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Cash Holdings and Investment Risks in Listed Firms in Tehran Stock Exchange

Dariush Heshmat, Hamidreza Kordlouie*

1Department of Business Management, Qeshm Internatinal Branch, Islamic Azad University, Qeshm Iran

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ABSTRACT

The present study aimed to explore how cash holdings and investment risks are associated in listed firms in Tehran Stock Exchange. To do so, an ex post facto research design was employed based on historical data. The population included firms listed in Tehran Stock Exchange over a five year period from 2008 to 2012. In addition, the final sample included 80 firms whose data were analyzed by SPSS Software using multivariate and bivariate linear regression tests, F test, and t-test. The results of the study indicated that there was a significant relationship between cash holdings and investment risks and between cash holdings and the stocks market liquidity risk. Nevertheless, there was no significant relationship between cash holdings and both systematic and nonsystematic risks. Given the findings of the study, it is suggested that the Stock Exchange Organization to adopt the needed regulation strategies in order to provide reliable and timely information that can be used for effective evaluation and calculation of investment risks so that to reduce the informational asymmetry resulting from investors' unequal access to information.

KEYWORDS: Cash holdings, Liquidity risk, Systematic risk, Nonsystematic risk

1. INTRODUCTION

Cash flow statements are generally among the most powerful instruments to analyze the present and future conditions of a firm. Cash flow statements show all cash resources and consumptions within a given firm during a fiscal period in five main sections. So such statements show any increase or decrease in cash at the end of a fiscal period. The necessity of preparing cash flow statements based on accounting standards shows the significance of the firm cash flows for economic decisions. Cash holdings can reduce the risk of financial crises and are considered as a safe reservoir for compensating unexpected losses. In addition, cash holdings make it possible to adopt optimal investment policies when the firm faces financial problems. Finally, cash holdings contribute to reducing costs of collecting funds or liquidating the existing assets.

Cash funds are among critical resources of any economic entity. Besides, creating a balance between the existing cash funds and cash needs is seen as one of the most important factors affecting the health of business entities and the continuity of their activities. Through cash holdings, managers try to reduce financing costs so they always try to hold enough cash funds in order not to be dependent on external resources. Therefore, by holding an appropriate level of cash funds it is possible to increase returns on investments and at the same time to reduce the investment risks involved. On the other hand, to assess and determine stock prices and making rational decisions, investors, financial analysts, and investment firms are usually exposed to investment risks. Therefore, the findings of this study can be beneficial for investors, analysts, and creditors when making investment decisions. This study is also significant as it contributes to identifying factors that may increase systematic, nonsystematic, and liquidity risks in firms and affect decisions taken in this regard. Cash holding level is one of the important factors affecting the investment risks in the firm. Given the impact of cash holdings on investment risks, the main objective of the present study is to explore the relationship between cash holdings and the investment risks. Investment risks in this study include liquidity risk, systematic risk, and nonsystematic risk. In addition, given that cash holdings and the type and level of risks vary from one industry to another, the present study aims to examine the relationship between cash holdings and the investment risks in different industries as well as to answer the following questions:

1. What is the relationship between cash holdings and the investment risk in each of stock industries?
2. What is the relationship between cash holdings and the liquidity risk in each of stock industries?
3. What is the relationship between cash holdings and the systematic risk in each of stock industries?
4. What is the relationship between cash holdings and the nonsystematic risk in each of stock industries?

It should be noted that since no study in Iran has investigated the impact of cash holdings on the investment risk in Tehran Stock Exchange, this is the first study of the type that is going to discuss the problem.

* **Corresponding Author:** Hamidreza Kordlouie, Department of Business Management, Qeshm Internatinal Branch, Islamic Azad University, Qeshm Iran. Email: hamidreza.kordlouie@gmail.com

2. LITERATURE REVIEW

Malekian et al., (2011) studied factors determining cash funds. The results indicated that the firm size, fixed tangible assets, and financial leverage are negatively associated with cash holdings. It was also noted that cash flows, profitability, and growth opportunities are positively correlated with cash holdings.

Saeedi and Ramshe (2011) developed a theoretical model concerning beta consistent factors and classified these factors in three main groups of firm features, growth power, and risk-free interest rate (as macroeconomic factors). To test the model, the data from 80 firms listed in the Tehran Stock Exchange from 1997 to 2009 were used. The research hypotheses developed based on the theoretical model of the study were tested using multivariate regression analysis for the mixed data. The results indicated that there is a significant relationship between beta values, operational income growth, operational income variability, and operational income correlation with market portfolio index and growth options. In addition, the results of the study provided some evidence, though not strong, concerning the instability of stock beta among the high leveraged companies.

Piri et al., (2013) stated that maximizing the owners' wealth is the main goal of business entities. It is known that earnings cannot be used as a good index to assess the value and performance of such entities. To this end, economic value added is used as one of the most important performance evaluation indices. Besides, the systematic risk as a uncontrollable risk which affect the profitability and value of business entities plays an important role in financial decision-makings (Philipon, 2010). Piri et al.'s (2013) study aimed to investigate the impact of the systematic risk on economic value added. To this end, financial market data from 136 firms listed in Tehran Stock Exchange over 2000-2010 were used. The research hypothesis was tested by using econometric models and dynamic and stationary panel data. The results of dynamic panel data indicated that there is a negative relationship between the systematic risk and economic value added.

Harford et al., (2008) concluded that the U.S firms with a weaker corporate governance structure spend their surplus cash on value-minimizing mergers. In addition, such firms show less flexibility by providing less support for equities and having a high level of cash holdings. Using international data, other studies have provided some evidence that suggests there is a negative relationship between cash holdings and supporting equities at the national level (Izadinia and Alinaghian, 2010).

Lee (2009) introduced a framework that link corporate governance, cash funds, and corporate valuation. The main point is that the mangers of the firms with weak corporate governance hold excessive cash funds. This increases agency costs and reduces the firm value. Similarly, it is argued that firms with a strong ownership structure such as a powerful board of directors are more likely to have less agency problems in benefiting from cash funds (Izadinia and Alinaghian, 2010).

Yeboah and Kawaka (2012) studied the impact of working capital management on profitability and liquidity in Ghanaian banks over 1999-2008. The results suggested that tax collection period, cash conversion cycle, capital structure, and bank size have a negative significant relationship with the bank cash status. In addition, creditors' payment period and profitability were found to have a positive significant relationship with the cash status of Ghanaian banks (SamdiLorgani&Imeni, 2013).

3. METHOD

Since this the present used the theoretical framework and the literature in Iran and abroad to investigate the problem at hand, it is considered an applied research. Besides, a deductive method was employed in this study as the data were collected from the primary sources to test the hypotheses and the obtained results were generalized to the whole population under study. The research design was used in the study was an ex post facto method based on historical functional data. Given the use of modeling methods and mathematical algorithms; variables, data, and quantitative analysis instruments were of a quantitative and nonjudgmental type. The research population included all firms listed in Tehran Stock Exchange which met the following requirements:

1. The firm stocks must have been traded over 2008 to 2012 in Tehran Stock Exchange.
2. The firm trademark should not have been transferred to an informal panel.
3. The firm trademark must be active and have been traded for at least once a year.
4. The firm fiscal year must end in March with no changes over the period under study.
5. The firm financial data should have been available for the period under study.
6. The firm shout be in financial intermediaries group.

The firms that did not present the needed data were excluded from the research sample so the final sample consisted of 100 firms whose data were studied for a five-year period. Then, based on Morgan table, 80 firms were selected using simple random sampling as the sample under study. Library references, internet search, and documents were

used as the sources of data collection. Besides, the data were collected using notes and summary tables to determine and classify research variables.

METHODS OF DATA ANALYSIS

1. Descriptive statistics

Means, variances, standard deviations, summary and classification tables, and graphic diagrams (bar charts and histograms)

2. Inferential statistics

- Kolmogorov-Simonov (KS) test was used to ass the normality of distribution of Xs and Ys (dependent and independent variables).
- F Limer test was used to choose from methods of panel data and mixed data.
- Hussmann test was used to determine the stability or randomness of differences in cross-sectional units.
- White test was used to assess variance anisotropy.
- Durbin-Watson was run to test error independence or the nonexistence of autocorrelation between independent variables.
- Multiple linear regression was used analyze relationships among variables.
- F test and t-test were used to generalize the research parameters to the population under study and to determine relationship between these parameters

Conceptual model of the study

Figure 1 shows the conceptual model of the study:

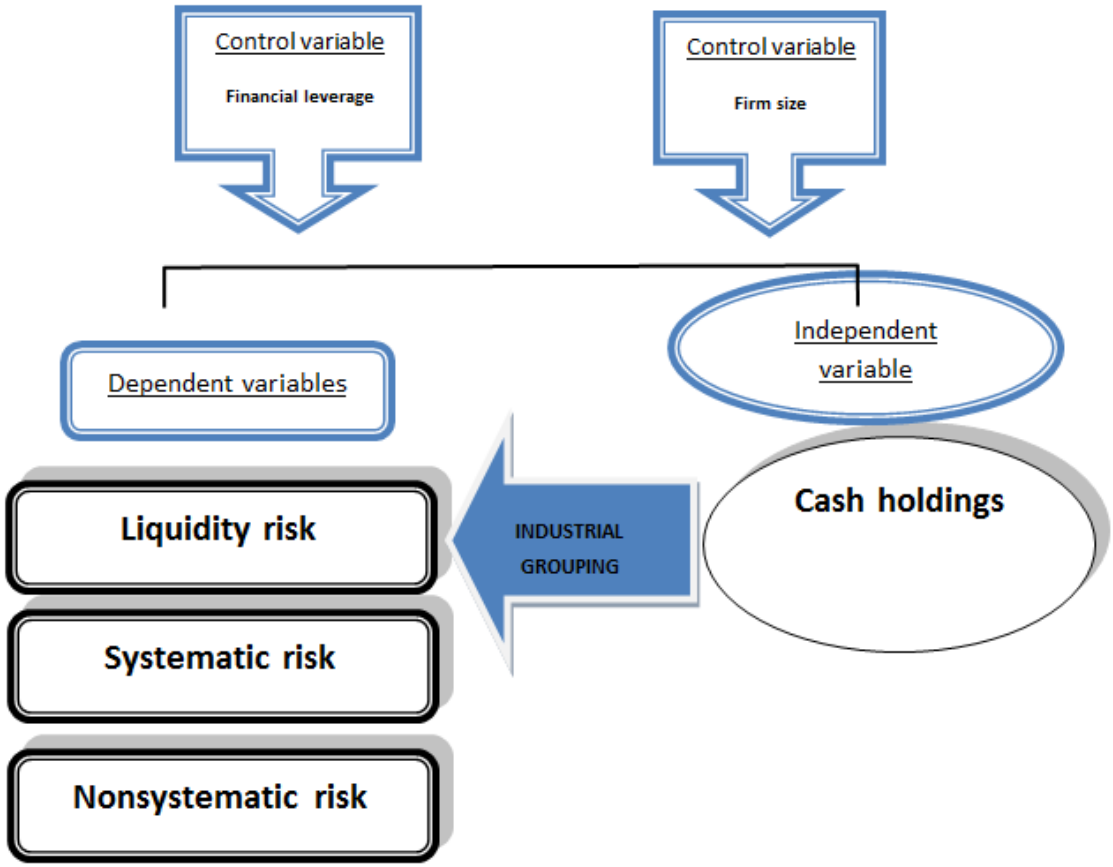

Figure 1: Conceptual model of the study

The conceptual model of the study is defined as follows:

$Y_1=F(x_1)$

$Y_2=F(x_2)$
$Y_3=F(x_3)$
Where, *Y1* is the liquidity risk, *X1* is cash holdings, *Y2* is the systematic risk, *X2* stands for the firm size, *Y3* shows, the nonsystematic risk, and *X3* is the financial leverage.

Measuring variables

Y1: To calculate the liquidity risk, the percentage of stocks issued was multiplied by the number of floating stocks. Then, the mean of floating stocks was divided by the number of floating stocks.

Y2: The coefficient of β is used as an index to assess the systematic risk and it shows how sensitive a given stock is to the whole market. This sensitivity can be assessed based on the historical trends of the firm and market returns and as such it is possible to determine how market changes affect a given stock. In other words, the simultaneous assessment of the market returns and the returns on a given stock shows the stock sensitivity. The market risk or systematic risk is calculated by determining the value of β in capital asset pricing model by dividing stock and market return covariance by market return variance. The value of β is calculated through the following equation:

$$\beta_j = \frac{\mathrm{COV}\ (K_{m\ ,} K_j)}{\mathrm{Var}\ (K_m)}$$

Where, K_j is the return on stock j, K_m is the market return (which can be calculated through the stock variations in the stock market), and βj is the systematic risk of stock j.

Y3: In most studies, the standard deviation of the error term in Fama and French's three-factorial model is used to measure the nonsystematic risk as a factor that causes surplus returns on the stocks. Therefore, the standard deviation of the error term in the model was used in this study to calculate the nonsystematic risk:

$$r_{it} = \alpha_o + \alpha_1 mkt_{\ \ it} + \alpha_2 hml_{\ \ t} + \alpha_3 smb_{\ \ t} + \upsilon_{it}$$

Where, r_{it} is the dependent variable that shows returns on stock minus the free-risk return of the firm i at the time t, mkt_{it} is the market returns minus the free-risk return of the firm i at the time t, hml_t is the returns on value stocks minus growth stocks at time t, smb_t is the return on stocks of small firms minus the stocks of large firms at time t, Vit is the error term in the regression model that includes the impact of all variables excluded from the model. In addition, the standard deviation of the error term was used in this study as the corresponding value of nonsystematic risk.

X1: Cash holding that is calculated by dividing cash or its equivalent to net assets:
Hold Cash = Cash/net assets

X2: Firm size this is measured as the log of net sale:
SIZE = Log net sale

X3: Financial leverage that is calculated by dividing total liabilities to total assets:
LEV = Total liabilities/total assets

Classification of variables

Y1, Y2, and Y3 were used as the dependent variables. In addition, X1, X2, and X3 were employed as the independent variables in this study where X2 and X3 are the firm size and the financial leverage (control variables), respectively, that are included in the multilevel analysis.

Linear relationships between variables

The relationships between variables under study are expressed as follows:
$Y1=\alpha + \beta1\ x1 + \beta2\ x2 + \beta3\ x3$
$Y2=\alpha + \beta1\ x1 + \beta2\ x2 + \beta3\ x3$
$Y3=\alpha + \beta1\ x1 + \beta2\ x2 + \beta3\ x3$
Where, Y is calculated through regression coefficient of n and the estimation of other parameters including α, β1, β2, and β3.
After collecting the required data, EXCELL spread sheet was used to classify the data and calculate the variables. Finally, the data were analyzed using SPSS 19 and Eviews 7.

4. RESULTS

This section presents the results of descriptive statistics such ad means, medians, standard deviations, skewedness, and elongation for all variables. These indices show the distribution of variables. Finally, the research

models were estimated using multiple regression analysis and the hypotheses were tested. In addition, regression presumptions were tested and controlled.

4. 1. Descriptive statistics

Table 1 shows the descriptive statistics for the variables under study including measures of central tendency, measures of dispersion, and measures of variables distribution:

Table 1: Descriptive statistics for the variables under study

Variables	Symbol	Number	Mean	Median	SD	Min	Max	Skewedness	Elongation
Liquidity risk	RN	400	3.6905	2.9315	3.641	0.00	28.94	2.10	9.582
Systematic risk	RS	400	0.6279	0.4050	1.194	-9.36	13.76	2.61	50.799
Nonsystematic risk	RGHS	400	7.8445	6.28	7.701	-3.10	15.20	3.54	22.178
Cash holding	CASH	400	0.1111	0.029	0.19	0.00	1	2.36	6.981
Firm size	SIZE	400	13.062	13	1.212	9.88	17.56	0.446	0.674
Financial leverage	LEV	400	0.6027	0.6210	0.1751	0.1	1.02	-0.366	-0.256

As can be seen in the above table, the greater values of means than medians point to the existence of great points in the data as the means are affected by these values. In such cases, the data are skewed to the right. Besides, the close equivalence of mean and median values shows the normality of and consistency of the data. In addition, the distribution of nonsystematic risk is more skewed to the right than other variables. The mean and median values for some variables are close so such variables have symmetric distribution.

4. 2. Model validation

The validity of the estimated models is dependent on the satisfaction of the presumptions needed to estimate the models. The research presumptions were tested in this study using recognition graphs and the equality of variances were assessed using White test as follows:

4.2.1. Normality of variables distribution

The normality of residuals of the regression model is one of the regression assumptions which shows the validity of the regression tests. The distribution of research variables were tested using Kolmogorov-Smirnov test as shown in Table 3. Since the normality of the dependent variable shows the normality of the normality of residuals in the regression model, the normality of the dependent variable (risk-taking indices) was assessed before estimating the model parameters. Accordingly, the null and alternative hypotheses are stated as follows:

H0: The data for the dependent variables follow a normal distribution.

H1: The data for the dependent variables do not follow a normal distribution.

Table 2 shows the results of the results of One-Sample Kolmogorov-Smirnov test for the dependent variables (investment risks):

Table 2: Results of One-Sample Kolmogorov-Smirnov test for the dependent variables (investment risks)

Dependent variables	Number	Kolmogorov-Smirnov	Sig.
Liquidity risk	400	0.413	0.000
Systematic risk	400	0.189	0.000
Nonsystematic risk	400	0.192	0.000

As can be seen in the above table, since the significance values for the research variables are less than 0.05 ($P < 0.05$), the null hypothesis i.e. the normality of variables was rejected. To compensate for the problem in Table 2, a natural logarithm was used. Since some of the value of some variables is negative, the natural logarithms of the absolute values for all dependent variable data were calculated as shown in Table 3:

Table 3: Results of Kolmogorov-Smirnov test for the dependent variables (investment risks)

Dependent variables	Number	Kolmogorov-Smirnov	Sig.
Liquidity risk logarithm	400	0.025	0.097
Systematic risk logarithm	400	0.052	0.065
Nonsystematic risk logarithm	400	0.049	0.088

As can be seen in the above table, the significance values for the research variables are less than 0.05 ($P < 0.05$), so the null hypothesis was rejected. So the dependent variables (investment risks) are normally distributed.

4.2.2. Variance Inconsistency

To assess the variance inconsistency of error terms, White test was used as shown in Table 4:

Table 4: Results of White inconsistency test

Model	Statistics	Value	Probability
Model 1	F-statistic	1.441	0.2083
	Obs*R-squared	7.186	0.2071
Model 2	F-statistic	1.490	0.1492
	Obs*R-squared	13.30	0.1494
Model 3	F-statistic	0.8768	0.5460
	Obs*R-squared	7.934	0.5408

As shown in the table, since the values from the test are significant at 5% significance level, the variance consistency assumption was confirmed and the variance inconsistency of the error terms was rejected as $Var\ (Ui)\ \delta^2 I$ was confirmed. Such conditions in the regression model make OLS results more efficient.

4.3. Multiple regression model

Regression analysis was used to test the relationship between the dependent and independent variables. It should be noted that the model significance was assessed using variance analysis table (If the F-value was less than 0.05, the model would be significant). Then, the correlation value was tested using the coefficient of determination. Then, the parameters were determined based on the model significance using t-values. Finally, the regression presumptions were assessed:

4.4. Testing Research Hypotheses

4.4.1. Testing the main research hypothesis

The main research hypothesis stated that there is a significant relationship between cash holdings and investment risks among firms listed in Tehran Stock Exchange in various industries. To test the validity of this hypothesis, the research sub-hypotheses were analyzed as follows:

4.4.2. Testing the first research sub-hypothesis

The first research hypothesis stated that there is a significant relationship between cash holdings and liquidity risk among firms listed in Tehran Stock Exchange. Table 5 shows the results of testing this hypothesis:

Table 5: Pearson correlation between cash holdings and liquidity risks

Correlation	Cash holdings
Pearson correlation for cash holdings	0.283-*
Significance level for cash holdings	0.029
Number of cash holdings risks	400

Significance level = 0.05

Pearson correlation coefficient for the relationship between cash holdings and liquidity risk is shown in the above table at the significance level of 0.05. The values with an asterisk (*) are significant at 95% significance level. As can be seen, the correlation value between cash holdings and liquidity risk is -0.283. As such, there is a negative significant correlation between the two variables. Table 6 shows the results of regression analysis for the research hypotheses:

Table 6: Results of regression analysis for relationship between cash holdings and liquidity risk (in presence of control variables)

Model	Sum of squares	df	Mean squares	F	Sig.
Regression	101.595	3	33.865	20.004	0.000
Residuals	670.388	396	1.693		
Total	771.984	399			

As can be seen, cash holdings (independent variable), liquidity risk logarithm (dependent variable), and firm size and financial leverage (control variables) were tested as variables in the regression analysis at significance level of 0.000. Since the significance value is less than 0.05, the above hypothesis was rejected at 95% confidence level. Therefore, it can be suggested that there is a negative significant relationship between cash holdings and liquidity risk. Table 7 shows correlation coefficient, coefficient of determination, adjusted coefficient of determination, and results of Durbin-Watson test for cash holdings and liquidity risk (in the presence of control variables):

Table 7: Correlation values for the relationship between cash holdings and liquidity risk

Model	Correlation	R	Adjusted R	Std. Error	Durbin-Watson
1	0.363	0.132	0.125	1.30	1.712

As can be seen, cash holdings (independent variable), liquidity risk logarithm (dependent variable), and firm size and financial leverage (control variables) were tested as variables in the correlation analysis. The value of coefficient of determination is 0.132 which shows that 13.2% of the variances in the dependent variable (liquidity risk) can be explained by the model. Besides, the value of Durbin-Watson test is 1.712 which indicates that the errors are independent from each other and there is no autocorrelation between them. Therefore, there is no correlation between error values, so regression analysis can be used. Table 8 presents the model coefficients after excluding in significant variables from the model:

Table 8: Correlation values between cash holdings and liquidity risk

Variables	Non-standardized coefficients		Standardized coefficients	t	Sig.	Collinear statistics	
	β	Std. Error	β			Tolerance	Vif
Intercept	5.424	0.777		6.976	0.000		
Cash holdings	-0.192	0.358	-0.026	-2.236	0.033	0.910	1.099
Firm size	-0.404	0.056	-0.352	-7.172	0.000	0.911	1.098
Financial leverage	0.941	0.372	0.119	2.528	0.012	0.998	1.002

As evident in the above table, the t and probability values indicate that the coefficients of the model variables are significant at significant level of 5%. Therefore, their inclusion in the model is necessary. As such, it can be said that there is a linear relationship between cash holdings and liquidity risk in firms listed in Tehran Stock Exchange. Therefore, Model 1 is expressed as follows:

$$LNRN = 5.424 - 0.192\ CASH - 0.404\ SIZE + 0.941\ LEV \qquad \text{(Model 1)}$$

The following figure assesses the normality of errors as one of the assumptions of the linear regression:

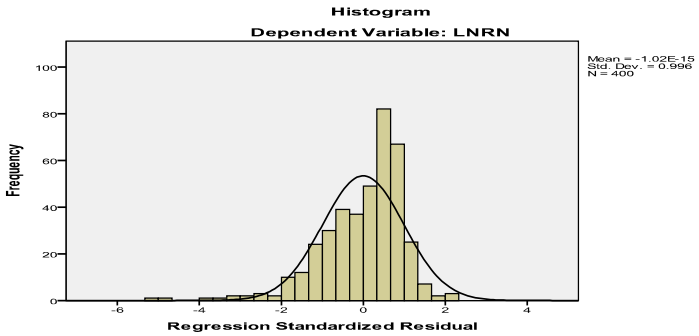

Figure 2: Normality of model errors

According to the normality assumption, the regression model errors are normally distributed with a mean of 0 and a standard deviation of 1. Therefore, as shown in the above figure, errors have a normal distribution. To assess colinearity, VIF value was used. Since this value is less than 10, the nonlinearity of the independent variables is confirmed.

4.4.3. Testing the second research sub-hypothesis

The second research hypothesis stated that there is a significant relationship between cash holdings and systematic risk among firms listed in Tehran Stock Exchange. Table 10 shows the results of testing this hypothesis:

Table 9: Pearson correlation between cash holdings and systematic risk

Correlation	Cash holdings
Pearson correlation for systematic risk	-0.032
Significance level for systematic risk	0.522
Number of systematic risks	400

Significance level = 0.05

Pearson correlation coefficient for the relationship between cash holdings and systematic risk is shown in the above table at the significance level of 0.05. The values with an asterisk (*) are significant at 95% significance level. As can be seen, the correlation value between cash holdings and systematic risk is not significant. As such, there is no significant correlation between the two variables.

4.4.4. Testing the third research sub-hypothesis

The third research hypothesis stated that there is a significant relationship between cash holdings and nonsystematic risk among firms listed in Tehran Stock Exchange. Table 10 shows the results of testing this hypothesis:

Table 10: Pearson correlation between cash holdings and nonsystematic risks

Correlation	Cash holdings
Pearson correlation for nonsystematic risk	-0.012
Significance level for nonsystematic risk	0.815
Number of nonsystematic risks	400

Significance level = 0.05

Pearson correlation coefficient for the relationship between cash holdings and nonsystematic risk is shown in the above table at the significance level of 0.05. The values with an asterisk (*) are significant at 95% significance level. As evident in the table, the correlation value between cash holdings and nonsystematic risk is not significant. As such, there is no significant correlation between the two variables.

The following section addresses the impact of the type of industries on the relationship between cash holdings and liquidity risk indices. The firms under study were divided into 15 industries. This study explored the relationship between cash holdings and investment risks in industries with at least 5 firms. These industries were automobile manufacturing, medicine, chemicals, cement, lime, and plaster, and food industries except for sugar industry. The relationship between cash holdings and liquidity risk in such industries was assessed using Pearson correlation test. Table 11 shows the values of Pearson correlation matrix:

Table 11: Pearson correlation coefficients for cash holdings and liquidity risks in different industries

Industry		Liquidity risk logarithm
		Cash holdings
Automobile	Pearson correlation	-0.241*
	Sig.	0.034
	Number	70
Medicine	Pearson correlation	-0.366*
	Sig.	0.012
	Number	100
Chemicals	Pearson correlation	-0.052
	Sig.	0.751
	Number	40
Cement, lime, and plaster	Pearson correlation	0.322
	Sig.	0.116
	Number	25
Food industry except for sugar	Pearson correlation	0.363
	Sig.	0.014
	Number	30

Significance level = 0.05

As can be seen, there is a significant relationship between cash holdings and liquidity risks in the Iranian capital market in automobile, medicine, and food industries except for sugar industry. The probability values for these industries are 0.034, 0.012, and 0.014, respectively. In contrast, there is no significant relationship between cash holdings and liquidity risks in the Iranian capital market in chemicals and cement, lime, and plaster industries with probability values of 0.75 and 0.116, respectively.

Table 12 shows the values of Pearson correlation correlations for cash holdings and systematic risk:

Table 12: Pearson correlation coefficients for cash holdings and systematic risks in different industries

Industry		Systematic risk logarithm
		Cash holdings
Automobile	Pearson correlation	-0.016

	Sig.	0.893
	Number	70
Medicine	Pearson correlation	-0.072
	Sig.	0.483
	Number	100
Chemicals	Pearson correlation	-0.082
	Sig.	0.617
	Number	40
Cement, lime, and plaster	Pearson correlation	0.322
	Sig.	0.116
	Number	25
Food industry except for sugar	Pearson correlation	0.363
	Sig.	0.849
	Number	30

Significance level = 0.05

As can be seen, there is no significant relationship between cash holdings and systematic risk in the Iranian capital market in automobile, medicine, chemicals, cement, lime, and plaster, and food industries except for sugar industry with probability values of 0.893, 0.483, 0.617, 0.116, and 0.849, respectively. Table 13 shows the values of Pearson correlation correlations for cash holdings and nonsystematic risk:

Table 13: Pearson correlation coefficients for cash holdings and nonsystematic risks in different industries

Industry		**Nonsystematic risk logarithm**
		Cash holdings
Automobile	Pearson correlation	0.036
	Sig.	0.765
	Number	70
Medicine	Pearson correlation	0.069
	Sig.	0.497
	Number	100
Chemicals	Pearson correlation	0.027
	Sig.	0.869
	Number	40
Cement, lime, and plaster	Pearson correlation	-0.029
	Sig.	0.89
	Number	25
Food industry except for sugar	Pearson correlation	-0.067
	Sig.	0.723
	Number	30

Significance level = 0.05

As shown in the table, there is no significant relationship between cash holdings and nonsystematic risk in the Iranian capital market in automobile, medicine, chemicals, cement, lime, and plaster, and food industries except for sugar industry with probability values of 0.765, 0.497, 0.869, 0.890, and 0.723, respectively.

Table 14: Summary of testing research hypotheses

Relationship between variables	**Correlation**	**Sig.**	**Test result**	**Hypotheses**
Relationship between cash holdings and liquidity risk	-0.283	0.029	Negative significant relationship	Confirmed
Relationship between cash holdings and systematic risk	-0.032	0.522	No significant relationship	Rejected
Relationship between cash holdings and nonsystematic risk	-0.012	0.815	No significant relationship	Rejected

5. DISCUSSION AND CONCLUSION

Cash holdings are among important factors affecting investment risks in firms. Given the impact of cash holdings on investment risks, the main objective of this study was to explore the relationship between cash holdings and investment risks including liquidity risk, systematic risk, and nonsystematic risk. The results of testing the research hypotheses suggested that there was a significant relationship between cash holdings and liquidity risk. However, there was no significant relationship between cash holdings and systematic and nonsystematic risks.

Banerjee et al., (2007) found that stockholders with less cashable stocks are more willing to receive cash profits. In fact, their results indicated a negative significant relationship between stock market liquidity and cash profit distribution. This is consistent with the results of the present study. Ahmadpour and Jamkarani (2005) studied the relationship between accounting information and market risk. The results suggested that there is no significant relationship between accounting information and market risk (systematic risk). This shows that historical accounting information is not fully reflected in securities' prices in Tehran Stock Exchange. In other words, Tehran Stock Exchange is not efficient enough. The findings in the present study are in line with Ahmadpour and Jamkarani's (2005) study in this regard. Our findings showed that there is a relationship between cash holdings and liquidity risk at 95% significance level. However, this relationship was not significant.

5.1. Results of testing research hypotheses in terms of variables under study

The findings of the study concerning the main research hypothesis which stated "there is a linear significant relationship between cash holdings and investment risks among firms listed in Tehran Stock Exchange in various industries" and the three research sub-hypotheses are presented as follows:

H1: There is a significant relationship between cash holdings and liquidity risks in different industries.

The above hypothesis was tested through Pearson correlation test to determine the relationship between cash holdings and liquidity risk in the sample under study. As this hypothesis was confirmed, the impact of the type of industries on the relationship between cash holdings and liquidity risk was assessed. The result indicated that there was a significant relationship between cash holdings and liquidity risk in automobile, medicine, and food industries except for sugar industry. However, the relationship between the two variables was not significant in chemicals, and cement, lime, and plaster industries.

H2: There is a significant relationship between cash holdings and systematic risks in different industries.

The above hypothesis was explored using Pearson correlation test to determine the relationship between cash holdings and systematic risk in the sample under study. As this hypothesis was not confirmed at 5% error level, the impact of the type of industries on the relationship between cash holdings and systematic risk was assessed. It was noted that there was no significant relationship between cash holdings and systematic risks in automobile, medicine, chemicals, cement, lime, and plaster, and food industries except for sugar industry.

H3: There is a significant relationship between cash holdings and nonsystematic risks in different industries.

The above hypothesis was explored using Pearson correlation test to determine the relationship between cash holdings and unsystematic risk in the sample under study. As the hypothesis was not confirmed at 5% error level, the impact of the type of industries on the relationship between cash holdings and nonsystematic risk was assessed. It was shown that there was no significant relationship between cash holdings and nonsystematic risks in automobile, medicine, chemicals, cement, lime, and plaster, and food industries except for sugar industry.

The findings of this study, in general, indicated that there was a negative significant relationship between cash holdings and liquidity risk. In contrast, there was no significant relationship between cash holdings and systematic risk and between cash holdings and nonsystematic risk.

6. Suggestions

The following suggestions are offered in line with the findings of the study:

1. Given the different results concerning the relationship between cash holdings and investment risks, investors, stockholders, and mangers are recommended to increase their knowledge on concepts and indices of stocks liquidity and investment risks and take them into account more seriously when making decisions.
2. Investors are suggested to pay more attention to liquidity level of a firm's shares before making any investment decisions.
3. Activists in financial markets are advised to take into account the relationship and the impact of cash holdings and investment risks.

7. Limitations

The present study ran into a number of shortcomings so care must be exercised when using the findings:

1. The inefficiency of the Iranian capital market as an intervening factor might have affected the results of the study as it was not possible to control it for the purpose of this study.
2. The inflation rate may affect the quality of accounting information. Since the inflammation rate in Iran varied in different periods and the financial data were used in this study without being modified for the impact of inflation, such impact must be taking into account when generalizing the findings of this study.

REFERENCES

Ahmadpour, A.; Gamkarani, R. 2005. Relationship between accounting information and market risk. *Journal of Social Sciences and Humanities of Shiraz University, 22*(2).

Izadinia, N.; Alinaghian, N. 2010. Relationship between earning prediction errors and financial and business risks in firms listed in Tehran Stock Exchange. *Accounting Research*, 7.

Malekian, E.; Ahmadpour, A.; Mohammdi, M. 2011. Relationship between cash holdings and factor determining them in firms listed in Tehran Stock Exchange. A*ccounting Research, 3*(11).

Piri, P.; Heidari; H.; Raouf, S. 2013. Relationship between systematic risk and economic value added in Iran. *Quarterly of Economic Research and Policies, 21*(66), 169-186.

Saeedi, A.; Ramshe, M. 2011. Factors determining stock systematic risk in Tehran Stock Exchange. *Journal of Financial Accounting Research, 3*(1, 7).

SamadiLorgani, M.; Imeni, M. 2013. Relationship between working capital and cash holdings in firms listed in Tehran Stock Exchange. Quarterly of Accounting Knowledge and Management Accounting, 5, 39-51.