

# Propensity To Pay Dividend : Testing For Life Cycle and Free Cash Flow Theories

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**P propensity To Pay Dividend : Testing For Life Cycle and Free Cash Flow Theories**

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66

**Abstract**

The purpose of this study is to provide evidences in context of life cycle and free cash flow theories. The study examines the potential factors of firm to pay dividend by conducting logistic regression with sample of 138 firms listed in Indonesia Stock Exchange for period 2010 till 2015. The result of analysis shows that dividend payers generally are firms at mature stage which is consistent with life cycle theory. Also, these mature firms normally are larger firms, more profitable, higher earnings, higher debt and diminish for investment opportunities. In addition, higher debt for dividend payers indicates the existence of free cash flow effects.

## 1. INTRODUCTION

Dividend policy is one of the most controversial topic for study of finance. Its concern with determining the size and pattern of distributions (Baker and Weigand, 2015) and the decision to pay dividend or not (Black, 1976). In fact, it is difficult to determine the factors which have effect for dividend payout. Some researches in finance have engaged in extensive theorizing to explain, others have developed and tested various models and some researchers have surveyed the views by managers and institutional investors about dividend (Baker and Powell, 1999). Gordon (1959) suggests that dividend as an important determinant for the firm value. But, the seminal paper of Miller and Modigliani (1961) provide evidence that dividend has no effect on determining market valuation of the firm, based on perfect and frictionless capital market assumptions.

Firm value depends sole on distribution of future cash flows. Moreover, irrelevance propositions imply that investment policy can be regarded separable from dividend decisions. This result supports the empirical finding by Black and Scholes (1974) and Miller and Scholes (1982) which suggest that no significant relation between stock returns and dividend yield or dividend payout. Baker and Smith (2006) point out that some research appear not in line with dividend irrelevance proposition, they suggest that dividend policy is important to shareholders because it can affect share prices and the wealth of shareholders under modified perfect market assumptions. The work by Baker and Powell (1999) support the finding that dividend policy does matter. The debate of irrelevance theory arise from the assumptions of perfect capital market, because in the real world, market imperfections exist. For instance Black (1976), proposes the dividend puzzle who emphasizes explanation why firms pay dividend and why investors want it.

The controversial paper by DeAngelo and DeAngelo (2007) argue that dividends payout and investment policy are both directly affect the firm value. Irrelevance theorem restrict payouts to an optimum, which is why only investment policy affects firm value. Moreover, Poterba and Summers, (1984), Miller and Rock (1985), Fama, (1980), Jensen and Meckling (1986), Baker and Wurgler (2004a), and Baker and Wurgler (2004b) who explain that dividend exist focusing either on market frictions or imperfections, such as taxes, asymmetric information or signaling effect, and agency costs or on behavioral considerations, such as investor preferences.

The objective of this study is to examine the relation between size, retained earnings to total assets, return on total assets, debt to total assets and price to book value and dividend policy. Furthermore, to find the characteristics of dividend payers and non dividend payers in the context of life cycle and free cash flow theories.

The structures of this study are organized as follows: Section II presents a review of the relevant literatures, the evidence on the determinants of propensity to pay. Section III describes the dataset, sample selection and the method used by this study. Section IV examines and discusses about some determinants for dividend payment by implication of theories for dividend policy and finally, and Section V concludes the study.

## 2. LITERATURE REVIEWS

### 2.1. Free cash flow theory of dividend

According to Eisenhardt (1989), the agency theory is an expanded of risk sharing problem among individual and groups, this problem arises when cooperating parties, principal and agent have different attitudes toward risk. In other study, Ross (1973) propose that the agency relationship arisen between agent and principal, which agent acts on behalf for principal. But, there is a loss of utility for the principal because of information asymmetrically held by manager. The seminal paper of Jensen and Meckling (1976), suggest that the main problem of agency relationship is on the agents decision itself, which is divergence to welfare of principal. Fama (1980) describes role of management as manager and risk bearer, with special role as the decision making. Thus, the risk averse behavior of managers will choose to conclude the uncertainty in the evaluation performance and tend to avoid any risk discount in his performance. In other research, Fama and Jensen (1983) examined the issue of separation of ownership and control. In addition, the agency problem arise because of conflicting interest between principal and agent. Hill and Jones (1992) suggest that divergence of interests between managers and stockholders is show up while stockholders are wealth maximizers and managers maximize a utility function. Recently, Pepper and Gore (2015) propose reconceptualization of agency theory, by modified the model of economic man, but the central issue of agency problem is still conflict interest of agents and principals.

Several mechanism for controlling the agency problems proposed by some researchers. Eisenhardt (1989) suggests that principals can mitigate agency costs by establishing appropriate incentive contracts and by incurring monitoring costs. According to Jensen and Meckling (1976), increasing the firm ownership of the managers decreases

managerial opportunism. Fama (1980) describe the information effects of efficient capital and labor markets on managerial opportunism, which managers face discipline and opportunities provided by their services, both within and outside the firm, while the firms is disciplined by competition from other firms. Fama and Jensen (1983) describe that separation of decision and risk bearing function is effective common approach to controlling the implied agency problem, while the board of directors plays the role of the internal monitor and stock market is an external monitoring devise. Recently, Pepper and Gore (2015) argue that the interests of shareholders and their agents are most likely to be aligned if executives are motivated to perform to the best of their abilities.

Higgins (1972) argues that dividend and investment needs are interdependent, firms need funds for future investment and the selection of a dividend saving program to finance these needs at minimum cost. Jensen (1986) argues that investment required excess of free cash flow to fund all projects that have positive net present values when discounted at the relevant cost of capital, but managers tend to invest the free cash flow on unprofitable investment project rather than payout the excess resources to shareholders.

Easterbrook (1984) points out that the role of dividend as the method of aligning managers interest with those of investors, where dividends may keep firms in the capital market with lower cost and may be useful in adjusting the level of risk taken by managers.

Rozeff (1982) suggests that sum of agency cost and transactions costs determines an optimal dividend payout. Moreover, investment policy influences dividend policy, which firms with higher investment as measured by current and prospective growth rates of revenues have lower dividend payouts. According to Jensen (1986) that the conflict centres around the use of free cash flow by manager, dividend policy helps the firms to alleviate the agency problems, by paying dividends to the shareholder can reduce managerial control over the resources. Another research, Lie (2000) suggests that disbursements of funds to shareholders can mitigate the potential overinvestments by managers associated with excess fund.

## 2.2. Life cycle theory of the firm

The overall process of organization development and growing the organizations move through developmental phases into growth level, Greiner (1972). Scott and Bruce (1987) propose model of firm development, which consists of five steps : inception, which necessity for generating profit in order to survive; survival, where financing emphasis

swing to working capital and finance increased inventories and receivables; growth, which firm unlikely to generate cash for owner; expansion, which retained earnings are still major form of finance dividends; maturity, which firms have sufficient earnings but need long term debt necessary. The study of Berger and Udell (1998) used financial growth cycle paradigm to analyze the economics small business finance and the private equity and debt markets in which these businesses raise funds. The result show that the different sources of small business finance are interconnected through reference to the growth cycle paradigm. Moreover, Dickinson (2011) develops a firm life cycle proxy using cash flow patterns, and find that the market valuation consequences of life cycle are investigated and it its demonstrated that positive future excess returns can be earned for firms that fall into the mature phase.

The life cycle theory stated that dividend tend to be paid by mature firms because they have higher profitability and fewer investment opportunities whereas young firms have abundant investment opportunities thus make them retention the dividend DeAngelo, DeAngelo and Stulz (2006). Some researches implement the life cycle on dividend policy with growth opportunities and retained earnings to total equity and retained earnings to total assets as the proksi. Fama and French (2001) observe a trend that firms with negative retained earnings show no change in their propensity to pay dividend, while those whose earned equity makes them candidates to pay dividends. Moreover, companies with low profitability, small size and strong growth opportunities tend to be companies that never paid dividends. Grullon, Michaely and Swaminathan (2002) suggest that increases in dividends convey information about changes in firm's life cycle, thus dividend increases and other cash payouts follow through firms undergoes as it moves from growth phase to mature phase, this manifest itself in declining rate of reinvestment, declining return on investment and growth rates. Bulan, Subramanian and Tanlu (2007) argue that dividend initiators are large firms with high profitability cash balances and low growth rates, while systematic risk does not change significantly around initiations. DeAngelo, DeAngelo and Stulz (2006) examine the life cycle of publicly traded industrial firm and point out that decision to pay dividends is high when retained earnings are a large portion of total equity and total assets and falls to near zero when most equity is contributed rather than earned. DeAngelo and DeAngelo (2007) combines a life cycle theory and agency theory, with firms investment opportunity set as their proxy for the firms life cycle stage, it implies that firms in early lifetime stages tend to avoid payouts

contrary in mature stages, firm should pay dividends and repurchase stock, because generate ample cash internally and their investment opportunities have faded.

### 2.3. Hypothesis Development

Both the free cash flow and life cycle theories posit that, compared with smaller firms, larger firms with higher total assets indicate the firms is in mature stage, and have higher free cash flow (Thanatawee, 2011). Fama and French (2001) confirmed that the key variables of dividend payers are size, profitability, and investment opportunities. They have larger size, more profitable and lower investment opportunities. DeAngelo, DeAngelo and Stulz (2006) find that size is the determinant of the decision to pay dividends. The result by Denis and Osobov (2008) find that the propensity to paying dividend is associated with firm size as posited by Fama and French (2001) and Denis and Osobov (2008). Recently, Thanatawee (2011) confirmed that larger firms tend to pay higher dividend payout ratio and dividend yield, based on the characteristics of the firms, as payers and non payers. Thus size a proxy for life cycle and free cash flow is predicted to have a positive relation with dividend payment.

*H<sub>a1</sub> : firm size has significant effect to dividend payment*

Firms with higher profitability have more able to generate free cash flow, it makes them candidate to pay dividend (Thanatawee, 2011). Fama and French (2001) find that profitability has significant effect to dividend payments which implies if the firms are more profitable then they shall increase their dividends to shareholders, thus firm with high profitability has high ability for dividend increase. The result by DeAngelo, DeAngelo and Stulz (2006) confirmed that distribution of dividend by firms are positively significant relate with profitability, indicate that profitability is strong determinant of the decisions to pay dividend. Denis and Osobov (2008) confirm that the likelihood of paying dividends is positively related to profitability. This study cast doubt on dividend signaling that stated that dividend payers are newly listed firm and less profitable. Thanatawee (2011) finds that firms with more retained earnings are more likely to pay dividends. Moreover, Fairchild, Guney and Thanatawee (2014) reveal that firms with higher profits tend to pay higher dividend which is support the free cash flow theory. The findings by Grullon, Michaely and Swaminathan, (2002) show that profit decrease after a dividend increase and profits by dividend decreasing firms have tendency to increase. Thus, free cash flow hypothesis predict a positive relation between profitability and dividend payment.

*Ha<sub>2</sub> : profitability has significant effect to dividend*

Consistent with life cycle theory, DeAngelo, Deangelo and Stulz (2006) find significant association between earned/contributed capital as measured by ratio of retained earnings to total equity, ratio of retained earnings to total assets and dividend policies. DeAngelo, DeAngelo and Stulz (2006) test the life cycle theory to explain whether the probability to pay dividend is related to the earned/contributed capital mix, and find that retained earnings to total equity, retained earnings to total assets as their proxies for the firm's life cycle stage have stronger impact on the decision to pay dividend. Thus, free cash flow hypothesis predict a positive relation between earnings and dividend payment.

*Ha<sub>3</sub> : earnings has significant effect to dividend*

Easterbrook (1984) suggests that the second source of agency cost is risk aversion of managers, the personal wealth of managers dependent on firms, if the firms performance poorly or go bankrupt, the managers will lose their job, managers there for will be choose the projects that are safe for their wealth, this concern arise from personal risk aversion. Agrawal and Jayaraman (1994) find that dividend payout and dividend yield of leverage firms than in all equity firms. Thus, Jensen, (1986) finds that dividends and debt are substitute mechanisms for controlling the agency costs. Thanatawee (2011) the result shows that the financial leverage have negative influences on dividend payout, whereas firms with more debt pay lower dividend. Thus, free cash flow hypothesis predict a negative relation between leverage and dividend payment. The result of Budiarmo and Pontoh (2015) show that firms as dividend payers who in mature phase are firms with age below 33 years, have lower debt, larger size, and better profitable, this result in line with life cycle theory. Thus, life cycle and free cash flow hypothesis predict a positive relation between leverage and dividend payment.

*Ha<sub>4</sub> : leverage has significant effect to dividend*

Trade off evolves over life a firm's life cycle result diversity ability to generate cash internally and in its scale of profitability opportunities, in consequences, in their early life cycle stages, firms have scarce profitable projects and less ability to generate funds internally, and so they tend to retention dividend, whereas, mature firms pay dividends and repurchase stock because of lower amount of cash and their investment opportunities tend to shrinking. Thanatawee (2011) examines the relationship of growth opportunities and dividend payouts, and find that market to book ratio is



significantly positive, contradicts the finding by Fama and French (2001) and Jensen, Solberg and Zorn (1992). Moreover, Fairchild, Guney and Thanatawee (2014) show that the market to book ratio has a significant effect to dividend decreases which indicate that firms with higher investment opportunities tend to pay lower dividend. According to Grullon, Michaely and Swaminathan (2002) the dividend increases and other cash payout are the process from growth phase to mature phase. Thus, firms become mature their investment opportunity set become smaller. Thus, life cycle and free cash flow hypothesis predict a negative relation between leverage and dividend payment.

*H<sub>5</sub> : investment opportunities has significant effect to dividend*

### 3. RESEARCH METHOD

This study uses audited financial statement of listed firms as the sample in period of 2010 to 2015 which is provided by Indonesia Stock Exchange. Table 1 presents the detail of the sample for this study.

**Table 1. Samples**

Sectors	Samples (Firms)
Agriculture	54
Mining	78
Basic Industry & Chemicals	186
Miscellaneous Industry	108
Consumer Goods Industry	96
Infrastructure, Utilities, and Transportation	72
Trade, Service, Investment	234
<b>Total</b>	<b>828</b>

This study divides the sample into two clusters according to their propensity to pay dividend, which are firms as dividend payers and firms as non payers. The dividend payers are the firms who pay their dividend on average more or equal Rp 1, while non dividend payers are the firms who pay their dividend on average below Rp 1. On these categories, the dependent variable of this study are 1 for dividend payers and 0 for non dividend payers. The study conducts binary logistic regression as the method of analysis in term to test the hypothesis. Based on variables presented in Table 2, this study construct the regression model as follow:

$$D_{dummy} = \alpha + \beta_{Size} + \beta_{ROA} + \beta_{RETA} + \beta_{DAR} + \beta_{PBV} + \epsilon$$

25

**Table 2. Definitions of variables**

Variables	Definition
Firm size (SIZE)	The natural logarithm of total assets
Profitability (ROA)	Ratio of net income to total assets
Earnings (RETA)	Ratio of retained earnings to total assets
Debt (DAR)	Ratio of total debt to total assets
Investment opportunities (PBV)	Ratio of market value to book value of equity

38

**4. RESULTS AND DISCUSSION**

Table 3 presents descriptive statistics for explanatory variables of the regression model. Descriptive statistics shows that dividend payers have considerably greater mean value of size (15.3416), return on assets (0.1028), retained earnings to total assets (0.3223), and price to book value (13.4651) rather than non payers. This results indicate that dividend payers are firms with larger of total assets and more profitable, which is consistent with Fama and French (2002). Still consistent with Fama and French (2002), since these firms have larger ratio of retained earning to total assets, then it indicates they have larger funds to make them have more probability to pay dividends and financing their projects with internal funds and less external funds as showed by small debt ratio. In addition, these firm indicates have large investment opportunities as they have higher ratio of market value to book value of equity.

Otherwise, the non payers tend to have smaller size and lower profitability concern with the total assets they have. The lower retained earnings to total assets indicates these firms have less probability to pay dividends to their shareholders. The higher debt to assets ratio indicates these firms are using large leverage to finance their projects. According to Bonaimé, Öztekin and Warr (2014), debt ratio over than 50% could be classified as higher debt.

**Table 3. Descriptive statistics**

	Payers			Non Payers		
	Minimum	Maximum	Mean	Minimum	Maximum	Mean
Size	11.40	19.32	15.3416	9.43	17.31	13.9401
ROA	-0.16	0.76	0.1028	-1.28	3.47	0.0168
RETA	-0.94	1.33	0.3223	-26.74	1.80	-0.4347
DAR	0.10	2.12	0.4655	0.00	5.03	0.5700
PBV	-1421.34	1193.89	13.4651	-2836.37	52268.11	257.6051

85 Table 4 presents results of logit regression analysis to examine 56 relationship between dividend policy and its independent variables. The results report that all independent variables have significant effects to dependent variable, which means Ha<sub>1</sub>, Ha<sub>2</sub>, Ha<sub>3</sub>, and Ha<sub>4</sub> are accepted. 11 The results indicate that firms as dividend payers relative to firms as non dividend payers have strong tendency to follow life cycle theory and indicate have free cash flow effect.

48 Table 4. Logistic regression of dividend payers and non dividend payers

	Dividend payers	Non dividend payers
Constant	-6.290	6.290
Size	0.524*	-0.524*
ROA	7.513*	-7.513*
RETA	6.633*	-6.633*
DAR	1.283*	-1.283*
PBV	-0.310*	0.310*

\*significant at 5%

#### 4.1. Firm as dividend payers

The results in table 4 shows that size, return on assets, retained earnings to total assets and debt to total assets are positively significant, while those on price to book value are negatively significant. These finding 2 suggest that firms with larger size, more profitability, higher retained earnings to total assets, higher debt to total assets, and lower price to book value tend to pay dividend. These results tend to follow life cycle theory. The positive effect for size, return on assets, and negative effect for price to book value are in line with 39 Fama and French (2001) and DeAngelo, DeAngelo and Stulz (2006). They suggest that characteristics of dividend payers are larger size, higher profitability, and less investment opportunities. Moreover, the dividend payers tend to have higher 62 retained earnings to total assets as posed by DeAngelo, DeAngelo and Stulz (2006) and non payers the reverse. 68

Firm size, return on assets, and retained earnings to total assets have a significant positive 81 impact on dividend payment, which is consistent with Fama and French (2001), Grullon, Michaely, and Swaminathan (2002), DeAngelo, DeAngelo and Stulz (2006), Denis and Osobov (2008), Thanatawee (2011), and Fairchild, Guney and Thanatawee (2014) in context of life cycle theory. They conclude that firms with higher size, more profitable, higher retained earnings and less investment opportunities are firms in mature phase and have tendency to pay dividend. The higher return on assets indicates these firms manage their assets efficiently in purpose to generate profit. Thus, table 4 provides the results of 22

logistic regression and shows that dividend payers have a higher <sup>2</sup> ratio of retained earnings to total assets. Its indicate, these firms are able to accumulate their profit for over time which make them have capability to pay dividends. Also, more profitable the firms then will expand their business and become more larger which give them higher profitability as well as their size. In addition, the negative coefficient for price to book value indicate that these firms have abundant investment opportunity.

Furthermore, the higher debt ratio shows these firms are using larger external financing even it in mature phase. This indicate that internal resources of these firms are limited to exploit the large investment project and to pay dividend to shareholder. This make them to rely on <sup>40</sup> external financing resources. Also, in relation to price to book value, the result provided <sup>40</sup> negative relation between the market to book ratio and leverage ratio. It means that firms with low market to book ratio tend to had significantly higher leverage (Lang, Ofek and Stulz, 1996). The significant positive relation between debt to assets support the research of Agrawal and Jayaraman (1994), and Budiarmo and Pontoh (2016) in context of life cycle theory.

<sup>49</sup> The ratio of debt to assets has a significant positive effects in the dividend payment. Rozeff (1982) suggests that the lower payout ratios in firms that have greater growth opportunities with the intention of saving fund to finance growth. Thus the higher dividend payout indicate that firms used lower debt, because they have less investment opportunities, have sufficient fund and do not need external financing. These firms have tendency to use dividend payment as a <sup>5</sup> mechanism for controlling managers selfish behaviour (Jensen, 1986). These results are in line with the interpretation of free cash flow theory, that debt as a tool to control managers from the selfish behaviours, in being use substantial free cash flow in low return project or waste. This result supporting the work by Jensen (1986), Easterbrook, (1984), Agrawal and Jayaraman (1994), and Thanatawee, (2011),

Furthermore, Table 2 provides results that the increase in debt is follow with the increase total assets and earnings performance, it can be assume that firms use debt to finance investment and depend more on the internal financing for their operating and investing activities.

The results from logit regression show that among explanatory variables are significant determinants of dividend payment. Moreover, the positive sign of size, return on assets and debt to assets ratio, indicate that managers have incentives to grow the firms <sup>46</sup> beyond

the optimal size, in doing so, managers power increase concern the resources under their control (Jensen, 1986). Moreover, Eisenhardt, (1989) suggests that management have special role, as decision making, rationally will assessments of ex post deviations of the contracts because it will effect through the manager's wage, therefore, it indicate that managers follow the behavior oriented contract (e.g. salaries and hierarchical governance). Furthermore, Aivazian and Cleary, (2003) suggest that the higher debt to assets ratio due to greater reliance on bank debt. Hill and Jones (1992) suggest that because shareholders cannot verify that the agent has behaved appropriately, there for , they use the higher debt to limit the opportunistic action by managers control the managers power of resources. Also, indicate that shareholders is buying managers behaviour and transfer risk to the managers (Eisenhardt, 1989).

#### 4.2. Firm as non dividend payers

The results from logit regressions in table 4 shows that size, return on assets, retained earnings to total assets and debt to total assets are negatively significant, while those on price to book value are positive significantly. These findings suggest that firms with small size, lower profitability, lower retained earnings to total assets, lower debt to total assets and higher price to book value tend to pay higher dividend. These results are not in line with life cycle theory, this theory suggest that dividend tend to be paid by mature firms because they have higher profitability and fewer attractive investment opportunities (DeAngelo, DeAngelo and Stulz, 2006). These firms tend to less ability in generate profit, dont use externaly fund but they pay dividend. Grullon, Michaely, and Swaminathan, (2002) suggest that if the good news in dividend increase is associated with cash flows and systematic risk, moreover increase dividends experience a significant decline in return on assets.

The negative coefficient for size and positive coefficient for price to book value are not in line with free cash flow theory. It suggest that self interested managers lead to drive the managers to expand firms bigger than the optimal size because the larger the firms the more resources under managers control and it is also associated with increase in managers compensation (Jensen, 1986). Furthermore, this theory suggests that dividend can be a mechanisme to mitigate the selfish behavior of managers associated with excess fund. The positive coefficient of price to book value is not in line with the free cash flow theory as suggest by Jensen, (1986), Easterbrook, (1984), Jensen and Meckling, (1976). Thus, this result not in line with the study of Jensen (1986), that

suggest debt can be an effective substitute for dividends and a mechanism to mitigate agency problems.

## **5. CONCLUSION**

Firms as dividend payers have tendency to follow life cycle theory, thus, the optimal dividend payment depends on the firms phase in its life cycle. This study provides the evidence that firms dividend payers are firms in mature stage because at this level they have higher profitability, higher earnings, and lower or shrink investment opportunities which make them are tend to pay dividend.

The dividend payers tend to follow the free cash flow theory as indicate by size, return on assets, retained earnings to total assets, debt to assets ratio price to book value. The agency problems in dividend payers are associated with excess fund and control over resources by managers opportunisme, the mechanisme to alleviate this problem firms use higher dividend to limited the excess fund from project with negative net present value, while debt used as internal monitoring to managers behavior. The dividend payers tend to follow the life cycle theory, as a mature firms high cash flows, lower investment opportunities. While non dividend payers are not in line with life cycle, which small size, less profitability, lower earnings, lower debt and high investment opportunities. Also, non dividend payers are not in line with free cash flow theory, because they dont have excess fund thus, agency problem with free cash flow does not exist.

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