

The Effect of Cash Holding Level and Credit Risk of Bank on Dividend Policy of the Banks Listed in Tehran Stock Exchange

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Abstract

The present study aims to examine the effect of cash holding level and credit risk of the bank on dividend policy of the banks listed in Tehran Stock Exchange during 2011 and 2015. In this regard, the cash holding level and credit risk are the independent variables, and the dividend policy is the dependent variable. The size, financial leverage, systemic risk and growth opportunities of the bank are also considered as control variables. The statistical population of research includes 17 banks. The research method is a descriptive-correlational with an applied approach. The data collection method was library study in the theoretical part, and financial statements documentation was used for hypotheses test. In general, the statistical method used in this study is correlation and multiple regression. According to the first hypothesis results, the level of cash holdings has a significant inverse effect on dividend policy of banks. Also, based on the second hypothesis, credit risk has an inverse and significant effect on dividend policy of banks. The results of the control variables showed that the variables of financial leverage and systematic risk have an inverse and significant effect on dividend politics, while the bank size and growth opportunities have a direct and significant effect on dividend politics.

Keywords: Cash Holding Level, Credit Risk, Dividend Policy, Financial Leverage, Systematic Risk, Bank Size, Growth Opportunities.

1. Introduction

When a bank announces its profits regularly, investors believe that this continuity and stability indicate the continuation of the normal operations of the bank, and the reduction in announced dividends may indicate a potential problem in the bank. For this reason, banks' management strives to adopt a stable dividend policy and maintain or even increase dividends at a previous level in the event of a decline in bank profits. This is the significance of the dividend policy and the psychological impact of dividends on bank value, stock prices, and shareholders' expectations (Ameri, 2011).

Banks should keep dividends only as much as their investment opportunities. If there are not enough investment opportunities that can provide expected returns beyond expected returns, unused resources should be paid out as dividends. If these dividends affect the value of common stock, the dividend policy is more than a passive variable that is identified only by available investment opportunities, but also the bank can, by changing the rate of dividends, affect the shareholders' wealth (Mashayekh and Abdollahi, 2013).

Cash holdings always account for a significant percentage of banks' assets. This figure in American banks equals 8% of total assets and 9% in English banks. Typically, managers are looking for an optimal level of cash holdings in terms of advantages and disadvantages of holding cash. In other words, banks are in search of an optimal level of liquidity so that no significant losses would hurt the bank due to lack of liquidity. On the other hand, by keeping excess cash, no opportunities would be lost, and it would be the target level of liquidity of banks, which, of course, vary according to the various characteristics of banks and periods of time (Arab Salehi et al., 2012).

Considering that credit risk and cash holdings can affect the decisions of financial managers to distribute or not distribute profits, it is necessary to do such research in the Tehran Stock Exchange and provide valuable practical suggestions for bank managers for proper use of the bank's assets and funds.

2. Statement of Problem

Dividend policies are one of the primary sources of bank finance that is analyzed by complex financial models and also one of the problems most financial experts face. For this reason, there is still much to be said about the effect of dividends on shareholders' equity and other issues related to the performance of the bank. The idea is to announce the dividends as a good predictor of the future financial performance of banks (Skinner, 2014).

Evidence suggests that analysis of dividend and its changes over time can provide investors with useful information about the bank's financial performance and its ability to create future cash flows. Financial researchers such as Miller and Rock (1985) and John and Williams (1985) and other researchers have shown that dividend adjustments lead to future changes in the expected cash flow of the bank and its value. Also, many researchers have attempted to determine market response to changes in dividend (Imani Pour Moghaddam, 2011).

The dividend represents the distribution of profits among shareholders of a bank that is approved by the annual general meeting of the bank. Decisions on the distribution of profits are one of four important

financial decisions. The other important decisions include the decisions of working capital management, investment, and financing. Ross, Westerfield, and Jeff (2002) consider dividend decisions as important because they determine the payable cash flow to investors, as well as the funds that should be accumulated in the bank for investment. In addition, the dividend provides stakeholders with information about the bank's performance. The results of the research by Fung, Zakaria, and Thon (2007) showed that the investments made by the bank determine the profitability and future dividend of the bank. The distribution of profits also affects the cost of capital. The purpose adopting such interrelated decisions is to maximize the shareholders' wealth (Frankfurter et al., 2013).

On the other hand, one of the most important discussions of a commercial unit is the level of cash holdings and credit risk that play a significant role in its growth and survival (Biegly and Vidal, 2012). Balancing the current assets and liabilities, especially cash assets and short-term debts, is of particular importance, so that decision making on one affects the other. There are a variety of policies in the risk management of a business unit that derives from combining the policies of current assets and current debts and cash and liquid assets (Drobetz and et al., 2011).

In relation to the level of cash holdings under different circumstances, managers should choose appropriate policies for the bank to manage current assets and liabilities and make funds effectively. Thereby, the bank's return increases and the shareholders' equity maximizes and ultimately the risk of the bank decreases. Managing the level of cash holdings is related to finding short-term financing sources and investing those resources in short-term assets, and the increased level of cash holdings creates proper opportunities for investment (Hajiah and Feizabadi, 2011).

Credit risk is the risk of default on a debt that may arise from a borrower failing to make required payments. The banks face this risk when the borrower does not fulfill its obligations to the bank at maturity due to inability or willingness. The level of credit risk can have a significant impact on the decisions of the bank's financial managers and prevent the bank from new investment opportunities (Ahmadpour and Rasaeian, 2009).

Considering the importance of the level of cash holdings and credit risk in bank decisions and dividend policy, the main objective of this study is to investigate the effect of cash holdings and credit risk on the dividend policy of the banks listed in Tehran Stock Exchange.

3. Research hypotheses

Main hypothesis:

The level of cash holdings and credit risk have a significant effect on the dividend policy of banks.

Sub-hypotheses:

The level of cash holdings has a significant effect on the dividend policy of banks.

Credit risk has a significant effect on the dividend policy of banks.

The statistical population of this research is all the banks listed on Tehran Stock Exchange. Total of 17 stock banks was selected as statistical sample. The scope of this research is the five-year period from 2011 to 2015.

4. Research method

This research is an applied correlational study in terms of objective. It is also a retrospective and result-oriented research. In terms of method and accuracy, this is a cross-sectional type, i.e., the statistical sample is studied only at a certain period of the time period from 2011 to 2015 to collect the required data.

Definitions of variables

In this research, dividend policy is considered as the dependent variable. The variables of credit risk and banks' cash holdings are independent variables. Bank size, financial leverage, systemic risk and growth opportunities are also considered as control variables.

A. Dependent variable: The level of cash holdings

Conceptual definition: The level of cash holdings is a criterion for measuring the banks' performance and indicates the available cash of the bank following the costs necessary to maintain or develop assets or discretionary reserves. The level of cash holdings is important because it allows managers to look for opportunities that increase the value of a bank's stock. Without having cash, developing new products, doing business education, paying cash benefits to shareholders and reducing debts is not possible. On the other hand, cash holdings should be kept at a level that balance cash holding costs and inadequate cash costs.

Operational definition: According to Carrie et al. (2013), the level of cash holdings can be calculated by the following formula:

$$DiffCas_{i,t} = \text{liquid assets} / \text{total value of assets}$$

B. Independent variables

1. Dividend policy:

Conceptual definition: Since the annual profit of the bank is divided into two parts, i.e., a part of it is given to the shareholders as a profit, and another is taken into the accumulated profit account, the board of directors can take the dividend policies as a guide. Paying dividends to ordinary shareholders is one of the ways by which the bank can directly affect the shareholders' wealth. Therefore, the purpose of such a policy is to determine the role it can play in maximizing shareholders' wealth (Mashayekh and Abdollahi, 2013).

Operational definition: In this study, the ratio of a cash dividend to profit from ordinary activities is used to measure the dividend policy of the bank (Omran, 2012).

2. Credit risk:

Conceptual Definition: Credit risk is one of the important and effective indicators in risk management. Credit risk is a risk that comes from the default of the party, or more generally, a risk that comes from a "credit event." The lenders were worried about the reimbursement by the borrower. Therefore, credit risk is sometimes referred to as a 'risk of default.' Credit risk derives from the fact that a party does not fulfill the obligations of the contract due to inability or willingness. In general, credit risk can be expressed as a probable loss occurring as a result of a credit event (Karimi, 2011).

Operational Definition: Credit risk is calculated by dividing the sum of past due, deferred, and overdue claims to the total of primary facilities (Myrna and Berríos, 2013).

C. Control variables

1. Financial leverage

Conceptual Definition: These ratios determine the relationship between the financial resources used by the business entity in terms of debt or equity and, in fact, examine how they are combined.

Operational definition: In this research, the book value of long-term debts is divided by the total assets to calculate the financial leverage of the bank (Sinai and Nissi, 2011).

$$FL = D / ASSETS$$

FL = Financial leverage

D = long-term debt

ASSETS = total assets

2. Bank size

Conceptual and operational definition There are various criteria for measuring the size of a bank, including total assets, sales volume and a total number of employees.

According to Lee (2008), a natural logarithm of the total assets has been used to measure the "bank size."

$$SIZE = \text{LOG} (ASSETS)$$

3. Systematic Risk

Conceptual definition: Risks that cannot be controlled by the bank's management, such as sanctions, exchange rate fluctuations, inflation, etc., are called systematic risks.

Operational definition: Bank's sensitivity coefficient (β) was used to measure the systemic risk of the bank. Simply put, the systematic risk of each share determines the rate of return its owner must expect to acquire (Panovu, 2002, 351). The beta coefficient (β) is equal to the covariance of the stock return and the portfolio return divided by the variance of the portfolio (Kyurri, Sibrán, 2005, 106).

$$B = \text{COV} (RS, R, N) / \text{VARN}$$

B = Systematic Risk

COV(RS, R, N) = Covariance of the stock return and the portfolio return

VARN = Variance of the portfolio return

4. Bank Opportunities

Conceptual and operational definition: Although different criteria, such as P/E and M/B, can be used to explain the growth opportunities' ratios, Adam and Goyal (2008) and Lopez and Vicente (2010) believe that M/B ratio (market value to book value) has the highest amount of information about growth opportunities. Thus, in this study, the main criterion of growth opportunities is the M/B ratio, because this criterion is an efficient indicator that allows comparing this study with other research (Chen et al., 2005).

Table1: research variables

No	Variable	Type of variable	Calculation method	Reference
1	Dividend policy	Dependent	In this study, the ratio of a cash dividend to profit from ordinary activities is used to measure the dividend policy of the bank.	(Omran,2012)
2	Cash holdings	Independent	The amount of cash holding from the cash profit of the bank I during the period t, which is obtained through changes in the amount of the bank's cash profit in the current period divided by the book value of the total assets	(Bliss et al.,2015) .
3	Credit risk	Independent	Credit risk is based on the total ratio of past due, deferred, and overdue claims on the total balance of primary facilities to calculate credit risk	(Mirena and Bruce, 2013)
4	Financial Leverage	Control	To measure the financial leverage of the bank, the book value of long-term debts is divided by the total assets.	(Sinai and Nicsey, 2011)
5	Bank size	Control	The natural logarithm of the total assets	(Lee, 2008)
6	Systematic risk	Control	The beta coefficient (β) is equal to the covariance of the stock return and the portfolio return divided by the variance of the portfolio.	(K. Relley, C.Brown , 2013)
7	Growth opportunities	Control	M/B ratio (market value to book value)	(Chen et al., 2005)

5. Descriptive Findings of the Research Variables

5.1. Descriptive statistics of the research variables

Table 2: Descriptive statistics of the research variables

Variable	Number of observations	Mean	Standard Deviation	Min	Max	Skewness	Kurtosis
<i>Cash holdings</i>	85	0.2549	0.1672	0.1090	0.5159	3.123	4.890
<i>Credit risk</i>	85	0.3036	0.4981	0.0059	0.5983	0.191	-1.970
<i>Dividend policy</i>	85	0.2965	0.0419	0.1763	0.4869	3.593	7.177
<i>Systematic risk</i>	85	0.4593	0.2769	0.1724	0.8893	-1.663	3.119
<i>Financial Leverage</i>	85	0.2154	0.1252	0.0452	0.6919	-0.003	-0.212
<i>Bank size</i>	85	12.1218	0.0536	9.5107	17.2965	-0.002	-0.211
<i>Growth opportunities</i>	85	0.5531	0.2411	0.1730	0.7493	1.223	1.666

According to the table, the mean dividend policy of sample banks is equal to 29,556, with the minimum and maximum values of 0.1763 and 0.4869, respectively. The skewness and kurtosis of this variable should be 0 and 3, respectively to have a normal distribution. However, the table shows that this variable has no normal distribution. According to the table of the descriptive statistics of the research variables, the highest mean is related to the bank size and the lowest for the financial leverage. The highest standard deviation is related to the credit risk and the lowest to the dividend policy.

5.2. Normal distribution of the dependent variable

In this research, the least squares method is used to estimate the parameters of the model. This method is based on the assumption that the dependent variable of the research has a normal distribution so that its abnormal distribution violates the assumptions of this method for estimating the parameters and does not provide the right results. Therefore, it is necessary to test the normal distribution of this variable. Normality of the residuals is one of the regression assumptions that indicates the validity of the regression tests, so the normality of the dependent variables depends on the normality of the model's residuals (the difference between the estimated values of the actual values). Therefore, it is necessary to control the normality of the dependent variable before the estimation of the parameters; if the condition is not satisfied, then a suitable solution can be made to normalize it (including its transformation). In this study, the issue is examined through Kolmogorov-Smirnov statistic (K-S). The null and opposite hypotheses in this test are as follows:

$$\begin{cases} H_0 : \text{Normal Distrbuton} \\ H_1 : \text{Not Normal Distribution} \end{cases}$$

If the significance level of the test statistic is greater than 0.05 (Prob> .05), the null hypothesis regarding the normal distribution is confirmed. The results of the K-S test are presented for the dividend policy of sample banks.

Table 3: The results of the normality test for the dependent research variable

Variable	Number (N)	Statistic (KS)	Significance level (Sig)
<i>Dividend policy</i>	85	4.616	0.000

Considering that the significance level of the KS statistic for the dividend policy is less than 0.05, so the null hypothesis regarding the normal distribution of these variables at the 95% confidence level is rejected, indicating that the dividend policy variable is not normally distributed. The Q-Q plot illustrates the abnormal distribution of the dependent variable.

The normality of the dependent variable is a necessary condition for regression models, so it is necessary to normalize this variable before hypotheses test. In this study, Johnson's transformation function was used to normalize the data and analyzed by Minitab Software 16. The results of the K-S test after the data normalization are described in the table.

Table 4: The results of the normality test for the dependent variable after the normalization process

Variable	Number (N)	Statistic (KS)	Significance level (Sig)
<i>Dividend policy</i>	85	0.670	0.761

According to the table, since the significance level (Sig.) of the Kolmogorov-Smirnov statistic for the dependent variable after the data normalization is higher than 0.05 (0.776), the hypothesis is confirmed at 95% confidence level, indicating that dividend policy after the normalization process has a normal distribution.

5.3. Investigating the correlation between the research variables

In this section, we investigate the relationship between the research variables and their correlation using the Pearson correlation coefficient. The matrix of correlation coefficients between the research variables is presented in the table.

Based on the results of Pearson statistic, the variables of credit risk, cash holdings, systematic risk and financial leverage of the bank have an inverse correlation with the dividend policy. Bank size and growth opportunities have a direct and significant correlation with the dividend policy.

Table 5: Pearson Correlation Test

Variable	Cash holdings	Credit risk	Dividend policy	Systematic risk	Financial Leverage	Bank size	Growth opportunities
Cash holdings	1	-0.176 Sig (004)	-0.385 Sig (001)	-0.489 Sig (521)	-0.036 Sig (000)	0.188 Sig (402)	-0.291 Sig (187)
Credit risk		1	-0.238 Sig (003)	0.010 Sig (038)	0.012 Sig (618)	0.332 Sig (199)	0.164 Sig (083)
Dividend policy			1	-0.583 Sig (025)	-0.428 Sig (003)	0.117 Sig (015)	0.103 Sig (034)
Systematic risk				1	0.238 Sig (063)	0.478 Sig (173)	0.319 Sig (216)
Financial Leverage					1	0.511 Sig (229)	0.011 Sig (142)
Bank size						1	0.240 Sig (095)
Growth opportunities							1

5.4. Examining the colinearity between research variables

Table 6: Table of Colinearity

Variables	Eigenvalues	Status Indicator
1	2.121	3.832
2	2.109	4.217
3	2.214	4.217
4	2.658	5.773
5	2.789	5.988
6	2.928	6.376

As you can see, the near-zero eigenvalues of the internal correlation of the predictors are high. Any small change in the data values leads to large changes in the estimation of the regression equation coefficient. Eigenvalues indicate the probability of internal correlation between variables.

Status indicator greater than 15 indicates the possibility of colinearity between independent variables and values greater than 30 represent a serious problem in using regression in the present situation (Hassas Yeganeh et al., 2009). On the other hand, all status indicators are less than 15, indicating that there is no collinearity between independent variables.

5.5. Hypotheses Test Results

Table 7: Chow and Hausman Test Results

Test	Number	The statistics	Amount	Degrees of freedom	P-value
Chow	85	F	3.0932	5	0.0284
Hausman	85	χ^2	3.0705	5	0.0394

According to the Chow test results and its P-value (0.0284), the null hypothesis was rejected at 95% confidence level, indicating that panel data can be used. Also, according to the Husman test results and its P value (0.0394), which is less than 0.05, the null hypothesis is rejected at 95% confidence level, and H1 is accepted. Therefore, it is necessary to estimate the model using the fixed effects method.

It is necessary to check the absence of colinearity between the independent variables introduced to the model in order to measure the validity of the model and to examine the classical regression assumptions. Also, some tests related to the normality of the residuals, the consistency of variances, the independence of the residuals, and the absence of the specification error (linearity) should be done. Various tests can be used to test the normalization of error terms. One of these tests is the Jarque-Bera test, which is used in this study. The results of the Jarque-Bera test indicate that the residuals from the model estimation have a normal distribution at 95% confidence level, as the probability of this test (0.4342) is greater than 0.05.

Another statistical assumption of classical regression is the consistency of variance residuals. If the variances are inconsistent, the linear estimator is not unbiased and will not have the least variance. In this study, Pagan Cutting test was used to check the consistency of variances. Considering the significance level of this test, which is less than 0.05 (0.0302), the null hypothesis regarding the consistency of variance is confirmed, and it can be said that the model has an inconsistent variance problem. In this study, the generalized least squares (GLS) estimation method has been used to solve this problem. In this study, Durbin-Watson (D-W) test was used to test the non-correlation of residuals, which is one of the assumptions of regression analysis, called autocorrelation. According to the preliminary results of the model estimation, the value of the Durbin-Watson statistic was 2.42. Since it is between 1.5 and 2.5, it can be concluded that the residuals are independent of each other. In addition, a cryptographic test has been used to test whether the model has a linear relationship or it is properly explained in terms of linearity or non-linearity. Considering that the significance level of the cryptographic test (0.6238) is

greater than 0.05, the null hypothesis regarding the linearity of the model is confirmed, and the model does not have a specification error. The summary of the above tests is presented in the table below.

Table 8: Results of statistical assumptions test

Jarque-Bera		Breusch-Pagan		Durbin-Watson	Ramsey	
χ^2	P-value	F	P-value	D	F	P-value
1.3435	0.3412	1.0845	0.0302	2.42	3.4722	0.6238

According to the results of Chow and Hausman tests as well as the results of the classical regression assumptions, the research model is estimated using the panel data method through fixed effects. The results of the model estimation are presented in the table. The model estimated using Eviews 7 will be as follows:

$$Cash_{i,t} = 7.6784 - 2.1042Cash_{i,t} - 3.3801Cr - 3.0286Risk_{i,t} + 0.7383Size_{i,t} - 1.9217Fl_{i,t} + 1.6266G_{i,t} + \varepsilon_{i,t}$$

Table 9: Hypotheses test results using the fixed effects method

Variable	Factor	t-statistic	P-Value	Relationship
Fixed component	7.6784	2.6090	0.0039	-
Cash holdings	2.1042	2.2199	0.0260	Inverse
Credit risk	-3.3801	1.3084	0.0000	Inverse
Systematic risk	-3.0286	2.6084	0.0012	Inverse
Bank Size	0.7383	2.8381	0.0000	Direct
Financial Leverage	1.9217	2.3276	0.0389	Inverse
Growth opportunities	1.6266	3.5492	0.0014	Direct
Determination Coefficient				0.3924
The statistics (P-value)				0.1933 (0.0098)

In the study of the significance of the whole model, considering that the probability of F-statistic is less than 0.05 (0.0098), the whole model's significance is confirmed at 95% confidence level. The determination coefficient of the model also indicates that 20.24% of the banks' cash holdings fluctuations is explained by the variables entered the model.

5.5.1. The first hypothesis test result

The first hypothesis test aims to investigate whether the level of cash holdings has a significant effect on dividend policy of banks. Its statistical hypothesis can be explained as follows:

H_0 : The level of cash holdings has no significant effect on the dividend policy of banks.

H₁ : The level of cash holdings has a significant effect on the dividend policy of banks.

The hypothesis was estimated using the above model as panel data. In order to study the significance of the coefficients according to the results presented in the table, since the probability of t-statistic for the coefficient of cash holdings level is less than 0.05 (0.0260), the effect of cash holdings level on the dividend policy of banks is confirmed at 95% confidence level. Therefore, the first research hypothesis is confirmed at 95% confidence level, and it can be said that the level of cash holdings has a significant effect on dividend policy of banks.

The negative coefficient of this variable (-2,1042) suggests the inverse effect of the level of cash holdings on the dividend policy of banks; so that one unit increase in the level of cash holdings, the ratio of dividend decreases by 2,102.2 units. Therefore, according to the analysis carried out for the confirmation of the first hypothesis, it can be concluded that the level of cash holdings has a significant and inverse effect on the dividend policy of banks.

5.5.2. The second hypothesis test results

The second hypothesis test aims to investigate whether the level of credit risk has a significant effect on dividend policy of banks. Its statistical hypothesis can be explained as follows:

H₀ : The credit risk has no significant effect on the dividend policy of banks.

H₁ : The credit risk has a significant effect on the dividend policy of banks.

The hypothesis was estimated using the above model as panel data. In order to study the significance of the coefficients according to the results presented in the table, since the probability of t-statistic for the coefficient of credit risk is less than 0.05 (0.000), the effect of credit risk on the dividend policy of banks is confirmed at 95% confidence level.

The negative coefficient of this variable (-3.3801) suggests the inverse effect of the credit risk on the dividend policy of banks; so that one unit increase in the credit risk, the ratio of dividend decreases by 3.3801 units. Therefore, according to the analysis carried out for the confirmation of the second hypothesis, it can be concluded that the credit risk has a significant and inverse effect on the dividend policy of banks.

5.5.3. The results of testing control variables

In order to study the significance of the coefficients according to the results presented in the table, since the probability of t-statistic for the coefficient of bank size, financial leverage, growth opportunities and systematic risk of the bank is less than 0.05, the effect of these variables on the dividend policy of banks is confirmed at 95% confidence level. The negative coefficients of financial leverage and systematic risk suggest the inverse effect of these variables on the dividend policy of banks; The positive coefficients of growth opportunities and bank size indicate the inverse effect of these variables on the distribution ratio of the banks.

6. Discussion and Conclusion

In today's complicated economic environments, it is necessary to examine the factors affecting the dividend policy of banks. The level of profit distribution among shareholders is a performance measure. Dividend policies are one of the primary sources of bank finance that is analyzed by complex financial models and one of the problems most financial experts face. There is still much to be said about the effect of dividends on shareholders' equity and other issues related to the performance of the bank. The idea is to announce the dividends as a good predictor of the future financial performance of banks.

Evidence suggests that analysis of dividend and its changes over time can provide investors with useful information about the bank's financial performance and its ability to create future cash flows. Financial researchers such as Miller and Rock (1985) and John and Williams (1985) and other researchers have shown that dividend adjustments lead to future changes in the expected cash flow of the bank and its value. Also, many researchers have attempted to determine market response to changes in the dividend.

The dividend represents the distribution of profits among shareholders of a bank that is approved by the annual general meeting of the bank. Decisions on the distribution of profits are one of four important financial decisions. The other important decisions include the decisions of working capital management, investment, and financing. Ross, Westerfield, and Jeff (2002) consider dividend decisions as important because they determine the payable cash flow to investors, as well as the funds that should be accumulated in the bank for investment. In addition, the dividend provides stakeholders with information about the bank's performance. The results of the research by Fung, Zakaria, and Thon (2007) showed that the investments made by the bank determine the profitability and future dividend of the bank. The distribution of profits also affects the cost of capital. The purpose of adopting such interrelated decisions is to maximize the shareholders' wealth. The findings of this research can be described as follows:

According to the first hypothesis results, there is a significant and inverse relationship between the level of cash holdings and dividend policy of the banks listed in Tehran Stock Exchange between 2011 and 2015. It implies that as the managers want the level of cash holdings to be increased, it's less likely to distribute profits to shareholders.

Sometimes financial managers decide to hold cash for various reasons. One of the reasons is the fluctuations in economic conditions or the decision to use profitable projects or stock purchases. In this context, however, the bank's managers are less likely to distribute profits and thus reduce the accumulated bank's profits and increase their cash holdings.

According to the second hypothesis results, credit risk has an inverse and significant effect on the dividend policy of the banks listed on Tehran Stock Exchange in 2011-2015. It implies that the higher is the credit risk and the managers intend to reduce it; they are less likely to distribute profit to shareholders.

Credit risk generally results from the probability of deferment, doubtful, or part of the credit portfolios of banks due to internal factors (such as credit management weaknesses, internal controls, follow-up, and supervision) or external factors (such as economic recession, crisis, etc.). Credit risk is so important in banks that the allocated resources are in fact the bank's debt to shareholders, people, and banks, which can

weaken the power of "lending" and "debt collection" of the monetary entity in case of freezing. In this case, the bank faces bankruptcy, and its profitability and financial performance are reduced, which ultimately leads to a reduction in the ratio of dividends.

The results of the control variables showed that:

Financial leverage has an inverse and significant effect on the dividend policy. The financial leverage reflects the bank's bankruptcy risk. The higher the financial leverage of a bank, the bank cannot participate in profitable activities and reduce its performance and profitability. At a time when the financial performance of the bank is reduced, managers reduce the dividends of the bank because of the loss of shareholders' confidence and the fall of the bank's stock.

The bank size and growth opportunities have a direct and significant effect on the dividend policy of banks, and it implies that larger banks with a large number of assets are more likely to invest in profitable projects; because these banks make the right decisions in finance based on their adequate financial resources and financially-focused finance managers. One of the right decisions is the use of growth and investment opportunities, leading to higher financial performance and higher cash flows in the bank. On the other hand, large banks often have more shareholders and those who intend to enter the capital market invest heavily on the stocks of these banks that will increase profitability and eventually distribution of profits among the shareholders.

The systematic risk of a bank has an inverse and significant effect on the dividend policy of banks. It implies that systematic risk relates to external factors and generally refers to macroeconomic fluctuations, most notably exchange rates and economic sanctions. According to the research results, the financial managers of banks are better preferred to deal with the problems in these conditions by increasing the discretionary reserves and reducing the distribution of profits among shareholders. A high level of cash holdings and less distribution of profits among shareholders in these circumstances can reduce the bank's bankruptcy risk.

The results of this study are consistent with the research by Wiue et al. (2015), Nadeem (2015) and Aghaei et al. (2013), Foroughi et al. (2011), and inconsistent with the results of Rezaei (2015), Kashanipour and Naghinejad (2009).

7. Suggestions

Based on the evidence obtained from the study and the results of the hypotheses test, this research offers suggestions for Tehran Stock Exchange, shareholders and managers of the banks as follows:

Based on the first hypothesis results regarding the inverse and significant effect of the level of cash holdings on dividend policy, it is recommended that banks; financial managers prefer the reduction of cash holdings level on the distribution of profits among shareholders; because it is very important to attract the confidence of shareholders and those who intend to enter the capital market; this. On the other hand, banks that make dividends give a message about the good financial performance of the bank to the capital market activists.

Based on the results of the second hypothesis on the inverse effect of credit risk on dividend policy, the financial managers of the banks are recommended to pay attention to the external environment of the organization and the country and hold high level of cash holdings and reduce the distribution of profits to prevent the bank from becoming bankrupt in economic crises such as the exchange rate and economic sanctions.

It is recommended to those who intend to invest in bank stock that, if the dividend policy of banks is important for them, they should pay particular attention to the credit risk of banks, and consider that banks with high credit risk are less likely to distribute profits.

8. Suggestions for future research

1. Investigating the effect of the level of cash holdings and credit risk on the dividend policy of companies by industry in Tehran Stock Exchange
2. Examining the effect of ownership on the relationship between the level of cash holdings and credit risk with the dividend policy of banks
3. Investigating the factors affecting the dividend policy in Tehran Stock banks using genetic algorithm and artificial neural networks
4. Investigating the effect of the level of cash holdings and credit risk on the dividend policy of companies by the stages of life cycle of the companies listed on the Tehran Stock Exchange

References

- Ameri, Maryam (2011). "Dividend Policy and The Factors Affecting The Companies Listed on Tehran Stock Exchange and its Relationship with Profit Quality," Master's Thesis, Al-Zahra University
- Biegliy R., Vidal S. (2014). Cash flow management and manufacturing firm financial performance: A longitudinal perspective, *International Journal of Production Economics*, Volume 148, Pages 37-50
- Chang, Y, Y. & Faff, R. & Hwang, C-Y. (2010). "Credit risk and Stock Returns in Japan: New evidence." *Pacific- Basin Finance Journal*, 18. Pp: 90-115. Available at HTTP: www.elsevier.com.
- Daskalakis, N., & Psillaki, M. (2014). The Determinants of Cash flow of SMEs: Evidence from the Greek and French firms
- DeAngelo H., and L. DeAngelo (2011), Capital Structure, Payout Policy, and Cash Flow, Working Paper No. FBE 02-06, Marshall School of Business, University of Southern California. Available at SSRN: <http://ssrn.com/abstract=916093>;
- Drobtz Liu and Olumuyiwa S. Adedegi (2011); "Determinants of Cash flow in the Islamic Republic of Iran: A Macroeconomic Analysis," IMF Working Paper, / 00/127, July.
- Frankfurter, George. Wood Jr, Bob G. (2013). Dividend policy theories and their empirical tests. *International Review of Financial Analysis*, vol. (11), pp. 111-138
- Ghaemi Mohammad Hossein, Rahimpour Mohammad (2011); "Announcement of Seasonal Profit and Stock Liquidity"; *Journal of Financial Accounting Research*, Second Year, No. 4, Winter 2011.

- Haghighat Hamid, Ali Asadollahi; The Profitability of Accounting Estimates in the Prediction of Profits and Future Cash Flows, *Quarterly Journal of Empirical Research on Financial Accounting*, No. 2, Winter 2011, p. 29
- Hajihah, Mohammad, and Feizabadi, Jalal (2011), "The Investigation of the Relationship between the Conversion Cycle of the Cash Flow and the Liquidity Ratios in The Companies Listed in the TSE," *Journal of Accounting and Auditing Reviews*, University of Tehran, No. 42.
- Imani Pour Moghadam, Alireza. (2011). "Investigating the Relationship Between Dividend Changes and Changes in Future Profits of Banks Listed in Tehran Stock Exchange" *Quarterly Journal of Accounting Research*. University of Isfahan
- Karimi Mehdi (2011); "Reviewing the pricing of liquidity, size, value and credit risk in Tehran Stock Exchange"; Master's Thesis; Economic University.
- Khalifa Soltani, Seyyed Ahmad, Saedi, Rahman. Ethical, Hassan Ali. (2012). "Investigating the Effect of Bank Specific Features and Banking Strategic Tools on Cash Holdings Level Using Tobit Model," *Journal of Financial Accounting Researchers of Isfahan University*, No. 4, pp. 135-112.
- Malik Mohammadi, Mohammad Reza. (2011). "Dividend Policy." *Journal of the Exchange*, p. 30, p. 52
- Mashayekh Shahnaz, Abdollahi, Mahin (2013). Investigating the Relationship between Ownership Concentration, Bank Performance and Dividend Policy in The Banks Listed on Tehran Stock Exchange. *Accounting and Auditing Reviews*; 45: 25-44.
- Mitton, Todd (2014). Corporate governance and dividend policy in emerging markets. *Emerging Markets Review*, Vol. (5), pp. 406-426
- Myrna, S. and Berríos R. v. (2013), "Measuring and Predicting Credit Risk in the Stock Market," Dissertation. Available at <http://ssrn.com>.
- Omran, Naohiko (2012). Increased Presence of Foreign Investors and Dividend Policy of Japanese Firms. *Pacific-Basin Finance Journal*, pp.135-150
- Park Kwangmin, SooCheong (Shawn) Yang, (2012). Capital structure, free cash flow, diversification and firm performance: A holistic analysis, *International Journal of Hospitality Management* 33, 51-63
- Sirani Mohammad, Hejazi Rezvan and Malihe Keshavarz (2011); "The study of the effect of credit risk and other factors affecting cross-sectional returns in Tehran's stock exchange banks," *Journal of Financial Accounting Research*, Third Year, first issue, spring of 2011.
- Skinner, Belen. (2014). Dividend policy theories and their empirical tests. *International Review of Financial Analysis*, vol. (11), pp. 200-210
- Wiue J., H Falk, N Yehuda (2015). Corporate Life Cycle and Value Relevance of Cash Flow versus Accrual Financial Information. School of Economics and Management Bolzano, Italy, Working Paper 2006; 34