A review of interaction of Financial Leverage and Investment Opportunities on Dividend Policy

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Abstract: The aim of this paper is to discover the role and position of dividend policy in management decisions, and also to investigate the relation between financing sources and investment opportunities with dividend changes. According to the free cash flow theory, it is expected of the companies with high investment opportunities to implement anti inflationary dividend policy. The level of debt also plays an important and basic role in implementation of this policy and securing financing for investment in profitable situations. In this study, the relation between variables was tested and analysed using a sample of 184 companies in Tehran Stock Exchange with the correlation matrix, correlation coefficient and linear and multi regression methods. The results indicate an inverse significant linear relationship between financial leverage, investment opportunities and dividend policy. The reciprocity and joint relation between investment opportunities and financial leverage on determining dividend policy, is also inverse.

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Key words: Investment opportunities, financial leverage, dividend policy

1. Introduction

Any company's management pays particular attention to financing and investment decisions which are part of the financial planning process. Amongst the most important financial planning factors, we can point to investment opportunities analysis, selecting the best method of financing and determining a suitable dividend policy. Since using profitable investment opportunities requires financing resources, and to consent to and to create propensity in shareholders and investors, these resources can also be distributed as dividend. Therefore, reviewing financing and decision making about choosing cheaper resources for allocation to investment opportunities (having high net present value), or distributing them as dividend amongst shareholders, is of great importance to management. In this research, we review the relationship between these three variables, investment opportunities, financing resources and dividend policy.

2. Research background:

In 2012 Zakaria et al. conducted a research in Indonesia entitled "A review of effect of dividend policy on share price variation". The results showed that 43.43% of share price changes are explained by dividend changes, financial leverage, investment growth, company size, financial leverage and revenue (profit) changes. The ratio of dividends has a significant effect on share price changes. The larger the size of company, the higher the significant effect of dividend on share price variation. Rate of dividend, investment growth and revenue (profit) variations have significant effect on share price variations, and financial leverage has a negative effect on share prices. Kushi et al. (2002) in Japan reviewed a research topic entitled "The relation between dividend policy, cash flow and investment". Their results showed that the reaction of share prices to declaration of profit was positive, and towardsa lack of declaration of share dividend or its reduction was negative. Also, the relation of market reaction to earnings announcement with dividend changes and Tobin's Q is positive, and with market size is negative. Companies which announce high earnings for distribution, have high (earnings) mean, low debt ratio and high levels of opportunity. The findings show that companies with high cash flow are more involved in investment matters. This is compatible with the free cash flow. Graham Paul Barman conducted a research entitled "A review of effect of dividend policy on company value" for 42 South African companies over a 10 years period.

Decisions in this research are divided into three categories as follow: Investment decisions, financing decisions and decisions regarding dividend. Investment decisions determine the type and value of assets used by a company. Financing decisions determine the company's capital structure and required financing resources for investment. Decisions regarding dividend determine the method and level of cash distribution amongst shareholders. Researchers found that the effect of dividend on current value of company shares is not only important for management policy making, but also bears great significance for

planning and cognition of capital markets by investors and economists. This is due to results showing that dividend policies effect company value and value of shares in a positively significant way. In 2001, the relation between growth opportunities and financing policies of 61 companies were reviewed by *Vidhank, Kenneth Lehn & Stanko*[2]. They state that changes at companies' debt level are effected by investment opportunities, and there is an inverse relation between these two variables. So much so, that if growth opportunities are high, company debt level is low, and when company's debt increases, growth opportunities will be placed at a lower level. Finally, they announce that issued debt maturities in periods of low growth opportunities are longer than debt maturities during periods of high growth opportunities.

3-Theoretical Framework:

Definition of dividend policy

Profitability is considered one of the main evaluation standards for the profit unit management performance. Additionally, it is also the basis and evaluation standard for shares of profit units, which in the end, leads to the realisation of maximising the shareholders' wealth. The policy of distributing dividend among shareholders ensures the continuity of company activity and maximisation of shareholders' wealth, and effects shareholders' expectations, accessible cash sources, financing method, financial structure and continuity of the profit unit positively. Familiarity with methods of dividing profit and knowledge of effect of this policy on company financial situation and long and short-term activities of profit units, improves the performance and effectiveness of dividend policy. Implementing dividend policy (particularly in limited companies) depends on investment opportunities profitability, income tax, legal limitations and considerations and cash flow (M. Rashidi 2000), in that, if the cash flow is high and there is a need for less cash, i.e. there are less investment opportunities profitability, the company should increase dividend, and if it is the other way round (less cash flow in comparison with investment opportunities), the company reduces dividend (Ferdinand & Kelly 1999).

4-Definition of investment opportunities

Making decisions regarding optimum and profitable investment is a sensitive and important issue. These opportunities are considered invisible variable, which does not occur automatically, they should rather be identified, or they should be created (Hansen &Chaplinky 1993)[3] and the company can increase its value by identifying and investing in opportunities which have a higher rate of return than market. Various investment opportunities may stem from different parts of the company. Participation of senior management in providing investment opportunities is usually limited to strategic measures like development and expansion of company activity via financial policies and entering new markets. Considering that investment opportunities lead to allocations of the company's financial resources for income or reduction of costs, it is therefore possible for the company to implement regular and fundamental financial policies for investment opportunities. Investment opportunities in general play an important role in theory and determining financing policies and also the value of company (Vidhank et al. 2001)[4].

5-Financing resources

One of the decisions taken by the management of economic units in order to maximise the shareholders' wealth, relates to financing activities. This kind of decision making relates to capital structure and also determining the best method of financing and its composition. A financial manager can therefore effect the shareholders' wealth by making changes to dividend for each share, dividend policy, scheduling times and profitability risk and choosing the financing method. Theoretical discussions in general regarding capital structure, aim to reaching a balance between two main financing sources, i.e. debt and dividend, so that it may maximise share value and in return, minimise the cost of financing sources as low as possible. Financing sources for each economic unit is made up of internal and external resources. Internal sources include: cash flows from operations, cash from selling of assets and external sources include: borrowing from financial markets and issuing shares.

6-Operational definition of variables:

Financial leverage: financial leverage ratios measure total debts of the company. These ratios reflect company's ability to answer for short-term and long-term commitments. These ratios are calculated by comparing fixed costs and profit (from profit and loss statement) or, by relating debts to dividend (from balance sheet). Financial leverage ratios are important for lenders. For they show whether company revenues cover fixed costs and interest or not, and whether in case of bankruptcy, company assets are enough for repayment of debts or not. If the loan and interest cost is over the limit, possibility of bankruptcy increases. The higher the expectancy of company revenues and income, higher level of debt is also acceptable. Because the probability of company to dishonour its commitments will decrease. Companies which have constant income and profit, usually have higher debt ratio. A company which has fluctuating profit and revenue should have less debt too. If two companies require long-term loans the company with less

long-term debt (in addition to having collateral, profit earning etc) will have priority, therefore if result of this ratio is low for a company, the management of that company should be able to acquire long-term loan when they require.

– Investment opportunities: there is no consensus regarding evaluation and definition of investment opportunities, and presentation of fiscal criteria. Considering the research conducted outside the country and definition by B. K. Jagi and Ferdinand, the three ratios below are used as calculation criteria for investment opportunities. It is important to note that asset markets value derives from asset book value and share market value.

MBVA[5] *= Asset book value + asset market value*
MBVE[6] *Share book value ÷ share market value*
EP[7] *= Share price ÷ share dividend*

– Dividend changes: by dividend changes we mean the difference between current year cash dividend of each share and last year's which is divided over each share price at the beginning of the financial year.

$$\text{Dividend changes} = \frac{\text{Last Year's cash dividend} - \text{this year's cash dividend}}{\text{Price of each share at the beginning of financial year}}$$

7-Research hypothesis:

1. There is a significant correlation between investment opportunities and dividend changes.
2. There is a significant correlation between financial leverage and dividend changes.
3. The joint interrelation between financial leverage and investment opportunities effects dividend policy.

8- Statistical population and sample

Tehran Stock Exchange companies who have maintained their membership of the stock exchange during the considered period (i.e. from the beginning of 2009 to the end of 2012), make up the statistical population of the research. Sampling has also been conducted using the elimination process, and the companies selected as sample presented their financial statements to the exchange during the research period and were endorsed by the auditing organisation and the disclosed information together with descriptive notes were complete and accessible.

9-Findings of statistical methods

Results of first hypothesis test:

Results of statistical tests show that sig < 5%, which explains a significant regression at confidence level of 95%. The beta coefficient beta in table 2 has been calculated as -.374 which implies an inverse relationship between investment opportunities and dividend changes. Results of table 1 indicate that determination coefficient is equal to.140 which explains the dividend changes by investment opportunities. In other words, 14% of the changes in dividend policy are explained by the investment opportunities. The correlation coefficient in this table is.374, which indicates a significant relationship between the two variables is verified thus.

10-Results of second hypothesis test

Table 4 shows that beta coefficient is equal to -.398. this shows the correlation coefficient and type of relation between the two variables, which in this hypothesis, is an indication of linear inverse relationship between financial leverage and dividend policy. In table 3 it is stated that the determination coefficient is calculated at.158. This coefficient shows that up to 15% of the dividend changes are expressed by the financial leverage. But, the effect of these changes is inverse, meaning that an increase in financial leverage leads to a reduction in dividend and vice versa. The correlation coefficient in this table is calculated at.398 which indicates a significant relation between dividend policy and financial leverage.

11-Results of third hypothesis test:

In this research, for testing the reciprocity of financial leverage and investment opportunities on dividend policy the multi regression has been used. In table 6 of beta coefficient results, it shows that the combined effect and interaction of two variables, investment opportunities (β = -.258) and financial leverage (β = -.297) on dividend policy is inverse. The results also obtained in table 5 also show that determination coefficient of reciprocal effects of the two variables on dividend policy is equal to.215. This result indicates that profit changes from combined changes of investment opportunities and financial leverage is 21%. The correlation coefficient is equal to.464, which shows the significant relationship of reciprocal effect of the mentioned variables on dividend policy. The Durban-Watson statistic is also given as 2.22 which verify the regression equation.

Conclusion

Since it is expected of the companies with high profitable investment opportunities to invest in such opportunities in order to maximise the company value and increase the shareholders' wealth. And, since investment in these opportunities require financing resources (internal or external), this leads to reduction of resource distribution in the form of dividend. Therefore, creating investment opportunities and

financing resources via borrowing, leads to reduction of dividend. Thus, dividend policy becomes subject to inverse effect from decisions relating to financing policy and investment opportunities. The results of all three theories support this theory.

Recommendation

1. It is recommended that the effect of capital structure on dividend policies to be reviewed.
2. It is recommended the ratio market reaction of dividend policies to be reviewed.
3. It is recommended that the effect of dividend increase from free cash sums on capital structure to be reviewed.

Table 1: Variance analysis of linear model between investment opportunities and dividend policy

Model 1	Sum of Square	Df	Squaremean	T	Sig
Regression residual total	0.443 2.715 3.158	1 183 184	0.443 0.015	29.8 3	0.00
R =.374			R Square =.140		

Table 2: Coefficients

Model 1	Un-standardized coefficients		Un-standardizedcoefficients	T	Sig
	B	Std.error	Beta		
(constant X1	-0.003 -0.049	0.009 0.009	 -0.374	-0.379 -5.46	0.705 0.000

Table 3: Linear model variance analysis between financial leverage and dividend policy

Model 1	Sum of Square	Df	Squaremean	F	Sig
Regression residual total	0.005 2.657 3.158	1 183 184	0.005 0.015	34.439	0.000.
R=.398			R Square =.158		

Table 4: Coefficients

Model 1	Un-standardized coefficients		Un-standardized coefficients	T	Sig
	B	Std.error	Beta		
(constant) X2	0.015 -0.191	0.009 0.033	 -0.398	1.610 -5.686	0.109 0.000

Table 5: Linear model variance analysis between financial leverage, investment opportunities and dividend policy

Model 1	Sum of Square	Df	Squaremean	F	Sig
Regression residual total	0.679 0.479 3.158	2 182 184	0.339 -0.014	24.912	0.000
R=.464			R Square =.215		

Table 6: Coefficients

Model 1	Un-standardized coefficients		Un-standardized coefficients	T	Sig
	B	Std.error	Beta		
(constant) X2 X1	0.01 -0.142 -0.034	0.009 0.034 0.009	 -0.297 -0.258	1.139 -4.163 -3.620	0.258 .000. .000.

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