



The relationship between the life cycle of the company and free cash flow and dividend policies of listed companies in Tehran Stock Exchange

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Abstract: Dividend is an important issue that has long been of interest for financing researchers. Dividend policy could affect directly on shareholders expectations, free cash flow, method of financing, financial structure, and activity continuity of the firm. Cash management and investment opportunities, due to the life cycle, are the information tools that are considered by managers and investors and are extremely important in maximizing shareholders' wealth, raising the incentive to invest and the internal financing. Free cash flow is essential for the growth of the firms. Firms that are in the growth phase and encounter with investment opportunities frequently, by spending the free cash flow and lack of dividends, can provide the required capital for the investment. Therefore, dividend policy of the firms is affected by the life cycle and free cash flow of the firms. This study examined the relationship between the companies' life cycle and the free cash flow and their dividend policies. For this purpose, a sample of 120 companies listed in Tehran Stock Exchange for the 5-year period of 2008 to 2011 is discussed. To verify the hypotheses, a multivariate regression model is used. Hypotheses test results indicate that there is a significant relationship between the life cycle of the companies and their dividend policies. There is also a significant relationship between the companies' free cash flow and dividend policies.

Keywords: Life cycle of the company, Free cash flow, Dividend

INTRODUCTION

Free cash flow is a criterion to measure the companies' performance, and it shows the cash that the company has after the needed expenditures for maintenance or development of assets. By increasing the resources that are available for the management, the beneficiaries and related people to the company increases. Consequence of this situation is the occurrence of interest's conflicts. As a result of conflicts of interest, the beneficiaries to align the interests of others with that of themselves or to minimize the effects resulted from interest's conflicts should endure representing costs.

Companies with higher amount of dividends among shareholders, have less free cash flow. Also, companies with lower dividends, have increased free cash flow. It is expected that high cash flow leads to increased representing cost as

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well as increased audit scope. An increase in audit scope will lead to audit fees increasing.

The decision to pay dividends is a major decision that the company is facing. Company's policy regard to the dividend is an effective factor on the company's value. Dividend is known to have adhesion properties; companies that increase their dividends if there are growth opportunities, usually encounter with a sharp reduction in their value. Thus, managers tend to avoid paying high interest, unless they are sure about their ability to maintain high levels of dividends. Poll studies of ^{1,2} also found that managers consider stability in earnings achievement as the most important factor in the dividends decisions. In fact, the basis for the payment of dividends is earnings achievement regularly. A company that fails to regularly make profits, certainly, cannot have regular dividend policy.

The payment of dividend is subject to having enough cash. Mismatch between the liquidity and dividend means the firm's challenging. In fact, the companies distribute dividends when they have sufficient cash flow to distribute the dividend. Similarly, the dividend payment will result in the withdrawal of resources of the company. If only shareholders' requests are considered and high dividends are paid, the company may not participate in the opportunities that are ahead. Indeed, firms that are faced with lots of investment opportunities need more cash. Therefore, they may pay lower dividends.

Dividend shows managers expectations about future earnings of the corporate. Managers are the corporate's internal individuals that present specific information about their expectations of the company future income to the investors. This issue is introduced by signaling theory. The company's profitability is used as a criterion to measure the activity continuity and to predict the future activities of the firm ³.

RESEARCH LITERATURE

Haghighat & Ghorbani in their study examined the relationship between earnings and cash flows and the firm value in the framework of corporate life cycle. The research findings suggest that in the growth and decline phases the relationship between the cash flow and firm value is stronger than the relationship between earnings and firm value and at maturity phase, the opposite is true⁴.

Rekabdar in his study has investigated the relationship between free cash flow and dividend policy of the companies on Tehran Stock Exchange. The results showed that there is a significant positive relationship between free cash flow and dividend changes both in large companies and in companies with low investment opportunities⁵.

Aharoni et al compared the explanatory power of measures based on free cash flow and measures based on accruals at different stages of the life cycle. The results indicate that in the growth stage, the explanatory power of measures based on free cash flow in relation to the company's value is higher. In maturity

and decline stages, the explanatory power of measures based on accruals is higher⁶.

Wang et al on a study entitled dividend policy and the life cycle theory evaluated the dividend policy and the life cycle. Results showed that paying dividends in younger firms with high growth potential but low profitability, leads to earnings distribution as dividends to the cash income. When firms become more mature, low growth potential and high profitability result in further distribution of the cash income versus dividend⁷.

Thanatawee on a study investigated free cash flow hypothesis and the life cycle theory in Thailand. In this study in order to test the hypothesis of free cash flow, Thanatawee used the cash flow obtained from operating activities after deduction of investment funds. He also used the ratio of cumulative earnings to the book value of equity to test life cycle theory. The research results showed that there is a significant positive relationship between free cash flow, life cycle stages and dividend policy³.

MATERIAL AND METHODS

The research is a correlational research. Correlational research is applied when the researcher has two or more different kinds of information (in the form of independent variables) related to a group of two or more groups and the research goal is to study the variations rate of two or more factors because of the variations in one or more other factors. Regression analysis is a kind of correlational research that will be used in this research.

On the other hand, as this research seeks to achieve a scientific goal and presents useful information about the extant facts, it is an applied research in terms of the nature.

The study is cross sectional because it examines data related to a period of time (from 2008 until 2012).

To determine the research sample, companies with the following characteristics are considered:

1. Their fiscal year is ended at March of each year.
2. The company has no fiscal year change from 2008 to 2012.
3. Company is not in financial intermediaries (Banks, investments and..).
4. Their financial reports are available.

In order to answer the research questions and based on the available theoretical background, the following hypotheses were formulated:

Research hypothesis:

First hypothesis: There is a significant relationship between the companies' life cycle and their dividend policies.

Second hypothesis: There is a significant relationship between the companies' free cash flow and their dividend policies.

The research model:

The model used in this study, which is to test the hypotheses derived from Thanatawee's research (2011) is as follows:

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$$\text{DIVPAY}_{i,t} = \beta_0 + \beta_1 \text{RE / TE} + \beta_2 \text{FCF} + \beta_3 \text{ROA} + \beta_4 \text{SIZE} + \beta_5 \text{AGR} + \beta_6 \text{MTB} + \beta_7 \text{LEV} + \varepsilon_{i,t}$$

DIVPAY: equals to the earnings paid to shareholders (dividends per share (DPS))

RE / TE: equals to the ratio of retained earnings to book value of equity (to measure the company's life cycle)

FCF: Free Cash Flow after deducting the ordinary and preferred dividends, income taxes and interest expense and can be achieved from operating earnings plus depreciation expense.

ROA: Return on Assets

SIZE: The Size of Firms that is equal to the natural logarithm of total assets.

AGR: equals to Asset Growth that is equal to the increase percentage in assets.

MTB: equals to the ratio of Market value of equity to Book value of equity.

LEV: Leverage of the Firm, which equals to the ratio of total debt to total assets.

Independent Variables: In this study Lifecycle of the company and Free Cash Flow are independent variables.

Dependent variable: Dividend Policy

The control variables : Return on assets, Firm size, Asset Growth, Market value to book value of Equity, Financial Leverage

RESULTS

The information of this section introduces features of the study variables among the sample firms. Descriptive statistics of the variables are shown in Table 1.

Table 1. Descriptive statistics

	DISPA Y	RE/TE	FCF	ROA	SIZE	AGR	MTB	LEV
Mean	.0906	.3512	412306.805	.1076	13.240	14.4908	.0479	.0479
Standard Deviation	.09004	.8588	1582044.019	.1016	2.5155	29.2541	1.4402	1.4402
Skewness	1.520	-4.652	7.463	1.100	2.924	2.548	-10.029	-10.029
Elongatio n	2.790	65.23	62.404	1.998	51.085	14.868	187.25	187.25
Maximum	.00	-10.10	-70886.00	-.12	-3.24	-89.69	-23.05	-23.05
Minimum	.55	5.36	16936316.0	.62	44.40	216.84	13.65	13.65

As can be seen in the table of descriptive statistics, the mean of the dependent variable of dividend per share is obtained equals to 0.09. The review of the independent variables of the company's life cycle and the free cash flow showed that their means are respectively, equal to 0.351 and 412306.805.

Results review of the coefficients skewness of the research variables show that variables of the company's life cycle associated with variables of equity market ratio to the book value of equity and financial leverage have negative skewness coefficient. This shows that the distribution of data in these variables relative to the normal curve is skew to the left. However, given that the other variables have positive skewness, the data distribution is skew to the right. The

elongation coefficient of research variables indicate that all variables are positive elongation, which are longer than the normal curve.

Evaluation of hypotheses

Table 2: Test results of research hypotheses

Variable	Regression coefficient	Standard deviation	T statistics	Significance level
Intercept	0.088773	0.002372	37.42401	0.0000
Lifecycle of the company	0.005740	0.002867	2.002261	0.0459
Free cash flow	0.039753	0.008868	4.482797	0.0000
Determination coefficient	0.776	F statistics	(0.000)(11.397)	
Adjusted determination coefficient	0.708	Durbin-Watson	1.713	

After determining the appropriate method to estimate the parameters, the results of the studied companies' estimation model are investigated. The results of the first hypothesis of the study are presented in table 2. Evaluation of the determination coefficient of research main model suggests that the model variables, that is to say, the life cycle of the company associated with free cash flow have explained 0.776 of the dependent variable changes, the dividend policy of listed companies in Tehran Stock Exchange. This means that 77.6% of the changes of the companies' dividend policy are justified by the fitted model. Other changes relate to the parameters out of the model (22.4 percent).

The significance results of fitted regression model show that the significance level of the F statistic (11.397) is smaller than 1% and significant (sig <0.01). Hence, with more than 99 percent confidence level, H₀ hypothesis is rejected and H₁ hypothesis is accepted. That is to say, there is a significant relationship between the life cycle of the company and free cash flow and dividend policies of listed companies in Tehran Stock Exchange.

However, in order to test the regression coefficients, if the absolute value of the calculated t is larger than table t, the null hypothesis is rejected and the coefficient would be significant and otherwise the null hypothesis cannot be rejected. Also, significance level represents the approval minimum possibility of null hypothesis based upon the desired coefficient is zero. If this probability is greater than 5%, the null hypothesis cannot be ruled out. Otherwise, the desired coefficient is significant.

The results review of the research main model regression coefficients show that regression coefficients of free cash flow variable (0.039) and the company's life cycle (0.005) respectively, at 1 and 5 percent error level have a significant effect on dividend policy of the companies. Therefore, with more than 95 percent confidence level, H₀ hypothesis is rejected and H₁ hypothesis is accepted. These results means that the more free cash flow and the life cycle of the company increase, the more increases the company's dividend policy significantly. In general, the results show that the company's dividend policy will increase in lieu

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of per unit change in variables of free cash flow and the company's life cycle, respectively 0.039 and 0.005 unit.

Hypotheses with control variables

Table 3: test results of research hypotheses with the control variables

Variable	Regression coefficient	Standard deviation	T statistics	Significance level
Intercept	0.035450	0.009814	3.612060	0.0003
Lifecycle of the company	0.000127	0.001597	0.079688	0.9365
Free cash flow	0.012128	0.004986	2.432380	0.0155
Return on assets	0.688238	0.023362	29.45953	0.0000
Firm size	-0.001361	0.000692	-1.967964	0.0498
Asset growth	0.004771	0.001774	2.689743	0.0075
The ratio of equity market to book value of equity	0.001038	0.001345	0.771634	0.4408
Financial leverage	-0.000883	0.001227	-0.719629	0.4722
Determination coefficient	0.933	F statistics	(0.000)(43.119)	
Adjusted determination coefficient	0.911	Durbin-Watson	2.401	

As can be seen, the results of the research main hypothesis associated with the control variables are presented in Table 3. The study of the fitted model determination coefficient indicates that the company's dividend policies are explained by the main variables of the research associated with control variables (return on assets, firm size, asset growth, the ratio of market equity to book value and financial leverage) 0.933. This means that the model variables have explained 93.3% of the variability of the dependent variable, that is to say, the company's dividend policy and other changes are affected by factors outside the model (6.7 percent).

The study of the significance of fitted regression model shows that the significance level of the F statistic (43.119) is smaller than 1% and significant ($\text{sig} < 0.01$). Hence, with more than 99 percent confidence level, H_0 hypothesis is rejected and H_1 hypothesis is accepted. That is to say, there is a significant relationship between the life cycle of the company and free cash flow associated with the control variables and dividend policies of listed companies in Tehran Stock Exchange.

The results of the regression coefficients of fitted model variables show that differential coefficient of returns on assets (0.688) has the greatest effect on the dependent variable, so that, at error level of 1%, it has a significant effect on the dependent variable of the companies' dividend policies. In addition, the regression coefficients of asset growth variable (0.004) and free cash flow variable (0.012) at error level of 5% have a positive impact on the dependent variable. While the size of the company (-0.001) has a significant and negative impact. Hence, with more than 95 percent confidence level, H_0 hypothesis is rejected and H_1 hypothesis is accepted. With regard to the obtained results it can be stated that the more asset returns, asset growth, and free cash flow increase,

the more increases the company's dividend policy. But it will be reduced as affected by the firm size.

The notable point in fitted model is the lack of a significant effect of the company's life cycle variable, because the main model has a significant effect on the dependent variable while entering the control variables to the model has reduced its effect on the dependent variable. Also, other investigation of the model variables coefficients shows that the regression coefficient of the variables of market equity ratio to book value have a positive impact and financial leverage have a negative impact on the dependent variable. But it must be pointed out that the significance level of the mentioned variables is greater than 5% and they are not significant.

DISCUSSION

This study examined the relationship between the companies' life cycle and the free cash flow and the dividend policies of listed companies in Tehran Stock Exchange .

The results indicate that, the more free cash flow and the life cycle of the company increase, the more increases the company's dividend policy significantly. In general, the results show that the company's dividend policy will increase in lieu of per unit change in variables of free cash flow and the company's life cycle, respectively 0.039 and 0.005 unit.

The results of the research hypotheses associated with the control variables shows that differential coefficient of returns on assets (0.688) has the greatest effect on the dependent variable, so that, at error level of 1%, it has a significant effect on the dependent variable of the companies' dividend policies. In addition, the regression coefficients of asset growth variable (0.004) and free cash flow variable (0.012) at error level of 5% have a positive impact on the dependent variable. While the size of the company (-0.001) has a significant and negative impact. With regard to the obtained results it can be stated that the more asset returns, asset growth, and free cash flow increase, the more increases the company's dividend policy. But it will be reduced as affected by the firm size.

The result obtained from the hypothesis test related to the relationship between lifecycle of the companies and dividend policies is consistent with the research results of ^{3, 7, 8}, based upon "there is a positive and significant relationship between lifecycle of the company and dividend policy."

The result obtained from the hypothesis test related to the relationship between free cash flow of the companies and dividend policies is not consistent with the research results of ⁹, based upon "there is a negative and significant relationship between free cash flow of the company and dividend policy". But the research result of the hypothesis test is consistent with the research results of ^{3, 6, 10, 11}, based upon "there is a positive and significant relationship between free cash flow of the company and dividend policy."

Recommendations based on the results of the research hypotheses:

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With regard to the results of the research hypotheses, the following recommendations can be given :

1. One of the items that could be of significant importance in the decision making of managers is the related decisions of dividend policy. In addition, achieving long-term goals and satisfying shareholders, requires accurate decisions by the management and allocation of revenues in the form of dividends and retained earnings. Therefore, it is recommended that managers and stakeholders in their decisions on the dividend policy consider these factors.
2. One of the most important factors that investors should consider when determining the value of shares is cash flows arising from investing. Dividend is one of the cash flows that are obtained from investing in stocks and its value is determined based on dividend policy. Therefore, it is recommended that investors considering these factors, particularly the company's liquidity position, assess and analyze the status and policy dividend and chose their desired companies to invest.

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