J. Appl. Environ. Biol. Sci., 5(11S)415-420, 2015

ISSN: 2090-4274
Journal of Applied Environmental and Biological Sciences
www.textroad.com

Effects of Dividend Policy on Investment Decisions

Zahra Lashgari Ph.D.[1], Roghiyeh Rangzan Moghaddam[2]

[1]Department of accounting, Assistant Professor, Central Tehran Branch, Islamic Azad University, Tehran, Iran
[2]Department of accounting, Master's in Accounting, Central Tehran Branch, Islamic Azad University, Tehran, Iran

Received: May 14, 2015
Accepted: August 27, 2015

ABSTRACT

Dividend Policy is one of the key factors influence many investment decisions. This paper examine whether the dividend has a any effect on investors decision making? We construct a random sample of 152 firms listed in Tehran Stock Exchange, betweem 2009 and 2014. This correlational research is applied in terms of objective. To test the hypotheses, the combined linear and multiple regression model was used.
KEY WORDS: Dividends Policy; Investment Decisions; Financial Reporting Quality,

INTRODUCTION

Investment decisions are considered as one of the crucial decisions on the survival and growth of firms. However, investment in firms can be influenced by several factors including dividend policy, firm size and financial leverage. According to Brav &et al. 2005, dividend policy has a negative effect on investment decisions due to the distribution of the firm's internal resources among shareholders and reduced liquidity.

In the research by Brav et al. (2005), evidence showed that firms that mitigated their dividend are under more financial pressure and have to provide opportunities for investment. Therefore, it is expected that the distribution of cash dividend has a more negative effect on the firms that reduced their dividend.

LITERATURE REVIEW

Studies of Miller and Modigliani (1961), showed that in a capital market, dividend policy is irrelevant to firm value. According to this hypothesis, dividend changes play an important role in information collection and affect cash flows. Dividend changes lead to changes in prices and provide information about future income and investment but dividend changes have no effect on firm value. This description only uses investment policy counts' principle and explains market reaction in reflecting information on investment policy. The basic explanation of the other theory is free cash flows based on the interaction between managers and investors. This hypothesis suggests that dividend mitigates managers' investment problem by reducing free cash flows available to managers. Therefore, the free cash flow hypothesis suggests that dividend policy has a real effect on the firm's investments and cash flows, which would be inconsistent with the dividend irrelevance theorem. Unfortunately, dividend changes almost always change investors' information set about future earnings, and the earnings information itself is an integral part of the firm's underlying operations and hence should affect firm value. In the research by Miller and Rock (1985), attempt to provide evidence on the dividend irrelevance theorem by examining the stock price reaction to dividend announcements. It is well documented that stock prices tend to react positively (negatively) to announcements of dividend increases (decreases). However, the literature has reached little consensus on what causes the price reaction. Knowledge of the cause of the price reaction is critical to determining whether the observed price reactions to dividend announcements are consistent or inconsistent with the dividend irrelevance theorem. One primary explanation for the price reaction to dividend announcement is the signaling hypothesis based on information asymmetry between managers and investors. This explanation holds that managers use dividends as a costly signal to communicate to the market their private information about the firm's future earnings prospects.

Brav et al. (2005), studied 3,840 firms and found that dividend decisions can have a negative effect on investment decisions. Unlike Lintner, they found that managers are reluctant to cut dividend and consider reaching to dividend as an unreachable goal. Managers stated that they tend to provide investment opportunities in order to reach to dividend. Daniel et al. (2010), found evidence on the results of the research by Brav et al. (2005) and tested that whether dividend cut, reduced investment or increased external investment can provide the expected level of dividend and investment. They found that a small number of firms cut their dividend, while the majority of firms mitigate investment with the expected level. In addition,

* **Corresponding Author:** Roghiyeh Rangzan Moghaddam, Department of accounting, Master's in Accounting, Central Tehran Branch, Islamic Azad University, Tehran, Iran. r.rmoghaddm@yahoo.com

the recent study and obtained evidence suggest that dividend has a negative effect on investment and will lead to investment problems.

David Han-Min Wang (2010), to explores the causal structure of corporate financial strategies for the high-tech firms in Taiwan and China. By employing path analysis and directed graphs model, explores the causal relationships among investment, financing, dividend policies, and corporate performance. The results show that the investment expenditures by Taiwan's firms positively affect financial performance and the increased borrowings jeopardize company's profits. However, the financing decisions of China's firms have a positively effect on their capital expenditures. The findings suggest that firms across the Strait adopt different strategies in financial decision environments.

Santhosh Ramalingegowda, Chuan-San Wang, and Yong Yu (2013), investigated the role of financial reporting quality on mitigating the effect of dividend policy on investment decisions and found that high-quality financial reporting significantly mitigates the effect of dividend on investment. In addition, this mitigating effect is stronger in the R&D investment than major investment and also stronger for firms with growth value.

METHODOLOGY

This descriptive accounting study is correlational and applied in terms of objective. It is also classified in the quasi-experimental research category. Epistemologically, it is empiricist, its reasoning system is deductive and it is an ex-post desk study using historical information. Information about the subject literature, theoretical foundations and history was collected from library resources and also through the study of books, publications articles and theses, both internal and external sources. Information and data required to check and test the research hypotheses was derived from the financial statements and reports submitted to the firms listed in the Stock Exchange from the Tadbir Pardaz software package and the financial information CD of firms. The research information is combinational. After data preparation, the analysis and estimation of models and hypotheses were done using Eviews7.

Statistical Population

The statistical population includes 468 firms listed in Tehran Stock Exchange which have been active up to 2014. After applying restrictions and deducting 171 firms which changed their fiscal year or modified their activities and 52 financial institutions and banks and 65 firms whose fiscal year did not lead to March 19, and 28 firms with the lack of access to information or over six months of trade gap, the statistical population includes 152 firms (912 year-firms) listed in Tehran Stock Exchange which have been active from the beginning of 2009 to March 2014.

Research variables

Dependent variable

Investment (Investment$_{jt}$): It is obtained from dividing the sum of acquisition or construction of fixed or intangible assets or other long-term assets to total assets.

Independent variable

Dividend per share (Dividend$_{jt}$): It is obtained from dividing the total ordinary dividend paid by the number of shares.

$$Dividend\ per\ share = \frac{\text{Total dividend pay out}}{\text{number of comon shares}} \quad (1)$$

Control variables

SIZE$_j$, t: Firm size in year t in firm j is the natural logarithm of total assets.

SD cfo j,t: Fluctuations in cash flows in year t and firm j is the difference of the cash from operating activities in the current and previous years divided by the previous year.

SD sale j, t: Fluctuations in the firm sales in year t and firm is the difference of sales in the current and previous years divided by the previous year.

SD investment jt: Investment fluctuations in year t of firm j is the difference of investment in the current and previous years divided by the previous year.

Bankrupcy risk j,t: To predict bankruptcy risk in year t in firm j, the Z' model adjusted by Altman (1983, p.122) based on model (5) was used (Altman, 2000; Altman, 2006, 246; Altman, 2013).

$$Z'=0.717x_1+0.847x_2+3.107x_3+0.420x_4+0.998x_5 \quad (5)$$

X_1: The working capital to total assets ratio

X_2: The retained earnings to total assets ratio

X_3: The earnings before interest and tax to total assets ratio

X_4: The book value of equity to book value of debt ratio

X_5: The sales to total assets ratio

In model (5), firms are considered bankrupt for values less than 1.23 for Z', non-bankrupt for values greater than 2.99 and within financial distress (gray) area for values of Z' between 1.23 and 2.99.
Fluctuations in the gross value of property, plant and equipment (sdppe j,t): This variable in year t in firm j is obtained by dividing the gross value of property, plant and equipment of the current and previous years by the previous year.
Leverage j): Financial leverage in year t in firm j is obtained by dividing total liabilities to total assets.
The cash flow ratio (cfop jt): The cash flow ratio in year t in firm j is obtained by dividing cash flows from operating activities to total sales.
Age index (agejt): Age index in year t in firm j is obtained from the difference between the desired year and the firm establishment year.
Operational cycle (cycle jt): Operational cycle is obtained from the long-term receivables to sales ratio plus the inventory to sales ratio multiplied by 360 in year t in firm j.
Cash holdings ration (cashhold jt): Cash holdings ratio in year t in firm j is obtained from the cash flows to total assets ratio.
(ROA j,t): Return on assets in year t in firm j is obtained from the net income to total assets ratio.
Dividends per share changes (Dividend per share j,t): Dividends per share changes in year t in firm j is obtained from the difference between the dividends per share of the current and previous years divided by the previous year.
Pre-tax profit index variable (loos j,t): This variable in year t in firm j is obtained using a dummy variable; if the firm reports a loss, it is 1, otherwise zero.
β_0: Intercept (c is constant)
β_1, β_2, β_3 β_4, β_5... β_{17}: Variable coefficients are independent.
ε : Error term

RESULTS/ANALYSIS

The descriptive statistics of variables are shown in Table (1).

Table (1): Descriptive statistics for variables in the sample firms

Variable	Observations	Mean	Median	Maximum	Minimum	Std. Dev.	Skewness	Kurtosis
Investment	912	0.150	0.118	1.710	-0.707	0.214	0.292	7.263
Dividend	912	0.102	0.068	0.910	0.000	0.118	2.357	11.558
Size	912	13.422	13.328	18.521	0.000	1.710	-2.168	22.758
Sdcfo	912	0.388	0.000	9.171	-6.618	5.078	9.270	149.523
Sdsale	912	0.227	0.160	5.190	-0.738	0.611	10.569	165.76
Sdinvestment	912	0.232	0.022	6.131	-1.000	1.401	15.785	311.639
Q_Tobin	912	1.381	1.199	12.043	0.000	0.756	5.698	63.062
Sdppe	912	0.258	0.212	0.892	0.000	0.184	1.076	3.849
Leverage	912	0.633	0.636	0.960	0.096	0.234	3.463	32.777
Cfop	912	0.188	0.147	2.338	-0.775	0.220	1.841	15.811
Age	912	3.445	3.610	4.094	1.609	0.462	-1.127	3.767
Cycle	912	5.173	5.274	7.707	-1.135	0.896	-1.883	17.615
Cashhold	912	0.039	0.029	0.261	0.000	0.036	2.186	9.691
Roa	912	0.125	0.104	0.745	-1.451	0.190	4.781	64.047
Dividend Per Share	912	0.099	0.000	2.000	-1.000	0.903	3.955	29.239

To test the research hypothesis, the panel data integration method is used, because the dependent variable is qualitative and normal, so we should use parametric statistical methods such as pooled or panel regression. The number of the year-firm observations was 912 based on balanced panel data. According to the descriptive statistic, high indicators can be divided into central, dispersion or other indexes. Central indexes

include mean and median, dispersion indexes include SD, and other indexes include minimum, maximum, skewness and kurtosis. The average index is briefly explained below. The average financial leverage shows that in most firms, the debt/assets ratio is over 50%, which suggests that the selected firms used debt more than equity in their capital structure. This can eventually lead to increased cost of debt in capital structure.

Normality test of data

The first step to start the hypothesis testing process is to check data normality. For this purpose, the Kolomogrov-Smirnov test was used. The results are presented in Table (2).

Table (2): Kolomogrov-Smirnov test results

Variable	Kolmogorov-Smirnov j	Asymp. Sig. (2-tailed)
Investment	1.174	0.125

The Kolomogrov-Smirnov test results show that the dependend variable.

Correlation between variables

To investigate the correlation between quantitative variables, Pearson's correlation coefficient is used. The test results are given in Table (3). Due to the large number of variables, this section only analyzes independent and control variables associated with the dependent variable as follows:

Table (3): Pearson's correlation matrix between independent and control variables and the investment decisions variable

DIVIDEND_PER_SHARE	ROA	CASHHOLD	CYCLE	AGE	CFOP	LEV	SDPPE	Q_TOBIN	SDINVESTMENT	SDSALE	SDCFO	SIZE	DIV	INVESTMENT	Corr Proba
														1.000000	INVI

													1.000000	-0.047076**	
													-----	0.0050	
												1.000000	0.011335	0.165804**	S
												-----	0.7325	0.0000	
											1.000000	-0.010387	0.023778	0.029192	SI
											-----	0.7541	0.4733	0.3786	
										1.000000	0.057584	0.052967	0.018937	0.182183**	SD
										-----	0.0822	0.1099	0.5679	0.0000	
									1.000000	0.035895	0.006973	0.048535	-0.045948	0.133143**	SDIN
									-----	0.2789	0.8334	0.1430	0.1656	0.0001	
								1.000000	0.015718	0.068054	0.029041	-0.027395	0.532566	0.105332**	Q_
								-----	0.6355	0.0399	0.3810	0.4086	0.0000	0.0014	
							1.000000	0.036392	0.183009	0.103345	-0.025420	-0.033244	0.005398	-0.074193*	SI
							-----	0.2723	0.0000	0.0018	0.4432	0.3159	0.8707	0.0251	
						1.000000	-0.086880	-0.057955	0.011734	-0.053130	-0.010336	0.055648	-0.360291	-0.113957**	
						-----	0.0087	0.0802	0.7234	0.1088	0.7553	0.0931	0.0000	0.0006	
					1.000000	-0.253708	0.315082	0.145443	0.289332	0.096615	0.112978	0.092281	0.285537	-0.028924	C
					-----	0.0000	0.0000	0.0000	0.0000	0.0035	0.0006	0.0053	0.0000	0.3830	

				1.000000	-0.073620	0.119623	-0.052774	0.001084	0.015011	-0.030840	-0.004544	-0.054897	-0.058286	-0.025125	
				-----	0.0262	0.0003	0.1112	0.9739	0.6507	0.3522	0.8910	0.0976	0.0785	0.4485	
			1.000000	0.114147	-0.048497	0.192646	-0.189900	-0.285766	0.005603	-0.161116	0.015081	0.055517	-0.235583	0.003827	C
			-----	0.0006	0.1433	0.0000	0.0000	0.0000	0.8658	0.0000	0.6492	0.0938	0.0000	0.9081	
		1.000000	-0.112296	0.010972	0.086573	-0.146213	-0.090967	0.182265	-0.061070	0.027006	0.069092	-0.048234	0.133589	0.118573**	CAS
		-----	0.0007	0.7407	0.0089	0.0000	0.0060	0.0000	0.0653	0.4153	0.0370	0.1455	0.0001	0.0003	
	1.000000	0.208301	-0.308032	-0.039791	0.178308	-0.480793	0.009626	0.597864	-0.019173	0.084953	0.037800	-0.036039	0.648954	0.125706**	F
	-----	0.0000	0.0000	0.2299	0.0000	0.0000	0.7716	0.0000	0.5631	0.0103	0.2541	0.2769	0.0000	0.0001	
1.000000	0.123399	0.072754	-0.088977	-0.008696	0.031373	-0.121911	-0.001652	-0.009479	-0.029687	0.115863	0.027271	-0.092948	0.135313	0.110201**	DIV PER_
-----	0.0002	0.0280	0.0072	0.7931	0.3440	0.0002	0.9603	0.7750	0.3705	0.0005	0.4107	0.0050	0.0000	0.0009	

* and ** significant at the 95% and 99% confidence level, respectively.

Hypothesis test results

Following Santhosh Ramalingegowda, Chuan-San Wang, and Yong Yu (2013), our hypothesis is test with the model below:

$investment_{jt} = \beta_0 + \beta_1 Dividend_{jt} + \beta_2 size_{jt} + \beta_3 sdcfo_{jt} + \beta_4 sdsale_{jt} + \beta_5 sdinvestment_{jt} + \beta_6 Qtobin_{jt} + \beta_7 Bancrupcy\ risk_{jt} + \beta_8 sdppe_{jt} + \beta_9 lev_{jt} + \beta_{10} cfop_{jt} + \beta_{11} age_{jt} + \beta_{12} cycle_{jt} + \beta_{13} cashhold_{jt} + \beta_{14} RoA_{jt} + \beta_{15} loos_{jt} + \varepsilon_{jt}$

Table (4): hypothesis test results

Variable	Coefficient	t-Statistic	Prob.
Dividend	-0.474	-4.203	0.000
Size	0.023	4.988	0.000
Sdcfo	0.0002	0.245	0.806
Sdsale	0.048	2.300	0.021
Sdinvestment	0.024	1.994	0.046
Q_Tobin	0.058	3.085	0.002
Bankruptrisk	-0.055	-3.670	0.000
Sdppe	-0.075	-1.666	0.096
Leverage	-0.134	-3.005	0.002
Cfop	-0.086	-1.862	0.062
Age	-0.008	-0.630	0.528
Cycle	0.018	2.137	0.032
Cashhold	0.460	2.170	0.030
Roa	0.048	0.521	0.602
Dividend Per Share	0.024	3.006	0.002
Loss	-0.087	-3.919	0.003
C	-0.164	-1.606	0.108
R Squar	0.201		
Adjusted R Square	0.187		
Durbin-Watson	1.928		
F-Statistic	14.103	**Prob.** 0.000	
F-White	2.508	**Prob.** 0.000	
Godfrey	0.447	**Prob.** 0.639	
F-Limer	1.859	**Prob.** 0.241	

Given the hypothesis test results provided in Table 4, the significance level of the F-limer statistic (0.241) is larger than the acceptable level of error (5%), so the Poold data method is superior compared to the panel data method, so it is used for the regression model fitness. In addition, given that the significance level of the F-white statistic is 0.000, regression has heteroskedasticity. After fixing this problem, the Godfrey statistic was used whose significance level is 0.639, thus regression has not the serial autocorrelation problem. Next, given that the F statistic (0.000) has a significance level below 5%, regression has explanatory power. And since the significance level of dividend (independent variable) is lower than 5%, it can be said that dividend has a negative effect on investment. For one unit increase in dividend, investment decreases 0.474 units. Among control variables, firm size, fluctuations in sales, fluctuations in investment, Torbin's Q index, bankruptcy risk, financial leverage, operating cycle, liquidity ratio, changes in paid dividend and the gains and losses index have a significant effect on investment. The Durbin-Watson statistic is between 1.5 and 2.5, so we can conclude that there is no autocorrelation between variables. Finally, the coefficient of determination value shows that changes in the dependent and control variables reflect 20.1% changes in the dependent variable.

Conclusion

Empirically many studied in the field of capital market have addressed the usefulness of accounting information for investors. The usefulness of accounting information for investors have been empirically studied through examining the relationship (lack of relationship) of published accounting figures and changes in prices or other important components needed in society. Accordingly, this study aimed to investigate the role of financial reporting quality in reduction of the negative effect of dividend policy on investment decisions in the Tehran Stock Exchange. In addition to the above theoretical basis, the research findings show that dividend has a negative effect on investment. About the hypothesis, it can be said that dividend and investment are interdependent and that a stable dividend policy prevent the economic unit from investment by reducing domestic capital. Accordingly, an increase in dividend will mitigate investment in the economic unit.

REFERENCES

1. *Altman E.I. "Financial Ratios. Discriminant Analysis and the Prediction of Corporate Bankruptcy ". in The Journal of Finance (1968):589-609.*

2. *Altman E.I. "Corporate Financial Distress. " Wiley Interscience. New York (1983).*

3. *Altman E.I., Alessandro Danovi, and Alberto Falini1. "Z-Score Models' Application To Italian Companies Subject To Extraordinary Administration".Journal of Applied Finance 23 (2013): No. 1.*

4. *Brav, A., J. R. Graham, C. R. Harvey, and R. Michaely. "Payout policy in the 21st century ". Journal of Financial Economics 77 (3) (2005): 483-527.*

5. *Daniel, N. D., D. J. Denis, and L. Naveen. "Sources of financial flexibility: Evidence from cash flow shortfall". Working paper. Purdue University (2010).*

6. *David, H. and Min, W. "Corporate investment, financing, and dividend policies in the high-tech industry". Journal of Business Research; vol. 63 (2010):486–89.*

7. *Easley, D. and M. O'Hara. "Information and the Cost of Capital". The Journal of Finance 59 (2004):1553-1583.*

8. *Miller, M. H., and F. Modigliani. "Dividend policy, growth, and the valuation of shares". Journal of Business 34 (4) (1961):411-433.*

9. *Miller, M. H., and K. Rock.."Dividend policy under asymmetric information". Journal of Finance 40(1985): 1031-1051.*

10. *Santhosh Ramalingegowda, Chuan-San Wang, and Yong Yu. "The Role of Financial Reporting Quality in Mitigating the Constraining Effect of Dividend Policy on Investment Decisions". The Accounting Review 88 (May 2013): No. 3, 1007- 1039.*