

A study on the effect of free cash flow and profitability current ratio on dividend payout ratio: Evidence from Tehran Stock Exchange

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ABSTRACT

Decision making about dividend payout is one of the most important decision that companies should encounter. Identifying factors that influence dividends can help managers in making an appropriate dividend policy. In the other side, companies' dividend payouts over time and with a stable manner may influence on stock price, future earnings growth and finally investor's evaluation about owners' equity. Hence, investigating the factors influencing dividend payout ratio is of high importance. In this research, we investigate the effects of various factors on dividend payout ratio of Tehran Stock Exchange (TSE) listed companies. We use time series regression (panel data) in order to test the hypothesis of this study. This study provides empirical evidences by choosing a sample of 102 companies over the time span of 2005-2010. The result shows that independent variables of free cash flow and profitability current ratio have negative and significant impact on dividend payout ratio; whereas, the independent variable of leverage ratio has a positive and significant impact on dividend payout ratio. The other independent ratio such as size of the company, growth opportunities and systematic risk do not have any significant influence on dividend payout ratio.

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1. Introduction

Dividend has long been an important issue for financial researchers and it has remained as one of the most controversial issues in the field of financial management (Grullon et al., 2002). Arnott and Asness (2003) investigated whether dividend policy, as observed in the payout ratio of the U.S. equity market portfolio, could predict future aggregate earnings growth or not. They reported that expected future earnings growth was the fastest when current payout ratios were high and it was the slowest when payout ratios were low. According to Miller and Modigliani (1961) dividend irrelevance theory could predict increase in future growth and future yield growth could cause reduction in dividend payout ratio. When there is a decrease in the dividend payout ratio of a firm, not only the accumulated earning increases, but also it would create profitable investment

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opportunities for the enterprise, which engenders increase in profit growth rate in future. Dividend payout ratio plays a significant role in determining the value and assessing shareholders' equity of the firm. However, it appears that a stable dividend payout over time has a positive relationship with future earnings growth. In this paper, we examine the relevance between dividends payouts ratio and future earnings growth Tehran Stock Exchange (TSE) listed companies because of the high importance of it. Furthermore, we identify the factors, which influence on dividend payout ratio and could help managers in making a proper dividend policy. In addition, setting dividends in a sustainable way over years may influence on stock price, future profit growth of the company and investors appraisal of shareholder's equity. That is why investigating the factors that influence dividend payout ratio is of high importance, so in this research we investigate the factors influencing dividend payout ratio in Tehran Stock Exchange (TSE).

2. Literature review

Lintner (1956) is believed to be the first who investigated about dividend policy. His research demonstrated that both investment opportunities and size of a firm had a reverse relationship with earning distribution for companies in Switzerland. Jaggi and Gul (1999) investigated the relationship among investment opportunities, debts and dividend policy in Korean companies. They reported that investment opportunities had a diverse relationship with the amount of debt and dividend policy. The results also indicated that there was a significantly positive association between free cash flow and debt for firms with low investment opportunity. Adam and Goyal (2008) conducted a research in order to investigate the relationship among free cash flows, dividend and excess investment and their results showed a high direct relation among variables.

Brav et al. (2005) performed an investigation to determine the factors influencing on dividend policy. The results indicated that having sustainable earning over time and disclosing information to shareholders were two factors influenced on dividend while investment opportunities, outdoor financing expenditure and systematic risk did not have any significant influence on dividend policy. Truong and Heaney (2007) examined the impact of high profitability and limited investment opportunity on dividend policy and found that it was more likely to pay dividends when profitability is high and investment opportunities are limited. Denis and Osobov (2008) investigated the effect of size, life cycle, profitability, investment opportunity and agency problem on dividend payout ratio by running logit regression. Their finding showed that firm size, life cycle, profitability, agency contraction and growth opportunity influenced on dividend payout ratio.

Chay and Suh (2009) conducted a research by employing Logit regression in order to investigate the factors influencing dividend. They mostly emphasized on cash flow uncertainty and introduced it as the most factors influencing on dividend policy. They asserted that the effect of cash flow uncertainty on dividends was generally stronger than the effect of other potential determinants of payout policy such as the earned/contributed capital mix, agency conflicts and investment opportunities. They reported that cash flow uncertainty, life cycle, investment opportunity and agency conflicts had a direct relationship with dividends. This result was also supported with DeAngelo et al. (2006) who found that life cycle and investment opportunities were the two factors influencing on dividend policy. Thanatawee (2011) examined the dividend policy of Thai listed firms over the period 2002-2008. He reported that larger and more profitable firms with higher free cash flows and retained earnings to equity tend to pay higher dividends. In addition, the evidence indicated that firms with higher growth opportunities tend to pay lower dividend payout ratio but higher dividend yield.

Malik et al. (2013) examined the determinants of dividend policy of firms and found that liquidity, leverage, earning per share, and size were positively associated with dividend, whereas growth and profitability were reported to be insignificant determinant of dividend policy. The results revealed that earning per share, company profitability, and size increase the probability of companies to pay dividend, whereas growth opportunities could decrease the probability of paying dividends.

Talaneh (2004) conducted a research not only to study about dividend policy, but also to investigate the influential factors in dividends and its impact on stock prices in Tehran Stock Exchange (TSE). They reported that if the return on stock price in the current year were high, the tendency to pay dividends would be less.

Jahankhani and Gorbani (2005) studied the relationship among profit growth, cash yield, firm size, investment opportunity, financial structure, risk, financial leverage and cash dividend. They found that if a company had a high (low) profit growth, its cash yield would be high (low) as well. Size, investment opportunities, financial structure, risk and financial leverage are the other factors, which can explain the dividend policy of TSE listed companies. Mehtari (2006) performed an investigation to find out the association between operating cash flow and dividend changes over TSE. Despite the importance of operating cash flow in evaluating dividend policy, they did not find any significant relation between these two variables. Pour Heidari and khaksari (2008) reported in a study that cash position was the most determinant factor in dividend policy of TSE listed companies. They also stated that sustainable profitability of a company, degree of financial leverage had no important role in determining the dividend policy of the company. Moreover, they reported that there was a significant and positive relationship between profitable investment opportunity and profit distribution.

Fama and French (2002) conducted a leading study in U.S firms between 1926 and 1999. They observed that the proportion of firms paying dividend declines dramatically after 1978. The results showed that small firms with low profitability and high investment opportunities never distributed their earnings. Hashemi and Raseeeyan (2009) studied the impact of differences between proposal of buying and proposal of selling stock, corporate governance criteria, firm size, profitability, and growth opportunity as independent variables and dividend policy as dependent variable over TSE. The results indicated that there was no significant relationship between dividend policy and the differences among sales price of stock, the quality of corporate governance, firm size and growth opportunity. Nonetheless, it shows a significant and positive relation between profitability and dividend policy.

2. The proposed study

2.1 Pattern Analysis

This research is a correlation type and uses regression function in order to analyze the data. Thus, we first used F-Limer test in order to diagnose the combined or fusion date method. The null hypothesis of this test is based on the implementation of fusion data method and the alternative hypothesis emphasizes on using combined (panel) data method. Then, another test was handled in order to diagnose the fixed or random effect of time using Hausman test. The null hypothesis of this test is based on random effect of time method and the alternative hypothesis emphasizes on the fixed effect of time method. In this research, audited financial statement and notes issued by TSE were used as a research tool. In addition, RahavardeNovin and Tadbirpardaz software packages were applied to extract the research data. In addition, we used Eviews software to statistically test research data.

2.2 Statistical population and sample size

All companies listed in Tehran Stock Exchange (TSE) constitute the statistical society of the present study and removal method (semi-judgmental method) has been used for selecting the sample. Therefore, the companies belong to the sample involves all the companies of statistical society of this research, which have the following characteristics:

1. Companies which had been accepted in TSE before the year 2005,

2. Their financial statements are available for the period 2005-2010,
3. They do not have any trading halt during the period 2005-2010,
4. In order to heighten comparability and be able to increase contrast and matching properties, we selected the companies whose fiscal year end on 29 March.
5. Investment and brokerage companies were eliminated, for lack of transparency between their operating and financing activities.

According to the above conditions, 102 companies and 612 observations for each variable in the period of the study are selected to test the hypotheses.

2.3 Research Hypothesis

Since the aim of the research is to evaluate the impact of free cash flow and profitability current ratio on dividend payout ratio, therefore research hypotheses are stated as follows:

Hypothesis 1: There is a significant relationship between dividend payout ratio and free cash flow.

Hypothesis 2: There is a positive and significant relationship between dividend payout ratio and firm size.

Hypothesis 3: There is a significant relationship between dividend payout ratio and growth opportunity.

Hypothesis 4: There is a significant relationship between dividend payout ratio and leverage ratio.

Hypothesis 5: There is a negative and significant relationship between dividend payout ratio and systematic risk.

Hypothesis 6: There is a significant relationship between dividend payout ratio and profitability current ratio.

2.4 Variables

In this study, leverage ratio (LEV_{it}), free cash flow (FCF_{it}), growth opportunity ($GROW_{it}$), systematic risk ($BETA_{it}$) profitability current ratio ($PROF_{it}$) and firm size ($SIZE_{it}$) are used as independent variables and dividend payout ratio (DIV_{it}) is the dependent variable.

How to calculate each of the variables is presented in Table 1:

Table 1

Definition of variables

Variables	Symbol	Methods of calculation
Leverage ratio	LEV	Book value of total liabilities to total assets.
Free cash flow	FCF	(net profit minus changes in fixed assets minus changes in net capital) to total assets
Growth opportunity	GROW	Sales to growth rate of revenues
Systematic risk	BETA	covariance of a stock's return and market returns divided by variance of market return
Current ratio of profitability	PROF	(Net profit to shareholders equity)×100
Firm size	SIZE	According to Fama and French (2002), it equals to natural logarithm of market value of shareholders' equity.
Dividend payout ratio	DIV	(Profit distributed to net profit)×100

Generally, panel data method is used in researches for different reasons such as increase in observations quantity and the degree of freedom on one hand and decreasing heteroskedastic and colinearity on the other hand and F-Limer was used to verify this. Hypotheses are as follow:

H_0 : intercept parameters are equal in all segments

H_1 : intercept parameters are not equal in all segments

Test statistic is defined as below by the use of RRSS (restricted residual sum of squares) resulted from OLS and URSS (unrestricted residual sum of squares) result from regression:

$$F = \frac{\frac{RRSS - URSS}{N - 1}}{\frac{URSS}{NT - N - K}} \approx F_{(N-1, NT-N-K)}$$

In F test, H_0 hypothesis, equality of intercepts (pooling data method) is against H_1 hypothesis, non-equality of intercepts (paneling data method). So if H_0 is rejected, paneling data method is accepted. F Limer test results for observation are presented below:

$$F = \frac{\frac{1480.960 - 371.1056}{102 - 1}}{\frac{371.1056}{102 \times 6 - 102 - 8}} \approx 14.865$$

Comparing statistic amounts resulted from F Limer test with the amounts from Table 2 ($F_{101,502}$, $0.05 = 0.0765$) we can conclude that H_1 is accepted. In other words, panel data method is the proper manner for testing the research hypothesis. Then Hausman test was handled in order to diagnose the fixed or random effect of time. The null hypothesis of this test is based on random effect of time method and the alternative hypothesis emphasizes on the fixed effect of time method. According to the significant level which computed as 0.000 for Hausman test, the null hypothesis which is random effect of time method is rejected. In other words, we put more emphasis on the fixed effect of time method.

2.5 Research hypothesis

There is a positive and significant relation between dividend payouts and future earnings growth for companies listed in Tehran stock exchange. The hypothesis testing results are presented in Table 2.

Table 2

Hypothesis analysis result

Ln $DIV_{it} = \alpha_0 + \beta_1 FCF_{it} + \beta_2 SIZE_{it} + \beta_3 GROW_{it} + \beta_4 LEV_{it} + \beta_5 BETA_{it} + \beta_6 PROF_{it} + \varepsilon_0$			
Variables	T-statistics	coefficient	Probability
Constant	0.5499	0.5931	0.0332
Free cash flow	-3.5388	-1.3973	0.0004
Firm size	-0.6696	-0.0572	0.5035
Growth opportunity	0.2194	0.00004	0.8264
Leverage ratio	1.6671	0.0082	0.0942
Systematic risk	-0.2335	-0.0084	0.8155
Current profitability ratio	-3.5785	-0.0069	0.0004
Durbin-Watson: 2.013	Adjusted $R^2 = \%69.43$		$R^2 = \%75.68$
Probability = 0.0000	F-statistic = 12.111		

As presented in Table 2, 75.68% of future earnings growth change is adjusted by independent variable and adjusted coefficient of determination is 69.43% considering population and sample size. The effect of fixed amount on dividend payout, 0.5931, is positive and significant at 5% level of error. The effect of independent free cash flow variable on dividend payout is -1.3973 and significant. In other words, free cash flow has significant relationship with dividend payout ratio. According to the results of Table 2 and analysis of firm's size and companies' growth opportunities did not have any relationship with dividend payout ratio. Leverage ratio is positive and significant at 10% level of

error but systematic risk is irrelevant with dividend payout. Current ratio has negative and significant relationship with dividend payout ratio. Durbin-Watson is 2.013, which means there is no significant correlation between error details and they are independent. F Limer test is equal to 12.111 in regression model that is in accordance with significance level in the Table (0.0000), it was observed that generally regression is significant. Comparing the real and estimate model are shown in Fig. 1 as follows,

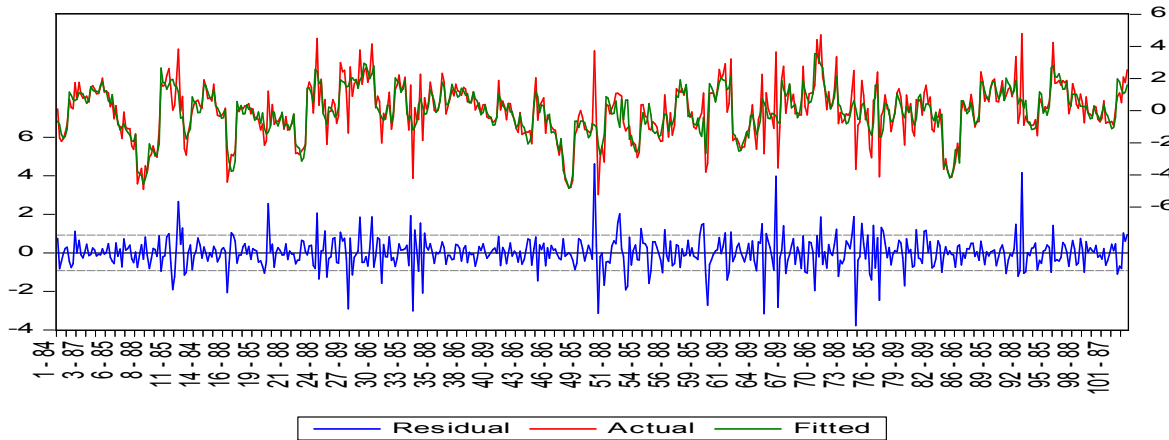


Fig. 1. Comparing the results of forecasted versus actual

Results of Fig. 1 indicate that the model has a high level of explanatory ability. Another important issue is examine the normality of residuals and as we can see in Fig. 2, the distribution is a normal distribution of errors in the model

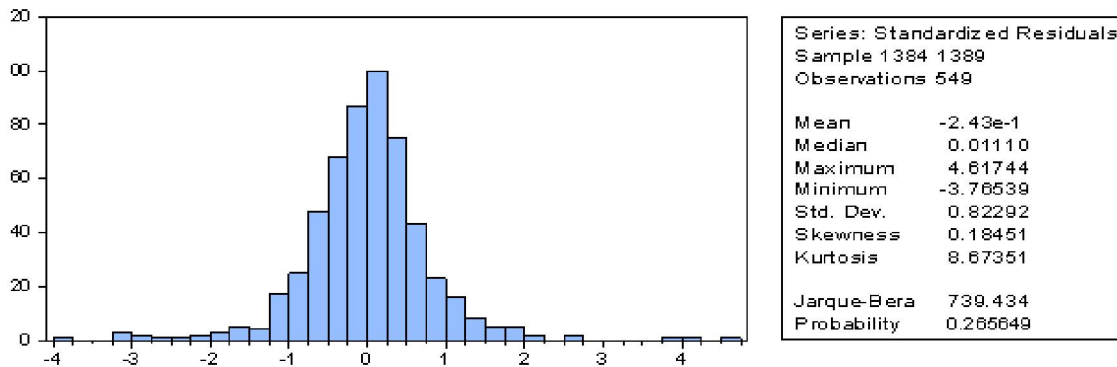


Fig. 2. The distribution of residuals

3. Conclusion

Decision making about dividend payout is one of the most important decisions to make in today's economy. Companies' dividend payouts during the time and with a stable manner influence on share price, future earnings growth and finally investors evaluation about owners' equity. Therefore, in this paper, the factors affecting the dividend were discussed. The multivariate regression (Panel Data) has been used for hypothesis assessment with emphasis on time fixed effects. Empirical results over the period 2005-2010 on 102 companies have shown that there was a negative and significant relationship between free cash flow independent variables and current profitability ratio. While relationship between leverage ratio independent variable and current profitability ratio was positive and significant. Other independent variables such as firm size, firm growth opportunities and systemic risk did not have significant effect on current profitability ratio. The results about firm growth investment opportunities is different from the Jaggi and Gul (1999), Lintner, J., (1956), De Angelo (2006), Denis and Osobov (2008). Our results shows firm growth opportunities did not have

any relationship with current profitability ratio. Results about current profitability ratio in this research are in some sense consistent with Denis and Osobov (2008), in other words, current profitability ratio is one of the important factors on dividend payout. (Current profitability ratio has negative and significant relation with stock price). About systemic risk, the results are the same as the findings presented by Brav et al. (2005) and is different with Lintner (1956), Denis and Osobov (2008). Hence, systemic risk did not have any significant relationship with dividend payout. Finally, we reported that free cash flow had significant and direct relationship with dividend payout and the result was consistent with Adam and Goyal (2000).

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