SPSS20 software. Results indicate that there is a meaningful relationship between the level of cash holdings and ownership concentration with the corporate value.

Keywords: level of cash holding, ownership concentration, corporate value

INTRODUCTION AND PROBLEM PRESENTATION

For many years, the economists thought that all the groups related to a joint-stock company attempt to achieve a common goal, but in past 30 years the economists' agency theory has manifested many instances of conflict between interests of the groups and the company's manner of encountering these conflicts; these instances are generally presented under the management accounting category. As defined by Jensen & McLing, agency relationship is a contract based on which the employer or owner appoints a representative or agent and delegates the authority of decision-making to it (Jensen 1, 1976). Companies with poor governance which are not financially under pressure tend to have more investment and consume the reserves of accumulated cash faster. Managers under poor governance absolutely prefer, instead of domestic investments through capital expenditures and R&D (research & development), to consume the

cash for acquisition and investment in other companies. Evidences demonstrate that investment for acquisition of companies and performing R&D and capital expenditures in companies with poor governance can decrease the corporate value and future profitability. In a group of specified companies with high level of cash and identical conditions, those companies which have poorer governance will spend the cash faster than companies which have stronger governance (Izadinia, Rasaeian, 1389).

Dittmar et al (2003) compared the cash holdings average among the countries that strongly support the stockholders and have developed and progressed capital market and concluded that in countries where stockholder enjoy stronger rights and capital markets are more developed the companies hold less cash. This indicates that the stockholders want to restrict the managers' cash and they will do this as soon as they gain the

required power and opportunity. Agency-related problems are among the most crucial and determinative factors in cash holding in companies. Results obtained by various researches have demonstrated that in countries where the stockholders' rights are not well protected the companies hold more cash compared to countries where the stockholders enjoy good protection and support (Ramirez & Tadaesse, 2009). In an economic unit, two interest conflicts are recognized: 1) interest conflict between managers and stockholders, and 2) interest conflict between stockholders and owners of debt securities. These conflicts lead to recognition of agency costs which can be used for justifying the management's performance in cash holding. With regard to the above-mentioned points, now the question is that do the concentration of ownership and level of cash holdings influence the company's value in Tehran Stocks & Exchange Market?

Research method

The present research is of applied type and it is also regarded a semi-experimental research due to using historical information in testing the hypotheses; besides, regarding the research's nature and method, it can be considered a descriptive research of correlational type because it is aimed to study the effect of cash holdings and ownership concentration on the corporate value.

Statistical society, sample, & sampling method

The statistical society of the present research is comprised of companies which are accepted in Tehran Stocks & Exchange Market during 1386 to 1391. The reasons for choosing such statistical society are:

1. Various companies from different industries are included in this society.
2. These companies have a better discipline in handling their affairs and activities and providing financial reports (statements) compared to other companies.

3. The audited financial information of these companies are more accessible for hypothesis testing and analysis compared to other companies.
4. Classification of the companies based on type of their activity facilitates achieving a better result.

As for sampling, the present research uses purposeful sampling method (systematic elimination method), thus all the companies of the statistical society which had the following qualifications were chosen as sample and others were eliminated:

1. The end of the company's financial years should be the end of Esfand.
2. The company should be accepted in Stocks Market before 1385.
3. It shouldn't be among the financial intermediary and investment companies.
4. The required information about the company should be available.
5. The company's transaction interrupt shouldn't be more than six months during each year of the research period.

After applying these qualifications, 99 companies were selected as the sample companies.

Research hypotheses

Main hypotheses:

1. There is positive relationship between corporate value and ownership concentration without intervention of control variables.
2. There is negative relationship between level of cash holding and corporate value without intervention of control variables.

Subsidiary hypotheses:

1. There is positive relationship between ownership concentration and corporate value with intervention of control variables.
2. There is negative relationship between level of cash holding and corporate value with intervention of control variables.

Research variables

Independent variables are defined as follows:

Ownership concentration Ownership predication refers to a state in which a remarkable portion of

the company's stocks belongs to the majority of the stockholders, and it shows that what percent of the stocks is owned by a limited number of the stockholders, that is, the total percentage of ownership of the stockholders who own at least 50% of the company's stocks. In fact, manner of distribution of stocks among the stockholders of various companies is demonstrated by the ownership concentration; thus, the less the number of stockholders, the more concentrated the ownership.

Cash holding level

Cash is considered as one of the most important items of current assets in the process of executing the profiting units' operation. In preparing the financial reports, the information about the cash is of great importance so that lack of cash management can cause difficulties in continuity of the corporations' activity and also can make it impossible to desirably execute its operation.

Dependent variable

Corporate value

Determining the corporate value is one of the important factors in the investment process. The value of each company can be determined with regard to the value of its stocks, thus the investor can specify its investment preferences and priorities regarding the corporate value.

Control variables

Financial leverage Financial leverage is obtained through dividing the total debts by total assets at the end of the period.

Beta (β) risk Beta represents the systematic risk. Beta indicates the sensitivity of the return fluctuations in the Stocks market versus return fluctuations.

Firm size Firm size is the normal logarithm of total assets at the end of the financial year.

Institutional investors' ownership

It is person (entity) or an institute which buys and sells a huge amount of securities.

Dividend In this research, dividend is obtained through dividing the cash dividend by total assets.

Capital expenditures

It refers to expenditures through bearing which we expect acquiring long-term interests with more than one financial period.

Information and data analysis method

Descriptive statistics is used for describing the data, and statistical techniques of multi-variable linear regression are used to analyze the hypotheses. The phases (steps) of the research include studying the suppositions of the regression model, testing the significance (meaningfulness) of the independent variables, and testing the fitness (suitability) of the linear model of data. Besides, in the present research, SPSS20 statistical software is used for data analysis, and evaluation of the control, dependent, and independent variables is done through the following models:

Ownership concentration's evaluation model (independent variable)

Concentration of ownership is the manner of distribution of the stocks among the stockholders of different companies; the less the number of stockholders, the more concentrated the ownership. This research uses Herfindahl-Hirschman index (HHI) for calculating the ownership concentration ratio; this index is obtained through the square sum of the stocks percentage of the company's stockholders. This index increases parallel to increase of the ownership concentration and if all the stocks belong to one person, it will gain the highest value and will be calculated as equal to 10.000. If the structure of ownership is dispersed and all the stockholders have got equal portions, HHI will gain the lowest value and will be calculated as equal to 10000/N. Herfindahl index is calculated as follows:

$$HHI = \sum_{i=1}^n \left(\frac{P_i}{P} \times 100 \right)^2$$

Cash holding level's evaluation model (independent variable)

Cash is considered as one of the most important items of current assets in the process of executing the profiting units' operation. In preparing the

financial reports, the information about the cash is of great importance so that lack of cash management can cause difficulties in continuity of the corporations' activity and also can make it impossible to desirably execute its operation. Measuring the cash holding level is calculated through the following formula (Amer, 2012):

$$\text{Cash holdings} = \frac{(TC + CE)}{TA}$$

TC: total cash
CE: cash equivalent

Corporate value's evaluation model (dependent variable)

Tobin's Q method has been developed by James Tobin the winner of economy Nobel Prize. This ratio measures the relationship between a company's market value and its replacement value (costs of replacing the company's assets).

$$Q = \frac{(MV + BV)}{TA}$$

TA: total assets, MV: market value of stockholders' rights, BV: book value of stockholders' rights

Financial leverage's evaluation model

Financial leverage is obtained through dividing total debts by total assets at the end of the period; that is, short-term and long-term debt proportionate to total assets indicates that what portion of the assets has been provided from the debts or the stockholders' rights.

$$LEV = \frac{(TD)}{TA}$$

TD: total debts TA: total assets

Beta risk's evaluation model

Beta risk represents the systematic risk. It indicates the sensitivity of the return fluctuation of the securities versus the return fluctuations and is obtained through dividing the return covariance of the securities (risky assets) with market portfolio return by portfolio return variance.

The way of calculating the risk:

$$\beta = \frac{Cov(R_i, R_m)}{VAR(R_m)}$$

: return of securities (risky assets)

: return of market portfolio

Firm size's evaluation model

In the present research, firm size is evaluated by normal logarithm of total assets at the end of the firm's period:

$$\text{Size} = \log TA$$

Institutional investors' ownership evaluation model

It is a person (entity) or an institute which buys and sells huge amount of securities which, according to Bush's definition, includes institutional investors, big investors such as banks, insurance companies, investment companies, etc; in fact, institutional investors are the stock percentage of the institutional investors, and the real investors with more than 50% ownership are the investors other than the major owner. It is calculated through the ratio of normal stocks owned by institutional investors at the end of year "t".

Dividend's evaluation model

Companies which divide the stocks profit, compared to companies which don't, are less likely to encounter financial limitations, because they can stop paying the stocks profit when their access to the external financing is reduced (Arsalan et al, 2006).

$$DIV = \frac{CD}{TA}$$

Table-4-1: abbreviations for research variables

No.	Variables	Abbreviation	Type of variable
1	Concentration of ownership	Conc	Independent
2	Cash holding level	Ch	Independent
3	Tobin's Q (corporate value)	Q	Dependent
4	Firm size	SIZE	Control
5	Financial leverage	LEV	Control
6	Beta risk	β	Control
7	Institutional investors' ownership	Inown	Control
8	Capital expenses	CAP	Control
9	Dividend	DIV	Control

Descriptive statistics

Table-4-2: descriptive statistics of research variables

	conc	Q	ch	SIZE	LEV	β	Inown	CAP	DIV
Samples	594	594	594	594	594	594	594	594	594
Average	4012/1118	1942/45793	8692/00727	5/859886204	0/65283745	0/41284	0/7582402	0/368143145	0/001787167
Mean	3653/827	1607/000282	7029/861755	5/790525825	0/652114595	0/25	0/8092	0/310948424	0/00052251
Mode	1653/000	-5783/967798	-515/632464	6/19407733	0/846229371	0	84500/	0/226462909	0
Devaition	1735/242831	1526/288061	10924/50784	0/598347577	0/190657913	1/12135	0/18032882	0/201239913	0/004648126
Variance	3011067/681	2329555/244	119344871/6	0/358	0/036	1/257	0/033	0/04	0
Chulegi	0/687	2/233	6/946	0/899	0/817	-0/878	-1/603	0/79	9/259
starin	0/337	14/328	52/431	1/453	4/326	16/85	3/378	-0/228	122/589
Minimum	0/276	-5783/9678	-515/632464	4/291191189	0/156876925	-8/18	0/0534	0/049959613	0
Maximum	9736/486	12206/02306	102481/5856	8/007358927	1/82442351	6/53	0/9983	0/927614091	0/07366181
Sum	1985995/342	961516/6753	4302543/598	2900/643671	323/154538	203/53	375/3289	182/2308566	0/88464785

In the present research, inferential and descriptive statistical methods are used for analyzing the data and testing the hypotheses. In descriptive methods, it is attempted to describe the research data by providing tables and using dispersion and central statistical indices in order to clarify the subject. We also use inferential statistical methods for testing the hypotheses.

Data normality test

Examining normality of the dependent variable’s distribution has been done using Kolmogorov-Smirnov test (K_S) whose suppositions are:

Zero-hypothesis (H_0) and the opposite hypothesis are as follows:

Data distribution is normal: H_0

Data distribution is not normal: H_1

Table-4-3: z-statistic and Sig-value of data for all the observations

Statistic	DAT
Highest positive difference	0.049
Highest negative difference	-0.055
Kolomogorov-Smirnov Z	1.228
Asymp. Sig	0.098

Table-4-3 shows the dependent variable’s normality test. As it can be seen in this table, the “corporate value” variable’s **sig** is more than 5% thus H_0 is confirmed; in other words, the dependent variables’ data distribution is normal.

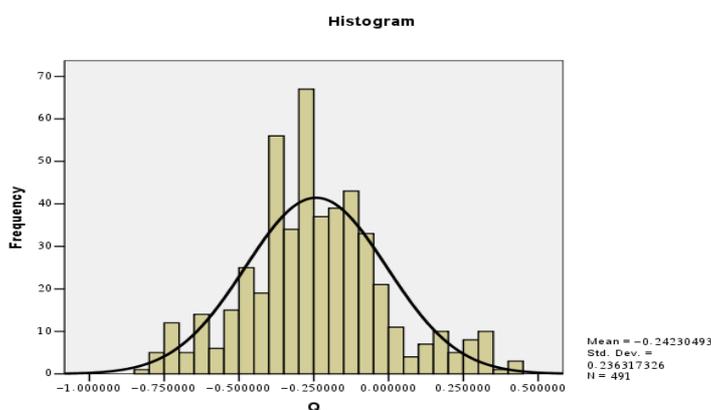


Chart-4-1: “corporate value” variable’s normality probability

For presenting more explanations about the data normality, the chart for the dependent variables' normal distribution is drawn.

Testing the first subsidiary hypothesis

Statistical hypotheses of the first subsidiary hypothesis, indicated as H_0 and H_1 , are as follows:

H_0 : there is a meaningful relationship between ownership concentration and corporate value.

H_1 : there is no meaningful relationship between ownership concentration and corporate value.

The results obtained from Pearson correlation test for the first hypothesis without intervention of the control variables are presented in table-4-4:

Table-4-4: Pearson correlation coefficient

Dependent variable	Statistics	Conc
Corporate value (Tobin)	Pearson correlation coefficient	-0.30
	Significance level	0.01
	Number of samples	495

According to the results indicated in this table and with regard to the significance level of test error for 95% confidence level, it can be said that without intervening the control variables the relationship between corporate value and ownership concentration of the companies is confirmed and the relationship between the two variables is vice versa.

Errors normality test

One of the suppositions of the linear regression is normality of the errors distribution. In order to examine normality of the errors distribution, the chart of errors is drawn:

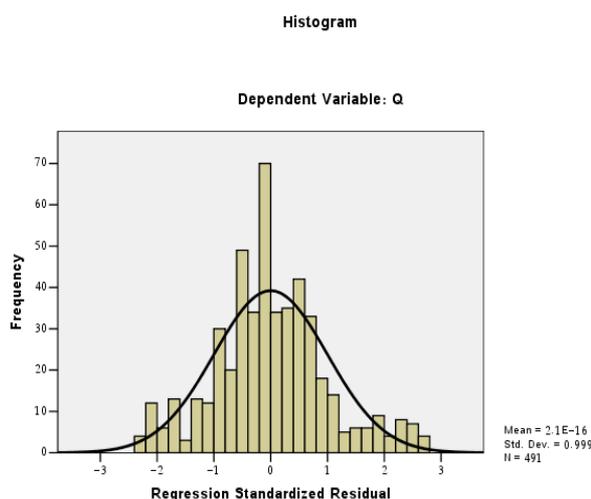


Chart-4-2: errors distribution of the first hypothesis's regression model

Regarding the chart of normal distribution and the presented average and the standard deviation of the errors, which is close to 1, it can be concluded that the distribution of the errors is quite normal so regression can be used.

Table-4-5: summary of regression model

Determination coefficient	Adjusted determination coefficient	Durbin-Watson
0.919	00.844	1.713

According to table 5-4, the determination coefficient of the dependent variable and corporate value is equal to 0.919. If Durbin-Watson statistic is placed in acceptable range of 1.5 to 2.5 then the correlation

between the errors will be accepted. Since Durbin-Watson statistic is 1.713, it can be said that lack of correlation between the errors is accepted.

Table-4-6: one-way variance analysis results

	Sum of squares	Freedom degree	Average of squares	F	Significance level
Regression	0/003	1	0/003	0/044	0/017
Difference	27/361	489	0/056		
Total	27/364	490			

According to the above table and with regard to the fact that the significance level of F-test error for 95% confidence level is less than 0.05, it can be said that we are allowed to use the regression linear model; in other words, we can say that the independent variable can be regarded as the predictor of the dependent variable.

Table-4-7: regression coefficient results

Prediction variables	Non-standard coefficients		Standard coefficients	T	Significance level
	B	SE	BETA		
Fixed	-0.227	0.27		-8.788	00.0
Ownership concentration	-1.4	00.0	-0.1	-0.232	0.045

Based on the above table and with regard to the significance level of the regression test error for 99% confidence level, it can be said that the -1.4 ownership concentration can predict the changes of corporate value. According to the obtained results, the regression model of the first hypothesis is as follows:

$$Q = -1.4 \text{ CONC} - 0.227$$

Testing the second subsidiary hypothesis

The statistical hypotheses of the second subsidiary hypothesis, assumed as zero-hypothesis (H₀) and the opposite hypothesis (H₁), are:

H₀: there is a meaningful relationship between cash holding level and corporate value.

H₁: there is no meaningful relationship between cash holding level and corporate value.

The results obtained from performing the Pearson correlation test for the second subsidiary hypothesis without intervention of the control variables are presented in table-4-8:

Table-4-8: Pearson correlation coefficient

Dependent variable	Statistics	Ch
Corporate value (Tobin)	Pearson correlation coefficient	-0.223382278
	Significance level	0.002624583
	Number of samples	495

According the above table and with regard to the significance level of test error for 0.95 confidence level, it can be said that without intervention of control variables the relationship between corporate value and cash holding level of the companies is confirmed and the relationship between the two variables is vice versa.

Errors normality test

In order to examine the normality of errors distribution, the chart of errors is drawn:

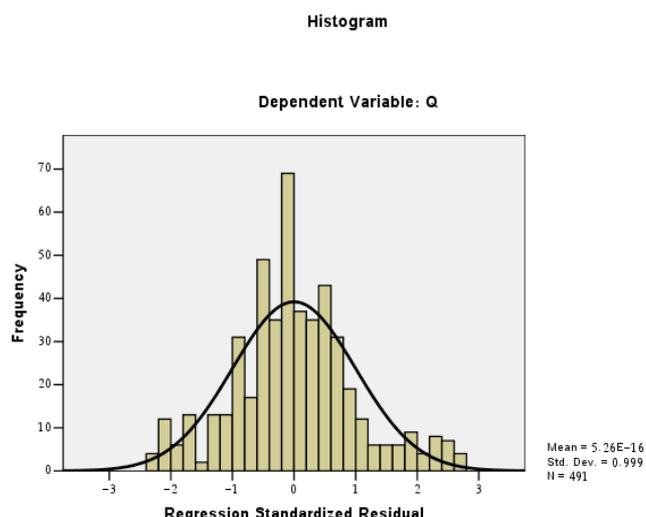


Chart-4-3: errors distribution of the second hypothesis’s regression model
Regarding the chart of normal distribution and the presented average and standard deviation of the errors, which is close to 1, it can be concluded that the distribution of errors is quite normal thus the regression can be used.

Table-4-9: summary of regression model

Determination coefficient	Adjusted determination coefficient	Durbin-Watson
0.744	0.55	1.835

According to the above table, the determination coefficient of the independent variable and corporate value is equal to 0.744. If Durbin-Watson statistic is placed in the range of 1.5 to 2.5, then the lack of correlation between the errors will be accepted. Since Durbin-Watson statistic is 1.835, thus it can be said that the lack of correlation between the errors is accepted.

Table-4-10: one-way variance analysis results

	Sum of squares	Freedom degree	Average of squares	F	Significance level
Regression	0/015	1	0/015	0/267	0/005
Difference	27/350	489	0/056		
Total	27/364	490			

According to the above table and with regard to the fact that the significance level of F-test error for 0.95 confidence level is less than 0.05, it can be said that we are allowed to use the regression linear model; in other words, we can say that the independent variable can be considered as the predictor of the dependent variable.

Table-4-11: results of regression coefficient

Prediction variables	Non-standard coefficients		Standard coefficients	T	Significance level
	B	SE			
Fixed	-0/238	0/014		-17/44	00/0
Cash holding level	-5/07	00/0	-0/023	-0/517	0/035

According to the above table and regarding the significance level of the regression test errors for 0.99 confidence level, it can be said that the -5.07 ownership concentration can predict the changes of corporate value. Based on the obtained results, the regression model for the first hypothesis is as follows:

$$Q = -5.07 Ch - 0.238$$

Testing the first main hypothesis

The third hypothesis is in fact repetition of the first hypothesis provided that the control variables are intervened.

The statistical hypotheses of the first hypothesis, assumed as the zero-hypothesis (H₀) and the opposite hypothesis (H₁), are as follows:

H₀: there is a meaningful relationship between ownership concentration and corporate value.

H₁: there is no meaningful relationship between ownership concentration and corporate value.

The results obtained from performing Pearson correlation coefficient test for the third hypothesis with intervention of the control variables are presented in table4-12:

Table-4-12: Pearson correlation coefficient

Dependent variable	Statistics	Conc	SIZE	LEV	B	Inown	CAP	DIV
Corporate value (Tobin)	Pearson correlation coefficient	-0.0104825	0.0128683	0.0656143	0.0748021	-0.0081676	-	-
	Significance level	0.04083891	0.3880414	0.0732822	0.0492462	0.4283705	0.045401	0.3995171
	Number of samples	495	495	495	495	495	495	495

According to the above results and with regard to the significance level of test error for 0.95 confidence level, it can be said that with intervention of the control variables the relationship between the corporate value and the ownership concentration is confirmed and the relationship between the two variables is vice versa. Besides, from among the control variables, the “capital expenditures” and “beta” variables have meaningful relationship with the corporate value.

Errors normality test

In order to examine the errors distribution normality, the chart of the errors is drawn:

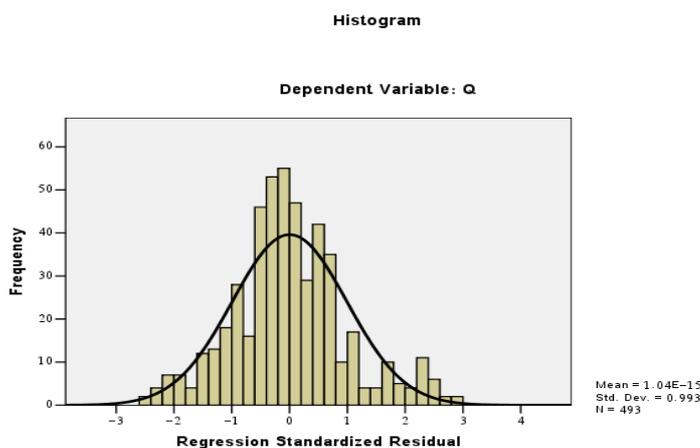


Chart-4-4: errors distribution of the third hypothesis’s regression model

Regarding the chart of the normal distribution and the presented average and standard deviation of the errors, which is close to 1, it can be concluded that distribution of the errors is quite normal so we can use regression.

Table-4-13: summary of regression model

Determination coefficient	Adjusted determination coefficient	Durbin-Watson
0.71	0.50	1.747

According to the above table, the independent variable's determination coefficient with corporate value is equal to 0.71. If Durbin-Watson statistic is placed in the acceptable range of 1.5 to 2.5, then the lack of correlation between the errors will be accepted. Regarding the fact that Durbin-Watson is 1.747, thus it can be said that the lack of correlation between the errors is accepted.

Table-4-14: one-way variance analysis results

	Sum of squares	Freedom degree	Average of squares	F	Significance level
Regression	0/371	7	0/053	0/949	0/048
Difference	27/072	485	0/056		
Total	27/443	492			

According to the above table and regarding the fact that the significance level of F-test error for 0.95 confidence level is less than 0.05, it can be said that we are allowed to use the regression linear model; in other words, it can be said that the independent variable can be assumed as the predictor of the dependent variable.

Table-4-15: regression coefficient results

Prediction variables	Non-standard coefficients		Standard coefficients	T	Significance level
	B	SE	BETA		
Fixed	-0/271	0/125		-2/165662613	0/03082366
Ownership concentration	5/38	0/00	0/004	0/085743367	0/03170581
Firm size	0/0037	0/018	0/0093	0/205054881	0/83761528
Financial leverage	0/059	0/0564	0/0477	1/045909883	0/29612362
Beta	0/0156	0/0096	0/0741	1/634884238	0/010272215
Institutional investors	-0/015	0/0604	-0/011	-0/242011427	0/8088736
Dividends	-0/082	0/0536	-0/07	-1/523577285	0/12826609
Capital expenditures	-0/101	2/3267	-0/002	-0/043542591	0/0096528693

According to the above table and with regard to the significance level of the regression test error for 0.99 confidence level, it can be said that many of the variables have been eliminated from the regression model regarding the significance level; thus, based on the obtained results, the regression model for the first hypothesis is as follows:

$$Q = 5.38 \text{ CONC} + 0.0156 \beta - 0.101 \text{ CAP} - 0.271$$

Testing the second main hypothesis

The fourth hypothesis is the repetition of the second hypothesis provided that the control variables are intervened.

The statistical hypotheses of the second hypothesis, assumed as the zero-hypothesis (H_0) and the opposite hypothesis (H_1), are:

H₀: there is a meaningful relationship between cash holding level and corporate value.

H₁: there is no meaningful relationship between cash holding level and corporate value.

The results obtained from performing the Pearson correlation coefficient test for the fourth hypothesis with intervention of the control variables are presented in table-4-16:

Table-4-16: Pearson correlation coefficient

Dependent variable	Statistics	Conc	SIZE	LEV	B	Inown	CAP	DIV
Corporate value (Tobin)	Pearson correlation coefficient	-0/022	0/0128683	0/0656143	0/0748021	-0/0081676	-0/0764051	-0/0115188
	Significance level	0/0427	0/3880414	0/0732822	0/0492462	0/4283705	0/045401	0/3995171
	Number of samples	495	495	495	495	495	495	495

According to the above table and with regard to the significance level of test error for 0.95 confidence level, it can be said that with intervention of the control variables the relationship between the corporate value and the ownership concentration of the companies is confirmed and the relationship between the two variables is vice versa. Besides, from among the variables, the “capital expenditures” and “beta” variables are meaningfully related with the corporate value.

Error normality test

In order to examine the error distribution normality, the chart of the errors is drawn:

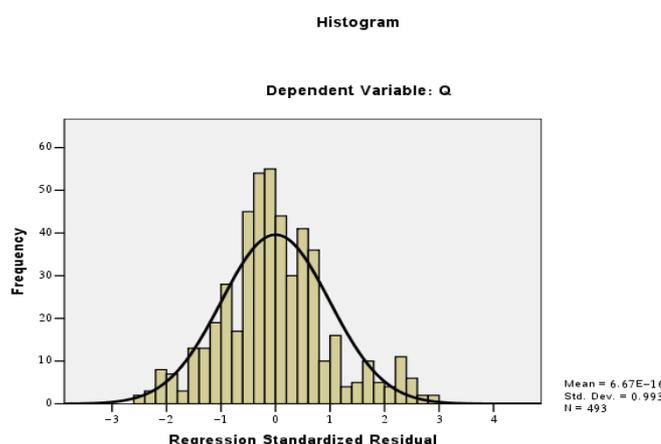


Chart-4-5: errors distribution of the fourth hypothesis’s regression model

Regarding the chart of the normal distribution and the presented average and standard deviation of the errors, which is close to 1, it can be concluded that the distribution of the errors is quite normal thus we can use regression.

Table-4-17: summary of regression model

Determination coefficient	Adjusted determination coefficient	Durbin-Watson
0.632	0.399	1.647

According to the above table, the independent variable’s determination coefficient with corporate value is equal to 0.632. If Durbin-Watson statistic is placed in the acceptable range of 1.5 to 2.5, then the lack of

correlation between errors is accepted. Since Durbin-Watson coefficient is 1.647, it can be said that the lack of correlation between the errors is accepted.

Table-4-18: one-way variance analysis results

	Sum of squares	Freedom degree	Average of squares	F	Significance level
Regression	0/379	7	0/054	0/97	0/0452
Difference	27/064	485	0/056		
Total	27/443	492			

According to the above table and regarding the fact that significance level of F-test error for 0.95 confidence level is less than 0.05, thus it can be said that we are allowed to use the regression linear model; in other words, it can be said that the independent variable can be regarded as the predictor of the dependent variable.

Table-4-19: regression coefficient results

Prediction variables	Non-standard coefficients		Standard coefficients	T	Significance level
	B	SE	BETA		
Fixed	-0/25	0/1337		-1/866880671	0/062521378
Cash holding level	-4/7	0/00	-0/022	-0/389505829	0/0497072972
Firm size	0/0035	0/018	0/009	0/196339035	0/844427051
Financial leverage	0/0546	0/0574	0/0441	0/949983562	0/342593743
Beta	0/0156	0/0095	0/0742	1/640532768	0/0101542778
Institutional investors	-0/03	0/0722	-0/023	-0/41125726	0/681065566
Dividends	-0/08	0/0536	-0/069	-1/500408277	0/134159359
Capital expenditures	-0/094	2/3262	-0/002	-0/040512275	0/00967701392

According to the above table and regarding the significance level of the regression test error for 0.99 confidence level, it can be said that the regression model for the fourth hypothesis is as follows:

$$Q = -4.7 Ch + 0.0156 \beta - 0.094 CAP - 0.25$$

Interpretation of the research findings

First hypothesis test results

The first hypothesis is related to the relationship between the corporate value and the ownership concentration without intervention of the control variables. Pearson correlation coefficient was used for statistical analysis of the first hypothesis (due to normality of data distribution according to table 4-3). The results in table 4-4 indicate the existence of a relationship between the “corporate value” dependent variable and the “ownership concentration” independent variable and since the relationship of the simple linear

regression is dependent on the meaningfulness of the coefficient of correlation between the two variables, it can be concluded that the independent variable can be considered as the predictor of the dependent variable. Thus increase (reduction) of the factors of ownership will result in reduction (increase) of the corporate value.

Second hypothesis test results

The second hypothesis is about the relationship between the cash holding level and the corporate value. The statistical analysis of the second hypothesis was done using Pearson correlation

coefficient. Thus the results in table 4-8 indicate the existence of a relationship between the “corporate value” dependent variable and the “cash holding level” independent variable. Besides, in order to analyze the regression we should first make sure of the errors’ normality and then do the analysis of variance; the results in table 4-9 indicate this relationship. In general, the regression model indicates the negative relationship between the “corporate value” dependent variable and the “cash holding level” independent variable; therefore, increase of cash holding level by the company results in reduction of corporate value and vice versa. So “cash holding level” independent variable can be the predictor variable of the “corporate value” dependent variable.

Third hypothesis test results

The third hypothesis is about the relationship between the ownership concentration and the corporate value with intervention of the control variables. The statistical analysis of the third hypothesis was done using Pearson correlation coefficient, so the results in table 4-12 indicate the existence of a relationship between the “corporate value” dependent variable and the “cash holding level” independent variable and between the control variables and the “corporate value” dependent variable. Chart 4-4 and table 4-13 demonstrate normality of the dependent variable’s errors, which means that the mixture regression can be used. In general, the regression model indicates the existence of a relationship between dependent variable and control variables; so that, the independent variable of ownership concentration, beta risk, and capital expenditure with 5.38, 0.0156, and -0.101 coefficients, respectively, can be considered as the predictors of the dependent variable of corporate value. In case that we hadn’t intervene the control variables in hypothesis-1 the relationship between corporate value and ownership concentration was positive, meaning that increase of the ownership concentration will

result in increase of the corporate value, and vice versa.

Fourth hypothesis test results

The fourth hypothesis is about the relationship between the cash holding level and the corporate value with intervention of the control variables. Statistical analysis of the fourth hypothesis was done by means of Pearson correlation coefficient, thus the results in table 4-16 indicate the existence of a relationship between the “corporate value” dependent variable and the “cash holding level” independent variable and between the control variables and the dependent variable of corporate value.

Chart 4-5 and table 4-17 demonstrate the normality of the dependent variable’s errors, indicating that the mixture regression equation can be used. In general, the regression model indicates the relationship between the dependent variable and the control variables; so that, the independent variable of cash holding level, beta risk, and capital expenditures with -4.7, 0.0156, and -0.094 coefficient, respectively, can be the predictors of the dependent variable of corporate value. In case that we hadn’t intervene the control variables in the hypothesis-2 the relationship between the corporate value and the cash holding level was negative, meaning that increase of the cash holding level will result in reduction of the corporate value, and vice versa.

Research suggestions

1. Since in the present research the relationship between the corporate value and the cash holding level is a negative one, thus it is suggested that the investors buy the stocks of those companies which have got lower cash holding level compared to other companies because such companies have higher corporate value.
2. In the present research the relationship of cash holding level and corporate value with presence of control variables, including firm size, profitability, investment opportunities, and financial leverage, was recognized as negative so the investors are again recommended to buy the

stocks of those companies which have lower cash holding levels.

3. It will be useful if the Sticks & Exchanges Organization presents some required education and instructions for the stockholders, investors, specifically the minority stockholders who have little knowledge about nature, quality, and calculation method of the companies' financial statements and particularly about ownership concentration, corporate value, and cash holding level of the companies.

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