

The Moderating Role of Investment Opportunity Set on The Firms' Dividend Decisions

Bayu Sindhu Raharja¹, Qosim Khoiri Anwar², Arif Nugroho³, Frank Aligardh⁴
{¹bayusindhu@iain-surakarta.ac.id, ²qt.choy@gmail.com, ³arif.nugroho@iain-surakarta.ac.id, ⁴frankaligarhh@iain-surakarta.ac.id}

The Faculty of Syariah, Institut Agama Islam Negeri (IAIN) Surakarta, Indonesia¹²
The Faculty of Islamic Economics and Business, Institut Agama Islam Negeri (IAIN) Surakarta, Indonesia³⁴

Abstract. This study examines the factors that influence the firms in taking dividend policy. The factors studied in this study are the firms' profitability and firms' growth. Beside of that, it also examines the moderating effect of investment opportunity sets concerning company profitability and company growth with dividend decisions. The sample of this study are manufacturing firms which listed on the Indonesia Stock Exchange. The methods used to analyse this moderating effect is Moderated Regression Analysis (MRA) and Chow-test. The results indicate that profitability has a positive and significant effect on dividend decisions. Besides, this study also proves that company growth has a significant negative impact on dividend decisions. Likewise, with the introduced moderation effect in this study, the results of the analysis show evidence that there is a moderating effect of the investment opportunity set (IOS) in the relationship of company profitability, the growth of the company with dividend decisions.

Keywords: Firm Growth, Firm Performance, Agency Theory

1. Introduction

Indonesia is one of the developing countries that is continuing to grow; this is evidenced by economic indicators that mostly continue to grow in a positive direction. For example, based on data from the Indonesian Central Bureau of Statistics the rate of Gross Domestic Product based on expenditure from 2014 - 2017 experienced a growth rate of 8.7%. The same thing happens with indicators in the capital market. Based on data from the Financial Services Authority of the Republic of Indonesia, in the last three years, 2016 - 2018 stock trading volume levels, stock trading values, and stock trading frequencies have increased [1],[2]. More clearly can be seen in Figure.1 below.

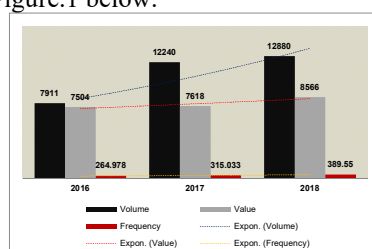


Fig.1. The Development of Capital Market in Indonesia (In millions)
Sources: The Financial Services Authority of Republic Indonesia

Based on the data presented in Figure.1 even these indicators show an exponential increase. The same thing happened to the level of dividends distributed by companies to shareholders. Based on data from Indonesian Central Securities Custodian from 2009 - 2015 the nominal amount of dividend distribution by the company to shareholders increases exponentially. However, the nominal amount of dividend distribution tends to be more volatile than the previous 3 (three) indicators. In detail, the pattern of increasing the number of dividends can be seen in Figure.2 below.

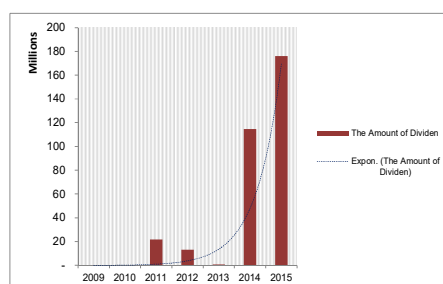


Fig.2. The Amount of Total Dividend

Sources: Indonesian Central Securities Custodian

As previously stated, although the trend of increasing the number of dividends also showed an exponential pattern. However, its distribution in Indonesia tends to be very volatile, based on the results of the analysis, the standard deviation level of the total dividend distribution each year reaches 65 million. It is the underlying reason why research on dividends, especially in Indonesia is still exciting.

Research on the topic of dividends is still very attractive for financial researchers. In this area, until now there is still much room for debate. For example is about several factors that influence dividend decisions. Some of the previous research mostly discussed factors that affect dividend policy. For instance, previous research conduct a study using survey methods to prove several theories that explain the phenomenon of dividend decisions [3]. However, among these studies, it is scarce to discuss the relationship between dividends and its determinants systematically. One lack of previous research has been focused on the direct link between one factor on dividend policy. Thus, the existing model has not been optimal in explaining the phenomenon of the emergence of dividend policy. For example, the much previous research said that one of the main factors which affected the dividend policy is the profitability of the firms. They noted that profitability has the positive effect on dividend policy [4],[5],[6],[7],[8]. In other words, the higher the profitability of the firms, the more likely they are to distribute dividends. However, other facts showed that the higher the profitability, the less likely the firms are to distribute profits [9]. Likewise, with the variable of firms' growth, this variable is often used as a direct predictor of the emergence of dividend policy [6]. Some previous studies have stated that firms' growth has a negative relation to dividend decisions [10]. However, in the same case as the profitability, some previous studies actually found the opposite finding [11],[12]. It phenomenon at least illustrates that profitability and firms' growth are not a direct determinant of the decision of the firm's dividend decision.

Whereas from an investor's point of view the existence of an accurate model in explaining it becomes very important. Because the profit gained by an investor only comes from two things, there are dividends and capital gains. Remember again that dividends are the

company's obligation to provide and distribute profit sharing to investors who have deposited their funds to the company. It may be that the company does not share part of the profits in the form of dividends because the company's profits will be reinvested in the way of projects in the future. Likewise, when a company is in a high growth phase, the company will undoubtedly tend to hold back its profits to finance the growth. It depends on the dividend decision that made by the board of director. Even though the investment decision, in the long run, will benefit investors, but most investors prefer to choose short-term profits that they will get in the form of dividends. It relates to how sure you will get the benefit. Dividends are perceived to provide more certainty than the profits derived from the investments that the company will make in the future. Therefore, as previously explained, this is one of the reasons why research in this topic is so important.

Many previous studies stated that the company's delay in dividend distribution was due to the investment opportunities that provided impressive results in the future. They showed that an investment opportunity has a negative impact on dividend policy [13],[14],[15]. It is a very logical reason, of course, because companies must maintain the sustainability of their business in the future through investment decisions which made today. Managers should guarantee the availability of these investment funds by reserving net income in retained earnings accounts. It is the main reason why the firms have not distribute the dividends. Remember, that internal funding sources are relatively cheaper than external funding sources. Managers naturally prefer to hold profits and using internal funding rather than issue new shares or take new debt. However, several previous studies found interesting empirical facts, instead of supporting the previous research, the results of their study stated that the investment opportunity set had a positive effect on dividend decisions [16],[17]. Likewise with previous scholars who found that investment opportunity sets did not affect dividend decisions. It opens a possibility, and it could be the role of investment opportunity set not as direct determinants that influence the dividend decisions but rather as moderating variables of the direct relationship between profitability and company growth to dividend decisions [18].

Therefore, this research shows a structured model of how a dividend decision arises. The model explains the relationship between profitability, growth, dividend facilitated its model. This model facilitates the dividend policy with investment opportunity set as a moderating variable. As mentioned earlier, this has become very significant due to some previous studies have not give more attention on this issue.

2. Literature Review

2.1 Agency Theory

The agency theory which was proposed by is one of the many theory that explained the occurring of dividend [19]. The theory explains the modern of corporate governance. Refer to his research, and it was stated that the governance structure of the company has a separate tendency. That is, separate between company managers and company owners. The company manager does not necessarily have a company, so does the owner who does not necessarily manage the company directly [20], [21]. It occurred the consequence of the problem, the conflict between the owner and the manager commonly. Included in the context of dividend distribution. A company owner (investor) prefer when the company distributes dividends. Whereas managers (agents) have different tendencies, they prefer the company's profits to be held and not spread in the form of dividends [23]. Managers prefer to reinvest this funds on the project that will give them an opportunity to get a greater incentive in the future, especially

when the company is in a high growth phase . To maintain this growth and even increase, it is unlikely that the company will distribute dividends to investors. Some previous studies stated that the company's growth has a negative relation to dividend decisions [24],[25]. This condition is of course with the exception; namely, when the net profit generated by the company is enormous, the managers will want to share a portion of the net income in the form of dividends to investors. Some studies show that the level of profitability has a positive effect on the company's dividend decision [26],[27],[28] . Therefore, this study formulates the first and second hypotheses as follows:

H₁: The firms growth has a negative and significant impact on dividend decisions

H₂: The firms profitability has a positive and significant effect on dividend decisions

2.2 The Role of Investor Opportunity Set (IOS)

However, the hypotheses first and second not been strong enough to explain how the dividend decision emerged. Therefore, it needs a more structured and systematic model to solve this. This study introduces the IOS variable as a variable that moderates the relationship of growth and profitability of the company to dividend policy. This variable was chosen by the inconsistency of findings in previous studies when IOS was used as an independent variable. Some reviews state that IOS has a positive effect on dividend decisions, while several other studies indicated otherwise.

IOS is an indicator to see how a company owns investment opportunities in the future. If the IOS level of a company is high, this means that the company has a high level of investment opportunities in the future. This study argues that this variable should appropriately function as a moderating variable for firms' growth and the firms' profitability in its function as a predictor for dividend decisions rather than as an independent variable. It could be that the company will still distribute dividends even though at that time the company was in a high growth phase because at that time the company had a low investment opportunity (IOS). Likewise, when companies have high profitability, they may not distribute dividends at that time. It is because at the same time the company has a high investment opportunity. Therefore, this research formulates a hypothesis.

H₃: Investment opportunity set strengthens the negative relationship between firms growth and dividend decision

H₄: Investment opportunity set weakens the positive relationship of firms profitability with dividend decision

2.3 Theoretical Framework

Based on the explanation of the formulation of the above hypothesis, the research model in this study was formulated as follows:

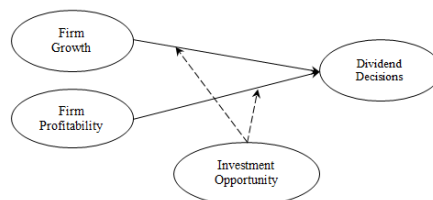


Fig.3. Theoretical Framework

3. Methods

3.1 The measurement of investor opportunity set (IOS)

This research uses a total investment growth to measure the variable of investment opportunity set (IOS). The calculation formula from IOS is as follows:

$$IOS_{t,i} = \frac{(Total\ Investment)_{t,i} - (Total\ Investment)_{t+1,i}}{(Total\ Investment)_{t-1,i}}$$

The IOS measurement proxy is very appropriate. Because if the company has high investment growth, the meaning of the company's investment opportunities in the future is also high and vice versa.

3.2 The measurement of profitability, firm growth, and dividend policy

The variable of profitability of the firms in this study is proxied by the level of Return On Equity (ROE) owned by the company. While the company's growth is measured using the following formula:

$$Firm\ Growth_{t,i} = \frac{(Sales)_{t,i} - (Sales)_{t+1,i}}{(Sales)_{t-1,i}}$$

Then the dividend decision variable is proxied by the dividend payout ratio (DPR). The formula is as follows:

$$DPR_{t,i} = \frac{(Retained\ Earnings)_{t,i}}{(Net\ Income)_{t,i}}$$

a) Sample

The sample of this study is the companies that are listed on the Indonesia Stock Exchange (IDX) from 2010 to 2019. The total number of manufacturing companies in that year was 1,111 companies. Of all these manufacturing companies, each year companies that distribute dividends will be chosen every year.

Conversely, companies that do not distribute dividends every year will be removed from the research sample. The total number of companies that were omitted or deleted from the research sample because they did not distribute dividends regularly amounted to 722. So, the entire research sample used in the study are 389 firms.

b) Data analysis

This study uses the Moderated Regression Analysis (MRA) method to facilitate the testing of IOS moderation effects. The analysis model is as follows:

$$DPR_{t,i} = \beta_1 + \beta_2 \cdot ROE_{t,i} + \varepsilon_{i,t} \quad (Eq. 1)$$

$$DPR_{t,i} = \beta_3 + \beta_4 \cdot ROE_{t,i} + \beta_5 \cdot IOS_{t,i} + \beta_6 \cdot ROE_{t,i} * IOS_{t,i} + \varepsilon_{i,t} \quad (Eq. 2)$$

According to the analysing model of MRA, to find out the moderating effect of IOS on the model above, the value of R^2 from Equation.1 and Equation.2 will be compared. If R^2 of Equation.2 is greater than Equation.1, then the moderation effect can be proven. However, it remains to be noted that all variables have a significant value of <5%. The same thing applies to the IOS moderation effect testing model on the firms' growth relationship with the dividend decision below:

$$DPR_{t,i} = \beta_6 + \beta_7 \cdot SALES_{t,i} + \varepsilon_{t,i} \text{ (Eq. 3)}$$

$$DPR_{t,i} = \beta_8 + \beta_9 \cdot SALES_{t,i} + \beta_{10} \cdot IOS_{t,i} + \beta_{11} \cdot SALES_{t,i} * IOS_{t,i} + \varepsilon_{t,i} \text{ (Eq. 4)}$$

Besides using the method of comparing R^2 values. In the process of proving the moderating effect, this study also introduced the Chow-test. This Chow-test mechanism will compare the *residual sum square* (RSS) of the regression model with high IOS samples, low IOS and models with the whole sample. The calculation formula is as follows:

$$F_{\text{chow-test}} = \frac{(RSS_{\text{pooled}}(RSS_{\text{highIOS}} - RSS_{\text{lowIOS}}))/k}{(RSS_{\text{highIOS}} + RSS_{\text{lowIOS}})/(n - 2k)}$$

Where:

RSS_{pooled} = sum square residual of all sample

RSS_{highIOS} = sum square residual of high IOS

RSS_{lowIOS} = sum square residual of low IOS

n = total sample

k = total variable

If the value of $F_{\text{chow-test}} > F_{\text{table}}$, it means that the variable of IOS is significantly moderated the relation of either firms' growth to dividend policy, and firms' profitability to dividend policy.

4. Results And Discussion

Table.1 bellows describe the data of the sample. As mentioned above, that is research used by listed companies from 2010 to 2017. As shown in Table.1, that the total companies that distribute dividends from 2010 to 2017 are 389 companies. In the table, the distribution is also taken annually with complete variables being examined. What's interesting about the description of the data, this study found that the average of the dividend payout ratio (DPR) variable in each year has the same average number. It means that the total dividend distributed by companies in Indonesia if measured using the DPR ratio is stable every year.

In contrast to the explanation in Figure.2 which measures the total dividend from the nominal value which tends to increase every year exponentially. Besides, the average value of the company's growth variables and company profitability also shows the same phenomenon. The values of these two variables show an average that is not much different each year. Notably, it is an interesting phenomenon that occurred in Indonesia.

Table.1 The Description of Data Sample

	Number of Firms	Dividend Pay Out Ratio	Firms' Profitability	Firms' Growth
2010	35	0.51	0.25	0.14
2011	51	0.52	0.22	0.18
2012	52	0.56	0.24	0.15
2013	45	0.52	0.24	0.24
2014	52	0.55	0.19	0.19
2015	41	0.54	0.19	0.19
2016	53	0.57	0.19	0.19
2017	60	0.57	0.16	0.16
2018	62	0.56	0.15	0.17
2019	61	0.57	0.16	0.17
Total	512	5.47	1.98	1.76

Figure.3 below describes the correlation of the data of the firms' growth rate, firms' profitability, and the dividend level as measured by the dividend payout ratio (DPR) ratio. This figure also shows how the pattern of the relationship between company growth and dividend decisions and profitability of the company with dividend decisions. Implicitly, the figure shows a pattern of positive and negative linear relationships for the firms' profitability and firms' growth in the relationship to dividend policy.

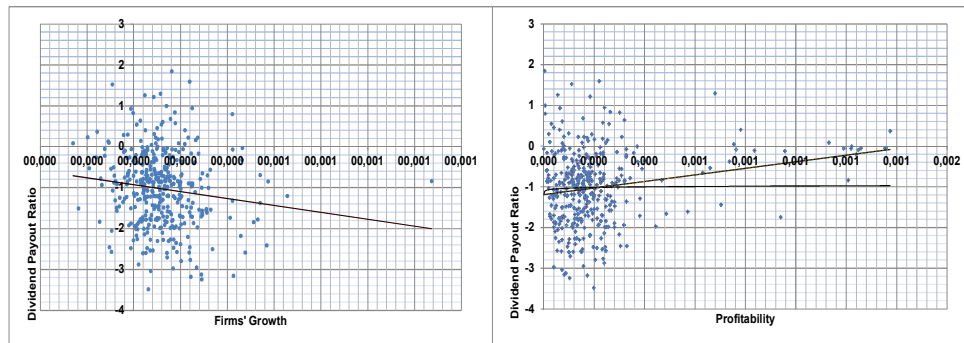


Fig.3. The Description of The Variable

However, if observed more closely, although showing a linear pattern both positive and negative, it has a relatively large deviation. Might be, it can be minimized by introducing moderating variables in the model. Therefore, it is necessary to test statistically to ensure the significance of both patterns. Table.2 below shows the results of these statistical tests.

Table.2 The Result of Statistical Test

	Eq (1) DPR	Eq (2) DPR	Eq (3) DPR	Eq (4) DPR
<i>Cons</i>	0.47*** (10.55)	0.46*** (10.36)	-0.92*** (-15.78)	-0.90*** (-15.51)
<i>ROE</i>	0.34*** (2.30)	0.22*** (2.05)		

	Eq (1) DPR	Eq (2) DPR	Eq (3) DPR	Eq (4) DPR
<i>IOS</i>		0.039** (1.59)		-0.07*** (-2.46)
<i>ROE*IOS</i>		-0.33*** (-3.09)		
<i>SALESGROWTH</i>			-0.84*** (-2.67)	-1.05*** (-3.17)
<i>SALESGROWTH*IOS</i>				0.45*** (2.30)
<i>F Statistic</i>	5.31***	6.43***	7.14***	4.51***
<i>Adj R²</i>	0.01	0.04	0.01	0.02

***significant at 5%, **significant at 10%

Based on Table.2, all hypotheses from this study are supported and statistically proven. Hypothesis 1 stating that the level of firms' profitability has a positive effect on the dividend decisions is statistically supported by evidence of t-value greater than the t-table (2.30 > 1.96). Hypothesis 2 is also the case, the growth rate of the firm has a negative effect on the dividend decisions as evidenced by the t- value of -2.67 (> 1.96). Next, hypothesis 3 is related to testing the moderating variable, based on Table.2 the hypothesis is proven. It is indicated by the significance value of the interaction variable in it, and the R² value of Eq.2 is higher than R² of Eq.1 (0.04 > 0.01). Likewise, with hypothesis 4, the R² value of Eq.4 is higher than the R² of Eq.3 (0.02 > 0.01). Evidence of the correctness of the IOS moderation effect can also be proven by the Chow-test method, below is the result of the calculation.

$$F_{\text{chow-test}} = \frac{298.91(122.40 - 175.30)/2}{(122.40 + 175.30)/(389 - 2.2)} = -10.224 \text{ (Eq. 5)}$$

$$F_{\text{chow-test}} = \frac{306.38(172.44 - 126.43)/2}{(172.44 + 126.43)/(389 - 2.2)} = 9.079 \text{ (Eq. 6)}$$

Based on the calculation in Eq.5 which shows the F value of (-) 10.224 (> F table), it means that the IOS variable does negatively (weakening) moderate the positive relationship of company profitability with the company's dividend decisions. Likewise Eq.6, in this calculation the value of F is (+) 9,079, greater than (>) F table. It means that IOS does moderate positively (strengthen) the negative relationship between the growth of the company and the company's dividend decisions. As stated in the previous section, the use of the Chow-test is intended to strengthen and support the results proven by the MRA method.

5. Conclusions

Based on the results of the analysis carried out in this study in Table .2, Eq.5 and Eq.6, the research supports all hypotheses proposed in this study. The first hypothesis shows a positive and significant relationship between company profitability and dividend decisions. This hypothesis supports the signal theory which states that when companies distribute dividends,

companies want to show a positive signal to shareholders. The positive signal is in the form of a healthy company condition, which is indicated by the ability to generate high profitability. Then in the second hypothesis, this study found that company growth as measured by sales growth had a significant negative effect on dividend yields. Theoretically, this finding is acceptable, because when a company is growing, the company needs much money to fund the growth. So the company will tend to withhold profits rather than share it with shareholders.

The third and fourth hypotheses in this study indicate that IOS moderates both the relationship of profitability with dividend decisions and company growth with dividend decisions. Based on Table.2, the investment opportunity set weakens the positive relationship between company profitability and dividend decisions. This finding supports the clientele effect theory which states that in a firms several parties or clients have different interests. That is when a company is in a position of high profitability the company has a huge possibility to share these benefits in the form of dividends. However, when these conditions are faced with a condition of opening substantial investment opportunities in the future, the company will rethink to share these benefits in the form of dividends. Because on the other hand, several shareholders (client) want the company to take the opportunity to invest. On the one hand, this investment opportunity will benefit shareholders in the short term in the form of capital gains from the immediate rise in stock prices, and in the long run in the form of sustainable corporate value in the future. Clientele effect theory can also be used as an explanatory basis for the fourth hypothesis which shows that investment opportunity sets to strengthen the negative relationship of company growth with dividend decisions.

This research fills the gap of previous studies regarding the indirect effect of both the relationship between firms' profitability to dividend decisions and firms' growth to dividend decisions. Therefore, the theoretical model in this study becomes an answer of current inconsistencies finding of previous studies regarding the dividend decisions. The results of this study can be used as a practical reference for investors who like to look for investment returns through dividends. The results of the research can be used to assess which firms will distribute profits. For further analysis, this research suggests to testing the variables that influence the decision on dividends. Not only adding variables, but this study also indicates that the next researchers use different analytical approaches, as is the case in this study introducing IOS variables as moderating variables.

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