

Asset Growth, Investment Opportunity Set, Free Cash Flow as Determination of Dividend Payment Probability for Manufacturing Companies in Indonesia

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Abstract—The purpose of this paper to investigate the asset growth, investment opportunity set, free cash flow on dividend payment probability. Non probability sampling research sample with selected purposive sampling of 101 manufacturing companies in Indonesia. The research period is 2016-2018. The unit of analysis is a company with pooled data of 303 observations. Secondary data collection based on the Indonesian Capital Market Directory (ICMD). Data analysis techniques with descriptive and inferential. Inferential testing with logistic regression techniques because the dependent variable is in the form of categories or non-metrics, namely the probability of companies paying dividends and not making dividend payments. The research findings show that FCF has a log of odds for companies to positively pay dividends while MBAR as a proxy for IOS and Asset Growth was not found to be able to predict the log of odds for companies paying dividends.

Keywords: *Asset Growth, Investment Opportunity Set (IOS), Free Cash Flow (FCF), dividend policy, logistic regression*

I. INTRODUCTION

Dividend policy acts as a source of information on the financial performance of companies going public. Financial performance consists of market performance specifically related to stock prices. Investor motivation in stock prices is capital gains and dividends. Dividends are the distribution of profits distributed to shareholders in the form of stock dividends or cash dividends [1]. Therefore dividend distribution becomes a positive signal that the company has good fundamental performance. The distribution of dividends as information becomes a reflection of company profits, if not shared investors tend to have an assessment that the company's financial performance is experiencing problems [2].

An indicator often used to measure dividend policy is the dividend payout ratio (DPR) based on several financial researchers [3] - [7]. Parliament is measured by dividing the amount of dividends per share by net income per share [1]. Optimal DPR is a function of management's opinion regarding investor preferences between dividends versus capital gains, corporate investment opportunities, target capital structure and availability of external capital funds [8].

[3] conducted a study on the distribution of dividend policy in developing capital markets with 191 companies in Sri Lanka and as many as 1337 observations. The findings using logistic regression found that the Investment Opportunity Set (IOS), Free Cash Flow (FCF) as a determinant of dividend payments. Research [9], [10] found that FCF owned by companies had a positive influence on the DPR paid by companies. The greater the FCF that is in the company, the greater the DPR that will be paid [11]. The higher FCF of a company indicates that the company is healthy because it has cash that can be used for growth, investment and dividend distribution. However [7] with the object of research on manufacturing companies on the Indonesia Stock Exchange found that there was no influence between the FCF on the DPR.

Investment as a reflection of investment decisions looks at the growth of assets each year. The higher asset growth shows the company is growing and developing so that the ability to pay dividends is not hampered by a company that continues to grow will have greater investment opportunities so that investment opportunities will be better. Market-based IOS proxy is measured by the ratio of market value to the book value of assets [12]; [13].

Based on the description above this research focuses on high asset growth, optimal investment opportunities and having free cash flow, the company has the probability to pay dividends. The urgency of this study has differences in some previous studies related to the probability of paying dividends. The purpose of this study is to provide empirical evidence in the manufacturing sector the factors that determine the dividend payment based on asset growth factors, IOS and FCF.

II. LITERATURE REVIEW

A. Asset Growth

Asset growth reflects that the company is growing and developing. Assets are reviewed from two things namely current assets and fixed assets. Fixed assets show investment that is long-term so that it requires a large capital expenditure. Higher growth assets were found in research [14] with a sample of 34 companies in developing capital markets with the finding that there was a significant negative effect between investment and the DPR. High

investment causes companies to pay lower dividends. Existing funds used by companies to increase the amount of investment this can be interpreted that companies that continue to grow require large funds.

Asset growth is a manifestation of the ability of financial managers to make decisions related to the company's wealth structure. Companies with high asset growth should have a probability of dividend payments because with high asset growth shows effective investment decisions [14] - [16]. Based on this description the first hypothesis is:

H₁: The higher the asset growth shows the greater the probability of the company to pay dividends.

B. Investment Opportunity Set

Investments made by companies are reflected in three aspects, namely liquidity, investment opportunities and financial constraints [8]. Liquidity is the company's ability to pay all short-term obligations. The liquidity aspect is related to the company's ability to repay all obligations that are due soon or fall into the category of short-term liabilities. The investment opportunity aspect concerns how the company combines assets in place and decides various investment options in the future. The financial constraint aspect (funding constraints) is related to the company's limitations in obtaining capital from funding sources available for investment.

The investment decision is expected to provide positive growth for both companies and investors. For investors, positive growth is a favorable prospect, because investments that are invested can provide optimal returns in the future. This means that if the company receives positive growth, it indicates an investment opportunity for the company to determine various investment options. The greater the investment opportunities, the manager tries to take these opportunities in order to maximize the welfare of shareholders. In the development of the many choices of investment opportunities the emergence of the term future investment options later known as IOS.

The term IOS was introduced by [17] which describes the extent or number of investment opportunities in relation to achieving company goals. The number of investment opportunities faced by companies requires the ability of companies to choose the right type of investment to do. [18] states that IOS provides a broader direction where the value of the company as the main goal depends on the company's expenses in the future, which at present are investment choices that are expected to produce a greater return. IOS is a combination of assets owned (assets in place) and investment choices in the future with a Net Present Value (NPV) which is positive [19].

[20] further emphasizes that IOS plays an important role in corporate finance in relation to achieving company goals. Likewise [21] explains that IOS is a component of the company's value resulting from choices for making investments in the future. [19] states that a company's IOS influences the way the company is valued by managers, owners, investors and creditors. The value of IOS depends on expenses determined by future management which at present are investment choices expected to provide a large

return on the cost of capital to obtain profits. Even related to share price movements that IOS is the dominant factor.

The above definition can be interpreted that IOS contains two meanings, namely: 1) IOS is an investment decision made by the company to provide positive growth, so that IOS becomes a thought as a growth prospect; and 2) IOS is the company's ability to determine what type of investment will be carried out. For companies that cannot choose the right type of investment will experience higher expenses compared to the value of lost opportunity. So it can be concluded that IOS is the relationship between current and future expenditure with value / return / prospect as a result of investment decisions to produce corporate value. IOS is often associated with company growth according to [21]. IOS is an investment option that produces a positive NPV while growth is the company's ability to increase company value. The effectiveness of IOS is able to contribute to the increase in dividends [3], [13], [22], [23] [24]. Based on the description above, the second hypothesis is:

H₂: The greater the Investment Opportunity Set, the greater the probability of the company to pay dividends

C. Free Cash Flow

FCF is one of the strategic assets owned by the company based on the RBV theory in the form of financial strategic assets and capabilities as a resource-based approach. FCF reflects the availability of the company's net cash. FCF is sourced from the company's operations which can be calculated by direct and indirect methods.

High FCF illustrates that companies have idle cash which can cause agency problems. But if FCF is low, it illustrates that the company has a lack of cash funds in the company's operations. FCF related to corporate diversification activities is one of the strategic assets owned by the company based on the RBV theory in the form of strategic assets in the form of resources and capabilities as a resource-based approach. [24] states, the magnitude of the FCF illustrates the characteristics of companies with propensity to invest and FCF that exist in business today that is economically untenable can be used for unrelated diversification. The availability of a large FCF has the potential for agency problems to occur because they are associated with over-investment problems [24].

High FCF illustrates that companies have a positive signal in utilizing investment opportunities [11], [25]. Interpreted that the company does not have financial constraints to take advantage of existing investment opportunities. The selection of investments to be made by a manager chooses based on the rate of return that can cover the cost of debt which in turn can increase the value of the company.

Free cash flow is cash available in companies that are free from taxes and other costs within the company. Companies with low growth opportunities and have high FCF will pay high dividends to prevent managers from investing cash in projects that have a negative net present value [1]. This means that the company will use FCF to pay dividends [12], [23]. FCF shows investors the picture that dividends distributed by companies are not just strategies to

get around the market with the intention of increasing the value of the company. The size of the dividend paid to shareholders depends on the dividend policy of each company and is based on various factors [1]. Based on the description above, the second hypothesis is:

H₃: The higher the Free Cash Flow the higher the probability of dividend payments

III. METHOD

This study uses secondary data, namely the structural sector company on the Indonesia Stock Exchange (IDX). The purposive sampling method was 101 companies (Appendix 1) with a number of analysis units of 303 observations.

The dependent variable is dividend payment. Measurement of dividend payment variables with a category scale or called non-metric. Companies making dividend payments are the dependent variable with two categories, namely 1 = dividend payment and 0 = no dividend payment. The independent variable is asset growth, IOS and FCF. The scale of measurement of independent variables is non-category (continuous).

Asset growth is an indicator the company continues to grow and develop. Asset growth is a reflection of investment decisions [26], [27]. The formula of asset growth in this study is:

$$AG = \frac{\text{Total Aset}_t - \text{Total Aset}_{t-1}}{\text{Total Aset}_{t-1}}$$

Companies that continue to grow and develop have a set of opportunities for investment or called IOS. IOS proxy as a market-based company performance [1]. The higher IOS is interpreted that the company has investment opportunities that are optimal enough to give a signal to investors that the company is currently growing and developing. The investment opportunity aspect concerns how the company combines assets in place and decides various investment options in the future. IOS Proxy with MBA Ratio (Market-to-Book Assets Ratio). This ratio reflects the company's growth prospects. This prospect is reflected by investor interest in the capital market and the company's ability to manage internal assets and sources of funds. The IOS formula refers to [19], [20]:

$$MBA \text{ Ratio} = \frac{(\text{Total Assets} - \text{Total Equity}) + (\text{Share Outstanding} \times \text{Share Price})}{\text{Book Value of Assets}}$$

FCF is defined as available cash to be distributed to all investors after the company places all of its investment in fixed assets, new products and working capital needed to maintain an ongoing operation [8]. The higher FCF shows that the company has no difficulty in paying dividends.

$$FCF = \text{Cash Flow From Operation} - \text{Capital Expenditure}$$

The data that has been collected will be analyzed by two methods, namely descriptive and inferential. Descriptive statistics present empirical data on average the value of each variable, namely asset growth, IOS, FCF. Inferential statistics as a representation of the proposed hypothesis. The tool used to answer the research hypothesis is using SPSS. The dependent variable is a category (non-metric) while the independent variable is continuous (metric) so that using logistic regression will be more appropriate. Multivariate assumptions of normal distribution are not needed because the variables used are mixed. The research equation can be written as follows:

$$\text{Ln} \left(\frac{p}{1-p} \right) = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3$$

Information:

$$\text{Ln} \left(\frac{p}{1-p} \right) = 1 \text{ to pay dividend; } 0 \text{ not pay dividend}$$

X₁ = Growth Assets
 X₂ = MBAR
 X₃ = Free Cash Flow
 β₁ β₂ β₃ β₄ = Coefficient value

Testing is done by discussing the significance of the model and test parameters. First the data will be tested with the overall model fit test against the data. Testing is done by comparing data before and after the variable asset growth, MBAR, and FCF included in the research model. Model eligibility requirements are called fit or fit if the value of -2 log likelihood in block number 0 is greater than block number 1. Statistical tests are performed by comparing the block model numbers 0 and 1 [28]:

$$G = -2 \log \left[\frac{\text{likelihood blok number 0}}{\text{likelihood blok number 1}} \right]$$

Then the goodness of fit model is tested based on the Nagelkerke's R Square value. The higher this value, the better it is able to predict the probability of a company paying dividends and not paying dividends. Testing each parameter by taking into account the results of the variable in equation with a decision based on α of 5%. Hypothesis decisions are accepted if the results of significance <5% and vice versa are not accepted if the results of significance of >5%.

IV. RESULT AND DISCUSSION

Descriptive Statistics

Descriptive statistics of the Growth Asset, MBAR, FCF and DPR variables are shown in Table 1. The number of observations is 303 units of analysis.

Table 1. Descriptive Statistics of Variables (N=303)

Variables	Minimum	Maximum	Mean	Std. Deviation
Asset Growth (%)	-0,99	784,59	2,59	43,35
MBAR (%)	-578,87	2.107,56	7,55	126,00
FCF (000)	-2.242,16	1.929,67	2.955,21	0,50
Dividend	0,00	1,00	0,53	0,50

Source: secondary data, 2018
Inferential Statistics

Hypothesis testing with logistic regression begins with checking overall model fit based on the likelihood function. The hypotheses to assess the fit model are:

- H0 = Model fit with data
- Ha = Model does not fit the data

Table 2. Overall Model Fit

Block Number	-2Log Likelihood	Nagelkerke R Square	Omnibus Test	Hosmer and Lemeshow
0	155.326		X ² = 8.477	X ² = 5.297
1	146.849	0.090	Sig 0.037	Sig 0.725

Source: Processing data, 2019

Referring to Table 2 that the Log Likelihood value in block number 0 which only includes a constant of 155,326 while block number 1 after entering the variables AG, MBAR and FCF then decreased by 8,477 or became 146,849 with significant at 0.037 <5% (seen in the Omnibus test) it can be concluded that H0 is rejected and the addition of variables AG, MBAR and FCF improve the model so that it becomes a model fit with the data. This means that all independent variables namely AG, MBAR and FCF can be included in the model.

The results of Hosmer and Lemeshow's Test were conducted to test H0 that empirical data matched the model or interpreted that there was no difference between the model and the data. This test is carried out by taking into account the value of X² = 5.297 with a significance probability of 0.725 well above 0.05 so that it is concluded that there is no statistically significant difference between the models created and the observed values.

Furthermore, the results of the goodness of fit model to assess the feasibility of the model based on Nagelkerke R² obtained by 0.09 means that the probability of dividend payment probability can be explained by the variability of the variables AG, MBAR and FCF only 9%. Nagelkerke R²'s results are sufficient because 91% can be explained by other variables not included in this study.

Table 3. Hypothesis Testing

Variables	β	Sig	Exp (B)	Conclusion
Growth Asset	-0.125	0.528	0.882	Reject H ₁
MBAR	-0.119	0.558	0.887	Reject H ₂
FCF	0.162	0.019	1.176	Accepted H ₃
Constant	-1.577	0.136	0.207	

Source: Processing data, 2019
significant at a significance level of 5%

Table 3 shows the results of hypothesis testing. If it is included in the model, the following is shown:

$$\ln\left(\frac{p}{1-p}\right) = -1.577 - 0.125GA - 0.119MBAR + 0.162FCF$$

or,

$$\frac{p}{1-p} = e^{(-1.577 - 0.125GA - 0.119MBAR + 0.162FCF)}$$

$$= e^{-1.577} x e^{-0.125 x GA} x e^{-0.119 x MBAR} x e^{0.162 x FCF}$$

Based on the results of hypothesis testing and research equations it appears that the relationship between odds and variables GA, MBAR and FCF is if GA is constant, then the probability of the company paying dividends will decrease by a factor of 0.882 (e-125) for each GA reduction. This means that GA is constant then the odds of dividend payment are 0.882 times lower than not paying dividends. The same thing if MBAR is constant, the company will pay a dividend of 0.887 times lower than paying dividends. Furthermore, if FCF is constant, the odds of dividend payments will increase by 0.162 times for companies to pay dividends.

Testing the hypothesis in Table 3 that the FCF independent variable is significant at a probability of 0.019 <0.05 meaning that the log of odds of a company paying dividends is positively related to FCF. These findings then accept H₁ and reject H₀. The GA independent variable was found to be insignificant because of the probability of 0.528 > 0.05 so that GA had no relationship in dividend payments (refused H₁). MBAR variable as a proxy of IOS found a probability of 0.558 > 0.05 so that H₂ is rejected, meaning there is not enough evidence that there is an influence of MBAR for companies in paying dividends.

The research findings show that a significant value of 0.528 > 0.05 so that H₁ is declared rejected. Research findings have not been able empirically that changes in AG growth do not provide predictive power for companies as a probability to pay dividends.

Based on Table 1 shows statistically descriptive average AG value of 2.59% while the highest value of 785%. However, some companies in the study sample had the lowest decrease of -0.99%. This means that the company in the study sample has a negative asset growth ratio. AG is a measure of investment decision performance. Usually

financial managers will make optimal or effective investment decisions because the investments made require proper capital planning. Research findings that show that AG is not able to predict companies in paying dividends is not in line with the findings [14] - [16].

Based on Table 3, it was found that IOS which was proxy by MBAR was not significant to predict the probability of a company paying dividends. This finding concludes that H_2 was not accepted. This research is not enough empirical evidence for manufacturing companies on the IDX that the probability of dividend payments is not influenced by the company's MBAR.

The argument that explains that MBAR is not significant can be observed statistically descriptive in Table 2 with an average MBAR ratio of 8%. This means that the average ability of manufacturing companies in locating assets from various investment opportunity choices in the future is already good because it is above 5% but the empirical fact shows that the minimum value is quite high at -580% for the research sample companies have not been able to place assets maximally.

The findings of this study are quite different from some previous research findings namely [3], [22], [23], [29]. Previous research found that IOS plays an important role for companies in providing dividends. But the findings of this study have results that are in line with [11].

Refer to the findings in Table 3 that FCF of manufacturing companies is significantly positive as a prediction of the probability of a company paying dividends. Empirical fact that on average the amount of FCF is Rp3295 million. This shows that the ability of FCF as a reflection of the difference between CFFO and Capital Expenditure is positive. These findings state that H_3 is proven.

The role of FCF as excess cash [11], [25] indicates that the availability of a number of funds will be distributed to shareholders. Investors will prefer cash payments in cash or cash dividends if compared with the addition of the number of shares [27]. The findings of this study are in line with previous studies namely [11], [12], [23], [25] but not in line with [5], [7]. The difference in findings with [7] is because the FCF measurement includes net working capital data, while this study measures the FCF with CFFO for capital expenditure. Research [5] integrates the FCF hypothesis and signaling theory so that it has not been proven empirically.

V. CONCLUSION AND SUGGESTION

Based on discussion, this research found that free cash flow increase, probability for pay dividend. Market to book ratio not significant to log of odds for company to pay dividend. Suggestion for this research the value of goodness fit model very small so next future add others variable related to dividend payment especially for cash dividend.

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