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Review Article

REVIEW OF THE RELATIONSHIP BETWEEN ASSET GROWTH RATE AND DIVIDEND POLICY AT EACH OF THE STAGES OF LIFE CYCLE ON TEHRAN STOCK EXCHANGE- LISTED COMPANIES

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ABSTRACT
The main objective of this study is to identify the asset growth rate on dividend policy and life cycle hypothesis test in companies accepted in Tehran Stock Exchange. Three factors were studied in this research; these variables include asset growth rate as independent variables, and the rate of return on equities as well as the ratio of market value to the office value of shares are as control variables. The studied society has been separated to companies at the stage of growth, maturity and decline using Anthony and Ramesh category method by sales growth variables, the ratio of dividend and capital expenditure; then tested using multivariate regression equations of research hypotheses. This research consists of 643 companies during the years 2002 to 2011. The results of the research state that in the case of the asset growth rate variable, no significant relationship is available between the variable and dividend policy at the stages of growth and decline, but the relationship between this variable with the dividend policy is significant and reverse at the stage of maturity.

Keywords: *Dividend Policy, Asset Growth Rate, Profitability*

INTRODUCTION
The dividend policy subject has been always as one of the most controversial topics of discussed sciences so that it has drawn the interest of economists of the present century and over the last five decades to itself. Successful companies usually enjoy high profitability. Profits earned by companies can be invested in operational assets, and used in order to get new securities, to repay debts or to distribute among shareholders. Therefore, the company management should consider different variables before deciding on how to pay the dividend. Also, actual and potential users of financial information are willing to be informed of the asset growth rate, the ability to create liquidity and sometimes its distribution among company shareholders because this information not only presents a clear picture of the present status of the company but also makes it possible to evaluate and estimate its future status which undoubtedly, is important in their decision-making process.
The importance of this issue is serious to managers of companies for the use of information gathered in the process of administration of companies and the market assessment of their performance. Hence, a part of ability and attention of companies' managers is focused on a category learning it as the dividend policy. On the one hand, according to the theory of life cycle of business units, companies have special behavior at different stages of their life cycle from the financial and economic viewpoint. This means that financial and economic characteristics of the business units are affected by the company's life cycle stage; therefore, it seems company's features are different at each of the life cycle stages. According to Walter and Gordon, companies are divided into three mature, stagnant and growing categories based on the life cycle. Growing companies with accumulated profits, increase stock prices; mature institutions have no right opportunity and their dividend policy does not affect the stock price although the fixed ratio of their dividend results in reducing the risk; and stagnant institutions are forced to divide profits and have high risks in themselves. The identification of factors affecting the dividend has been the research subject of many researchers; on the one hand, there are still many unknown angles in this field that make it necessary to do research in this field. In this study, the asset growth rate is tested as one of the factors

influencing the dividend at different stages of the life cycle of companies so as to answer this question whether companies with their different asset growth rates show different reactions to the dividend policy at different stages of the life cycle.

Research Background

The first research has been carried out by Anthony and Ramesh (1992) on the life cycle of companies in the field of accounting. In their research after classifying companies to growth, maturity and decline stages, they considered the relationship between performance criteria, such as sales growth and capital expenditure with the stock price in the market.

(Amidu and Abor, 2006) conducted research entitled "Determinants of Dividend Payout Ratios in Ghana". The most important variables in this study were diagnosed as profitability, liquidity and growth opportunities.

(Chay and Suh, 2009) in the research entitled "Payout Policy and Cash-Flow Uncertainty" considered the relationship of the dividend ratio with liquidity uncertainty, the ratio of accumulated profit to equities, representation conflict and growth opportunities.

Black (1998) examined the relationship between profit and cash flows and the company value at different stages of the life cycle of trade units and reached this result that at birth and decline stages, cash flows are more related to profit, and at the maturity stage, it is vice versa.

(Jenkins *et al.*, 2004) reviewed the impact of the corporate life cycle associated with the value of profit components. They assumed that the trade units would adopt different strategic measures at the different stages of the life cycle.

(Hashemi and Rasaeian, 2009) examined the relationship between the proposed price difference of buying and selling stocks, growth opportunities, company governance standards and the size of company with the dividend policy .

MATERIALS AND METHODS

The present research based on purpose is a type of applied research and in terms of method and nature is a correlation type. Data collection is achieved by using Rahavard Novin software, referring to the Tehran Stock Exchange organization site, and studying basic financial statements of the TSE-listed companies during the years 2002-2011.

Then Excel spreadsheet software was applied to classify information and calculate the variables, and finally the obtained data was analyzed using SPSS software. In order to perform statistical tests, Pearson and regression correlation coefficient and variance analysis which have less criteria error in comparison with other statistical methods have been used. The studied society of the present research includes existing companies on the Tehran Stock Exchange during the years 2002-2011.

Then, according to the category procedure of (Anthony and Ramesh, 1992) from three indicators of sales growth, the ratio of the dividend and capital expenditure, the three stages of growth, maturity and decline can be used to classify companies. Among the initial society, companies that are not placed within the framework of the life cycle model are removed, and the rest make up the research society.

Research Analytical Model

In this study, in order to identify factors affecting the dividend policy at each of the stages of the life cycle of companies, the following Multivariate regression model (adapted from Ming Hugh Wang's article in 2011) is used:

$$y_{it} = \alpha + \beta_1(\Delta TA/TA)_{it} + \beta_2(RoE)_{it} + \beta_3(MTB)_{it} + \varepsilon_{it}$$

In this model, y_{it} is the corporate dividend policy, $(\Delta TA/TA)_{it}$ the asset growth rate, $(RoE)_{it}$ the return rate of equities and $(MTB)_{it}$ the ratio of market value to the office value of the company's stock i in the course of t.

Types of Variables and their Measuring Method
Dependent Variable

y_{it} is the company's dividend policy i in the course of t that the dividend ratio per share to earnings per share is used for its measurement.
Equation (1):

$$y_{it} = \frac{DPS}{EPS}$$

DPS = dividend per share
EPS = earnings per share

Independent Variable

$(\frac{\Delta TA}{TA})_{it}$ -1 is the change percentage in total company assets i in the course of t expressing the asset growth rate.
Equation (4):$(\frac{\Delta TA}{TA})_{it}=\frac{TA_t - TA_{t-1}}{TA_t}$

TA_t = total company assets in year *t*

TA_{t-1} = total company assets in year *t-1*

The Moderator Variables

RoE_{it} -1 is the return rate of equities of company i in the course of t
Equation (5):

$$(RoE)_{it} = \frac{Net\ profit\ after\ tax\ deduction}{\text{equities of company}}$$

$(MTB)_{it}$ -2 is the ratio of the market value to the office value of the company's stock i in the course of t.
Equation (6):

$$MTB = \frac{the\ company\ 's\ stock\ market\ value}{\text{the company 's stock office value}}$$

Research Hypotheses
Main Hypothesis

There is a relationship between the company's total asset growth rate and dividend policy.

Secondary Hypotheses

1. There is a relationship between the company's total asset growth rate and dividend policy at the growth stage.
2. There is a relationship between the company's total asset growth rate and dividend policy at the maturity stage.
3. There is a relationship between the company's total asset growth rate and dividend policy at the decline stage.

RESULTS AND DISCUSSION

Table 1: Descriptive statistics of variables in the growth period

Variable	Y	TAT	ROE	MTB
Number of observations	198	198	198	198
Average	0/341	0/152	0/592	3/480
Standard deviation	0/307	0/227	1/755	3/952
Minimum	0/00	-0/32	-6/63	-2/84
Maximum	0/99	2/02	12/46	28/98

At the beginning and before the test of hypotheses, descriptive statistics of studied variables are calculated and shown in the tables.

Table 2: Descriptive statistics of variables in the maturity period

Variable	Y	TAT	ROE	MTB
Number of observations	251	251	251	251
Average	0/664	0/121	1/471	3/109
Standard deviation	0/306	0/262	8/783	12/150
Minimum	0/00	-1/48	-8/06	-15/32
Maximum	0/99	1/34	95/55	58/83

Table 3: Descriptive statistics of variables in the decline period

Variable	Y	TAT	ROE	MTB
Number of observations	194	194	194	194
Average	0/328	0/083	1/407	2/925
Standard deviation	0/303	0/298	9/066	3/781
Minimum	0/00	-2/46	-17/78	-4/20
Maximum	0/98	0/72	136/13	28/32

Normal Data Test

To review normal variables, Kolmogorov–Smirnov test is used. Given that the probability value related to this test is larger than 0.05 in the following tables, the dependent normal variables can be confirmed with 95% confidence. Therefore, the data can be tested through a parametric test.

Table 3: Kolmogorov–Smirnov test for data in the growth period

Variables	Y	TAT	ROE	MTB
Kolmogorov–Smirnov Z	1/181	1/733	4/214	2/733
Significant level	0/082	0/005	0/00	0/00

Table 4: Kolmogorov–Smirnov test for data in the maturity period

Variables	Y	TAT	ROE	MTB
Kolmogorov–Smirnov Z	1/065	3/122	6/181	6/007
Significant level	0/112	0/000	0/00	0/00

Table 6: Kolmogorov–Smirnov test for data in the decline period

Variables	Y	TAT	ROE	MTB
Kolmogorov–Smirnov Z	1/114	2/113	5/528	2/673
Significant level	0/090	0/00	0/00	0/00

Table 7: Pearson correlation matrix in the growth period

Variable	Symbol	Y	TAT	ROE	MTB
Dividend policy	Y	1			
Significant level	Sig.				
Total asset growth rate	TAT	0/007	1		
Significant level	Sig.	0/921			
Return rate of equities	ROE	0/251*	-0/058	1	
Significant level	Sig.	0/00	0/416		
Market value to office value	MTB	0/071	0/050	0/208*	1
Significant level	Sig.	0/322	0/489	0/003	

Correlation between Variables

In this study, to determine the correlation between variables, the Pearson correlation coefficient (r) is used. Correlation matrices between quantitative variables are presented in tables (7), (8) and (9).

In accordance with table (7) and formulated hypotheses at the confidence level 99%, there is a positive and significant relationship between the variable of the return rate of equities (correlation coefficient of 0/251) and the dividend policy at the growth stage. There is also a positive and significant relationship between the market value to office value (correlation coefficient of 0/208) and the return rate of equities at the growth stage.

Table 8: Pearson correlation matrix in the maturity period

Variable	Symbol	Y	TAT	ROE	MTB
Dividend policy	Y	1			
Significant level	Sig.				
Total asset growth rate	TAT	-0/074*	1		
Significant level	Sig.	0/024			
Return rate of equities	ROE	-0/045	0/020	1	
Significant level	Sig.	0/478	0/752		
Market value to office value	MTB	0/093	0/00	0/119	1
Significant level	Sig.	0/140	0/988	0/059	

In accordance with table (8) and formulated hypotheses at the confidence level 99%, there is a negative and significant relationship between the asset growth rate (correlation coefficient of -0/074) and the dividend policy, and there is also a negative and significant relationship between the market value to office value (correlation coefficient of -0/155) and the size of company.

Table 9: Pearson correlation matrix in the decline period

Variable	Symbol	Y	TAT	ROE	MTB
Dividend policy	Y	1			
Significant level	Sig.				
Total asset growth rate	TAT	-0/024	1		
Significant level	Sig.	0/736			
Return rate of equities	ROE	-0/050	-0/025	1	
Significant level	Sig.	0/490	0/727		
Market value to office value	MTB	0/214*	0/030	-0/048	1
Significant level	Sig.	0/003	0/674	0/504	

In accordance with table (9) and formulated hypotheses at the confidence level 95%, there is a positive and significant relationship between the variable of the market value to office value (correlation coefficient of 0/214) and the dividend policy at the decline stage.

Results of Hypotheses Test

In this study, linear regression statistical technique is used to test hypotheses. Test of hypotheses of 198 observations in the growth period, 251 observations in the maturity period and 194 observations in the decline period for the years 2002 to 2011 has been done through SPSS software. The research hypothesis was tested using the combined data for three periods of growth, maturity and decline.

Results of Secondary Hypothesis Test 1

Secondary Hypothesis 1: There is a relationship between the total asset growth rate and the company's dividend policy at the growth stage.

Table 10: Results of multivariate regression between the total asset growth rate and the dividend policy at the growth stage

Variable type	Symbol	Variable name	Coefficient	Statistics t	Significant level
Independent variables	TAT	Total asset growth rate	0/021	0/295	0/768
The moderator variables	ROE	Return rate of equities	0/248*	3/485	0/001
	MTB	Market value to office value	0/018	0/255	0/799
Durbin-Watson		Durbin-Watson	1/944	-	-
F		F statistics	4/395	-	-
P-value		Significant level of F statistics	-	-	0/005
R		Correlation coefficient	0/173	-	-
R square		Determination coefficient	0/030	-	-
Adjusted R square		Adjusted determination coefficient	0/121	-	-

The overall model shape is as follows:
Y=0.306 + 0.021 TAT + 0.248 ROE + 0.018 MTB

Results of the estimation indicates that a significant level for the variable of the return rate of equities (The moderator variable) compared to the dividend policy is smaller than 5%; therefore, the estimation coefficient of the above variable is statistically significant, but a significant level of the total asset growth rate (independent variable) compared to the dividend policy is larger than 5%. As a result, there is no significant relationship between the total asset growth rate and the dividend policy at the growth stage.

Table 11: Results of multivariate regression between the total asset growth rate and the dividend policy at the maturity stage

Variable type	Symbol	Variable name	Coefficient	Statistics t	Significant level
Independent variables	TAT	Total asset growth rate	-0/095	-1/195	0/003
The moderator variables	ROE	Return rate of equities	-0/058	-0/920	0/358
	MTB	Market value to office value	0/100	1/582	0/115
Durbin-Watson		Durbin-Watson	2/091	-	-
F		F statistics	1/475	-	-
P-value		Significant level	-	-	0/008
R		Correlation coefficient	0/252	-	-
R square		Determination coefficient	0/064	-	-
Adjusted R square		Adjusted determination coefficient	0/119	-	-

The overall model shape is as follows:
Y= 0.352 - 0.095 TAT - 0.058 ROE + 0.100 MTB

The results and findings of this hypothesis are inconsistent with the results of the research of Wang *et al.*, (2011) and Beiner (2001). The low importance and attention of the major shareholders and managers to the asset growth rate indicator can be the reasons for the lack of verification of this hypothesis.

Results of Secondary Hypothesis Test 2

Secondary Hypothesis 2: There is a relationship between the total asset growth rate and the company's dividend policy at the maturity stage.

Results of the estimation indicates that a significant level for the asset growth rate variable (independent variable) compared to the dividend policy is smaller than 5%; therefore, the estimation coefficient of the above variable is statistically significant, and considering the negative coefficient of the independent variable, we conclude there is a negative and significant relationship between the asset growth rate and dividend policy at the maturity stage. The results of this hypothesis match with that of the research of Wang *et al.*, (2011), Beiner (2001) and Barkley *et al.*, (1995).

Results of Secondary Hypothesis Test 3

Secondary Hypothesis 3: There is a relationship between the total asset growth rate and the company's dividend policy at the decline stage.

Table 12: Results of multivariate regression between the total asset growth rate and the dividend policy at the decline stage

Variable type	Symbol	Variable name	Coefficient	Statistics t	Significant level
Independent variables	TAT	Total asset growth rate	-0/032	-0/450	0/653
The moderator variables	ROE	Return rate of equities	-0/040	-0/570	0/569
	MTB	Market value to office value	0/213*	3/012	0/003
Durbin-Watson		Durbin-Watson	2/073	-	_
F		F statistics	3/233	-	_
P-value		Significant level	_	-	0/023
R		Correlation coefficient	0/220	-	_
R square		Determination coefficient	0/048	-	-
Adjusted R square		Adjusted determination coefficient	0/104	-	-

The overall model shape is as follows:

Y= 0.284 - 0.032 TAT - 0.040 ROE + 0.213 MTB

Results of the estimation indicates that a significant level for the variable of the market value to the office value (The moderator variable) compared to the dividend policy is smaller than 5%; therefore, the estimation coefficient of the above variable is statistically significant, but a significant level of the total asset growth rate (independent variable) compared to the dividend policy is larger than 5%. As a result, there is no significant relationship between the total asset growth rate and the dividend policy at the decline stage. The results and findings of this hypothesis are inconsistent with the results of the research of Wang *et al.*, (2011) and Beiner (2001). It can also be said at this stage the same as the growth one, the low importance and attention of the major shareholders and managers to the asset growth rate indicator can be the reasons for the lack of verification of this hypothesis.

Overall Assessment of Results of Hypotheses Test

This study reviewed the relationship between the asset growth rate and the dividends policy at the life cycle stages. The results of the study confirmed the second hypothesis; that is there was a negative and significant relationship between the total asset growth rate and the dividend policy at the maturity stage. In addition, the results showed there was no significant relationship between the total asset growth rate and the dividend policy at the growth and decline stages in the TSE-listed companies in the years 2002 to 2011. Based on the conducted analyses, given that the first and third secondary hypotheses of this research were not confirmed, it can be concluded that the main hypothesis also could not be confirmed. In other words, there was no relationship between the asset growth rate and the dividend policy. A major reason for the rejection of the hypothesis can be due to the lack of attention of companie's major managers and shareholders to the asset growth rate confirming growth and investment opportunities. The results of this study are inconsistent with that of Beiner (2001) and Kannur (2003) and match with the research results of Hashemi and Rasaeian (2009).

Research Suggestions

Research Hypothesis-based Suggestions

Failure to confirm the main hypothesis can represent that stock general meeting distributes profits without attending to the asset growth rate in research community companies. Hence, companie's major shareholders in the company's annual general meeting that have an effective role in dividing companie's profit as well as decisions related to it is recommended to have a special attention to the indicator; in other words, one of the indicators that represents in which one of the stages of the life cycle the company is placed is the asset growth rate indicator that somehow expresses the company's growth opportunities so that major shareholders and managers with regard to the characteristics of the company can adopt more optimal decisions in policies related to the distribution of profits.

Suggestions for Future Research

- Review of the dividend policy relationship with the company value at each of the stages of companie's life cycle.
- Review of the dividend policy relationship with full disclosure of information at all the stages of companie's life cycle.
- Review of the dividend policy relationship with macroeconomic variables in the TSE-listed companies.

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