

# “The role of dividend yield as agency conflict determinant: case of Indonesia”

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# THE ROLE OF DIVIDEND YIELD AS AGENCY CONFLICT DETERMINANT: CASE OF INDONESIA

## Abstract

This study provides evidence about how stockholders control insiders using dividend policy to prevent overinvestment. This study observes the dividend yield, market risk, profitability, and growth opportunities of 155 public firms listed on the Indonesia Stock Exchange from 2010 to 2017. The dividend yield data were split into quartiles and categorized into the following areas: 1) firms with the lowest dividend yields, 2) firms with lower dividend yields, 3) firms with higher dividend yields, and 4) firms with the highest dividend yields. This study conducts multinomial regression for testing the hypotheses. The results confirm that systematic risk has an insignificant relationship with dividend policy, and profitability has a significant relationship with dividend policy. Consistent with agency theory in supporting free cash flow theory, this study finds that the agency problem exists for firms with high dividend yields relative to firms with low dividend yields in the context of Indonesian public firms. The systematic risk has an insignificant relationship with dividend policy, of which the study sample is limited. The findings also imply that stockholders tend to control insiders in case of overinvestment. Besides, this study also finds that market risk as a systematic risk is insignificant both for firms with high and low dividend yields.

**Keywords** yield, growth, profitability, risk, conflict, insiders, Indonesia

**JEL Classification** G32, G35, G41

## INTRODUCTION

The motivation for this study begins with the concept of agency relationships by Jensen and Meckling (1976). Based on this concept, their study refers to three basic assumptions: (1) firms are a black box, (2) principals and agents are utility maximizers, and (3) principals are outsiders. Jensen and Meckling (1976) refer to those assumptions as to the source of agency problems based on the following logic: (1) principals are uninformed about the process of how input becomes output, especially in terms of increasing profits and (2) agents act for their benefit instead of maximizing the wealth of principals.

The effective intermediary of the agency problem is dividends, although there is a cost (called agency cost), such as debt, that must be borne by the principals (Jensen, 1986). There are two popular roles of dividends in the finance literature: (1) they increase the wealth of principals and (2) they act as profit-creation signals. As dividends increase the wealth of principals (called stockholders), these individuals expect a higher return on investment (Jensen & Meckling, 1976; Easterbrook, 1984). The investment returns of principals (in the form of dividends) are normally taken from retained earnings, which are referred to as free cash (Grullon et al., 2002; H. DeAngelo et al., 2006; Fairchild et al., 2014). As a signal, dividends convey information that reflects how firms convert input to output, i.e. create their profits (Easterbrook,

1984; Sant & Cowan, 1994). Wardhana & Tandelilin (2018) show that dividend play a significant role as a signal to stockholders in the Indonesian capital market.

Jensen and Meckling (1976) show two main factors in the agency problem: (1) profits and (2) growth opportunities. In the context of free cash flow, Fairchild et al. (2014) confirm that increased profits create high demand by stockholders, while growth opportunities have no relationship with the agency problem, and those results were verified by Budiarmo et al. (2019).

This study aims to confirm the agency problem of dividends between stockholders and insiders in the context of Indonesian public firms. This study finds that the case of firms with high dividend yields is consistent with free cash flow theory under agency theory relative to firms with low dividend yields. The next sections of this study are as follows: section 1 reviews the literature to develop the hypotheses, section 2 explains the research method of this study, section 3 discusses the results of the study, section 4 discusses the results of the study, and last section presents the conclusions.

## 1. LITERATURE REVIEW

Jensen and Meckling (1976) explain that free cash flow theory in the agency problem begins when most stockholders are uninformed because the firms they invest in operate as black boxes, and most insiders' decisions are divergent from the best interests of stockholders as principals. Jensen (1986) explains that as more firms grow beyond their optimal size and overwhelm competitors in the market, they will create copious free cash. According to Jensen (1986), the major conflict of interest between principals and agents is the distribution of free cash as a dividend because it will decrease the resources and power under the control of agents.

Firms with excess cash flow tend to have the agency problem due to the divergent interests of stockholders and managers. Firm managers have an incentive to make investments with negative net present value, rather than distribute the excess cash as a dividend to the stockholders (Jensen, 1986). Firms with greater excess cash flow lead managers to increase investment and reduce dividends (Yeo, 2018). Furthermore, Jensen (1986) and Frankfurter and Wood Jr. (2002) suggest that because free cash is excess funds, it is better to distribute it as dividends to stockholders than to use it on unprofitable investments or other firm expenditures. Ideally, if firms have large amounts of free cash, then these should be distributed as payouts, while external funds should be used for profitable investments (Myers, 2001).

The relationship between risk and dividends is rooted in the empirical literature (Hoberg & Prabhala,

2009). Firms set a long-run payout dividend based on the number of earnings and smoothed from year to year. Managers change the current dividends to adjust to the target when earnings are reasonably sustainable. This model explains that change in dividends as a function of firm's current earnings. Thus, managers concern about risk when making dividend policy (Lintner, 1965). Fama and French (2001) find that risk explains the disappearing of dividends between 1978 and 1999. The finding of Fama and French (2001) supports the finding of Hoberg and Prabhala (2009) which states that dividend policy is made conservatively. Brav et al. (2005) find that earnings have a negative relation with dividends which implies that managers still concern about risk on dividend decision. Following Jensen and Meckling (1976), this study emphasizes two main factors as sources of the agency problem: profits and growth opportunities.

Jensen (1986) and Frankfurter and Wood Jr. (2002) explain that context of free cash flow theory implies that increases in profits tend to make stockholders demand high dividends to prevent insiders from making unprofitable investments. The previous study of Nissimand Ziv (2001) confirms that the distribution of free cash as dividends to stockholders increases over time when firms are profitable. Confirming this result, Jensen et al. (1992), Fama and French (2001), and Longinidis and Symeonidis (2013) also confirm that firms with increasing profitability also significantly increase their dividend payments to stockholders. Budiarmo and Pontoh (2018) find that profitability is significant on dividend policy, specifically for firms with ownership that contains a single institution, a single individual,

and the public. The study by Budiarmo et al. (2019) on Indonesian public firms from 2010 to 2016 also confirm that firms with higher profitability tend to increase dividend payments to stockholders significantly. Based on those explanations, this study hypothesizes that:

*H1: Profitability has significant effect on dividend yield.*

Following Jensen (1986) and Myers (2001), in the context of free cash flow theory, stockholders shall demand higher dividends if firms have high growth opportunities; in this case, insiders want to make divergent investment decisions in favor of projects with unknown present value, whether these are financed by debt or internal funds. The studies of Jensen et al. (1992), DeAngelo et al. (2006), and Ferris et al. (2006) confirm a significant negative relationship between growth opportunities and dividend policy. Conversely, the findings of Fairchild et al. (2014) in Thailand and Budiarmo et al. (2019) in Indonesia show an insignificant relationship between growth opportunities and dividend policy. There is slight evidence provided by Budiarmo (2019) for 241 Indonesian public firms from 2010 to 2015, suggesting that growth opportunities significantly increase the distribution of dividends, especially when controlling stockholders use their bargaining power as an advantage. Based on those explanations, this study hypothesizes that:

*H2: Growth opportunities have significant effect on dividend yield.*

This study includes risk as an external control variable for firm dividend policies. The study of Sant and Cowan (1994) finds that dividend omissions will increase the stock beta of CAPM, which means that omission announcements by firms will make stocks riskier. Conversely, the findings of Lee et al. (1993) and Li and Zhao (2008) confirm that the tendency of firms to pay dividends shall increase the systematic risk of firms in the capital market. In Indonesia, Budiarmo et al. (2019) confirm that systematic risk has an insignificant relationship with dividend policy. Based on those explanations, this study hypothesizes that:

*H3: Systematic risk has significant effect on dividend yield.*

## 2. RESEARCH METHOD

This study uses 155 firms listed on the Indonesia Stock Exchange from 2010 to 2017. This study selects the sample based on the following criteria: (1) firms should publish audited annual financial reports, (2) firms should not be delisted, (3) firms should not have negative book equities, (4) firms should pay dividends at least one year during the observed period, which means this study excludes all firms that are non-dividend payers, and (5) firms should not have many restatements in their financial reports. This study conducts multinomial regression for testing the hypotheses with the following equation:

$$DY = \alpha + \beta MR + \beta MBV + \beta ROE + \varepsilon. \quad (1)$$

The dependent variable of this study is dividend policy, which is measured by dividend yield (DY), as calculated by reported dividend at the end of the year divided by closing stock price at the end of the year. Furthermore, this study calculates the average dividend yield of each firm and splits the data into quartiles. The results show that 25% of the data (Q1) is 0.7370, 50% of the data (Q2), or the median is 1.7372, and 75% of the data (Q3) is 2.9005. Based on quartiles, this study categorizes the dividend yield as follows: (1) the area below Q1 contains firms with the lowest dividend yields, or A4, (2) the area above Q1 and below Q2 contains firms with lower dividend yields, or A3, (3) the area above Q2 and below Q3 contains firms with higher dividend yields, or A2, and (4) the area above Q3 contains firms with the highest dividend yields, or A1.

The independent variables are stock beta, which reflects systematic risk, return on equity, which reflects profitability, and market to book, which reflects growth opportunities. The measurements of independent variables are as follows:

- Stock beta ( $\beta$ ). This study follows Fama and French (1993) in estimating the stock beta or systematic risk with the following equation:

$$R_{it} - RF_t = \alpha + \beta(RM_t - RF_t) + \varepsilon_{it}; \quad (2)$$

- $R_{it}$  is stock returns,  $RM_t$  is market returns drawn from the Indonesia Stock Exchange and Yahoo Finance, and  $RF_t$  is the risk-free rate drawn from the Central Bank of Indonesia;
- Return on equity (ROE). This study calculates this ratio as current profit over total equity;
- Return to book (MBV). Following Fama and French (1992) and Fama and French (2001), this study calculates this ratio as total assets minus the book value of total equity plus market equity (shares outstanding times closing share price at the end of year), all divided by the book value of total assets.

### 3. RESULTS

Table 1 presents the mean dividend yield, stock beta ( $\beta$ ), MBV, and ROE based on all data and areas.

**Table 1.** Mean of variables

| Variables  | 2010  | 2011 | 2012 | 2013 | 2014 | 2015  | 2016  | 2017  |
|------------|-------|------|------|------|------|-------|-------|-------|
| <b>All</b> |       |      |      |      |      |       |       |       |
| DY         | 2.65  | 2.66 | 2.28 | 2.05 | 0.92 | 1.85  | 1.94  | 2.17  |
| B          | 0.91  | 0.80 | 0.73 | 0.85 | 0.58 | 0.79  | 0.48  | 0.27  |
| MBV        | 1.93  | 1.85 | 2.00 | 1.91 | 2.40 | 1.61  | 1.86  | 1.84  |
| ROE        | 0.11  | 0.17 | 0.16 | 0.12 | 0.11 | 0.05  | 0.08  | 0.52  |
| <b>A1</b>  |       |      |      |      |      |       |       |       |
| DY         | 5.47  | 4.98 | 5.02 | 4.16 | 1.83 | 4.62  | 4.55  | 4.70  |
| B          | 0.86  | 0.61 | 0.46 | 0.73 | 0.24 | 0.49  | 0.97  | -0.01 |
| MBV        | 2.00  | 2.05 | 2.21 | 2.28 | 2.32 | 1.76  | 1.98  | 2.05  |
| ROE        | -0.01 | 0.25 | 0.21 | 0.18 | 0.18 | 0.14  | 0.16  | 0.12  |
| <b>A2</b>  |       |      |      |      |      |       |       |       |
| DY         | 3.26  | 3.18 | 2.47 | 2.67 | 1.29 | 1.88  | 1.96  | 2.10  |
| B          | 1.05  | 0.79 | 0.82 | 0.85 | 0.97 | 0.70  | 0.60  | 0.38  |
| MBV        | 2.47  | 2.34 | 2.47 | 2.68 | 4.50 | 2.21  | 1.99  | 2.16  |
| ROE        | 0.24  | 0.23 | 0.22 | 0.19 | 0.19 | 0.13  | 0.15  | 0.18  |
| <b>A3</b>  |       |      |      |      |      |       |       |       |
| DY         | 1.38  | 1.90 | 1.18 | 1.22 | 0.44 | 0.85  | 1.06  | 1.52  |
| B          | 1.02  | 1.00 | 0.84 | 1.04 | 1.00 | 0.91  | 0.29  | 0.07  |
| MBV        | 1.75  | 1.70 | 1.91 | 1.44 | 1.43 | 1.27  | 1.88  | 1.44  |
| ROE        | 0.19  | 0.16 | 0.14 | 0.08 | 0.05 | 0.03  | 0.06  | 1.73  |
| <b>A4</b>  |       |      |      |      |      |       |       |       |
| DY         | 0.50  | 0.56 | 0.46 | 0.15 | 0.11 | 0.09  | 0.21  | 0.38  |
| B          | 0.70  | 0.81 | 0.77 | 0.80 | 0.10 | 1.06  | 0.05  | 0.64  |
| MBV        | 1.45  | 1.28 | 1.37 | 1.22 | 1.27 | 1.16  | 1.57  | 1.72  |
| ROE        | 0.03  | 0.06 | 0.07 | 0.04 | 0.02 | -0.11 | -0.03 | 0.03  |

These results indicate that Indonesian firms tend to increase dividend yield over those variables if

they have low MBV. Confirming this phenomenon, this study continues to investigate the data after splitting it into four areas. Except for 2014, based on Table 1, Figure 1 shows that mean of all data describes dividend yields are higher than stock beta, MBV, and ROE.

Figure 2 describes area A1 for firms with the highest dividend yield. In this area, the trend line of dividend yield shows that firms tend to decrease dividends when they have more growth opportunities. Figure 2 also shows that the dividend yield of firms in A1 is above the stock beta and profitability.

Figure 3 describes area A2 for firms with higher dividend yields. The dividend yield of firms for this area is random. The trend line shows that the dividend yields from 2010 and 2011 are above the growth opportunities but tend to be equal to or below the growth opportunities from 2012 to 2017. Similar to area A1, Figure 3 also shows that the dividend yield of A2 is still above the stock beta and profitability.

Figure 4 describes area A3 for firms with lower dividend yields. The firms in this area tend to have dividend yields below their growth opportunities except for 2011 and 2017. Moreover, the points of 2013, 2014, and 2015 show that dividend yields are equal to or below the stock beta, which indicates that the dividend policies of those firms in this area are riskier due to investor reactions. Except for 2017, the dividend yield for firms in this area is similar to that in A1 and A2.

Figure 5 describes area A4 for firms with the lowest dividend yields. The dividend yield of firms in this area is below growth opportunities. Dominantly, the trend line of stock beta is above dividend yield except for 2016, while the line of profitability is similar to that for A1 and A2.

Furthermore, this study compares each variable for each area. Figure 6 describes that firms in area A1 have the highest dividend yield. This result indicates that firms in this area have better dividend yields than firms in other areas.

Figure 7 describes that the stock beta for firms in area A3 is higher than that for other firms from

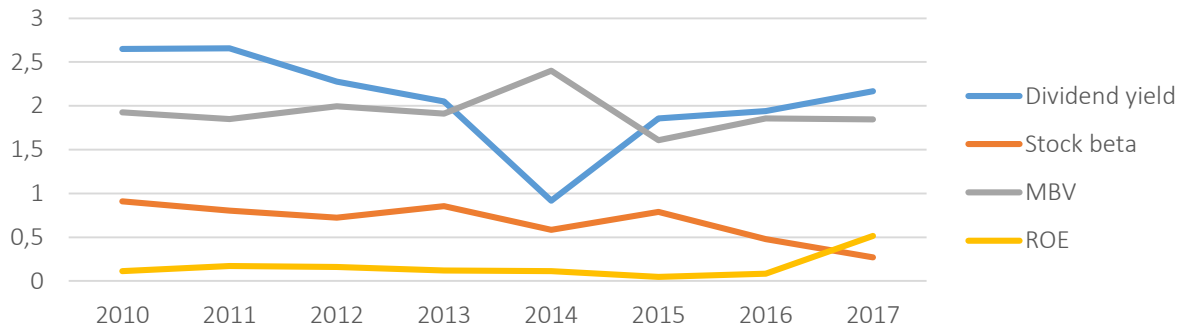


Figure 1. Mean (all data) of dividend yield, stock beta, MBV, and ROE

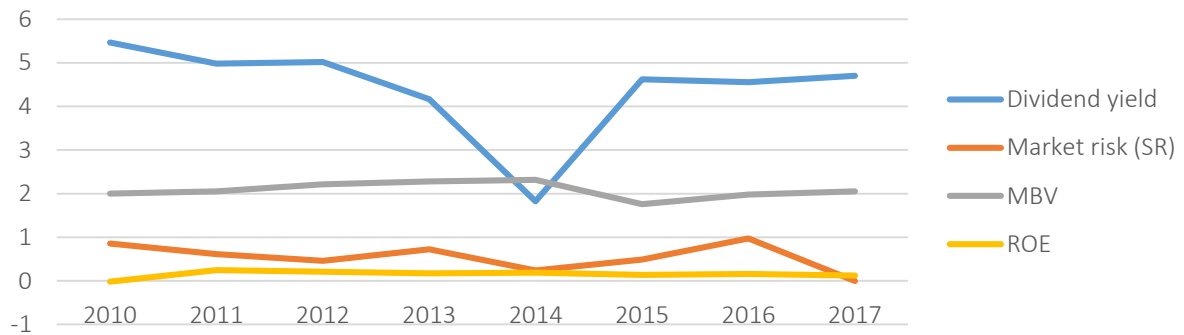


Figure 2. Mean (A1) of dividend yield, stock beta, MBV, and ROE

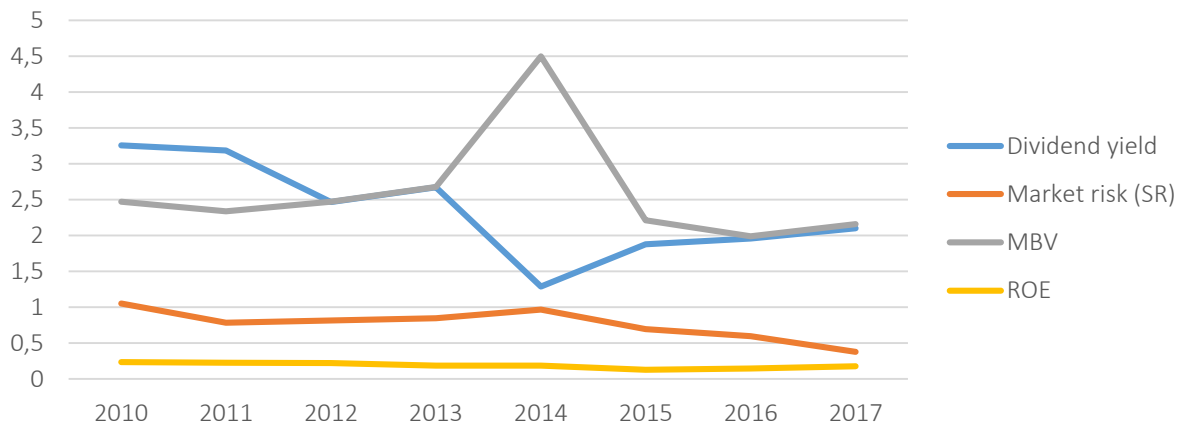


Figure 3. Mean (A2) of dividend yield, stock beta, MBV, and ROE

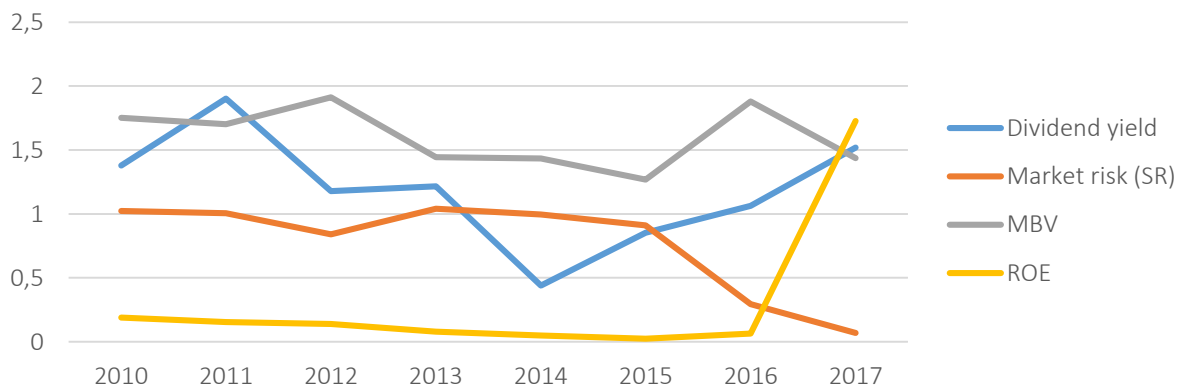


Figure 4. Mean (A3) of dividend yield, stock beta, MBV, and ROE



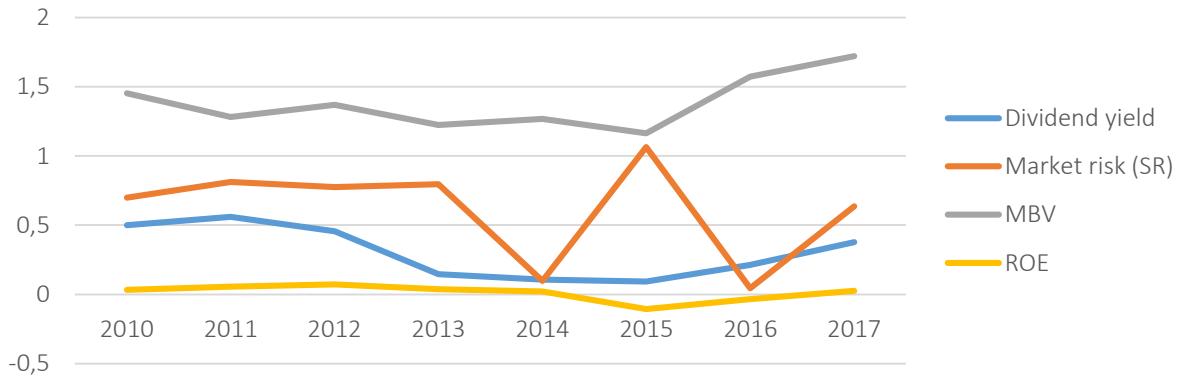


Figure 5. Mean (A4) of dividend yield, stock beta, MBV, and ROE

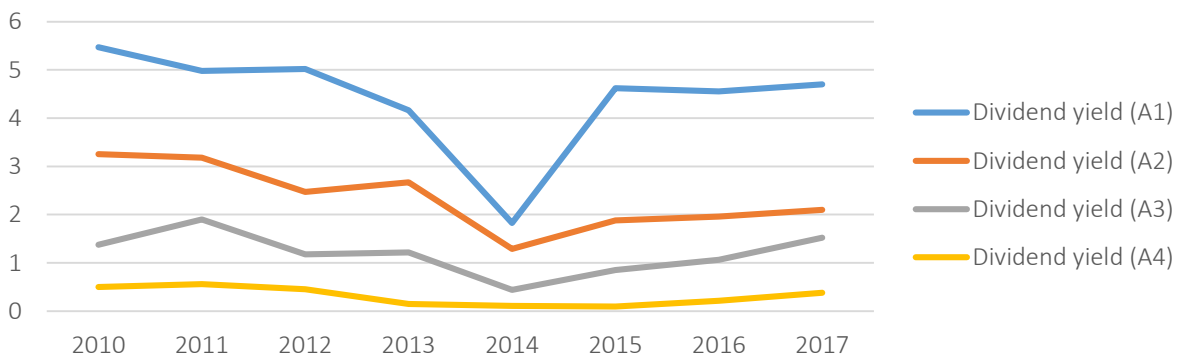


Figure 6. Comparison of mean of dividend yield between A1, A2, A3, and A4

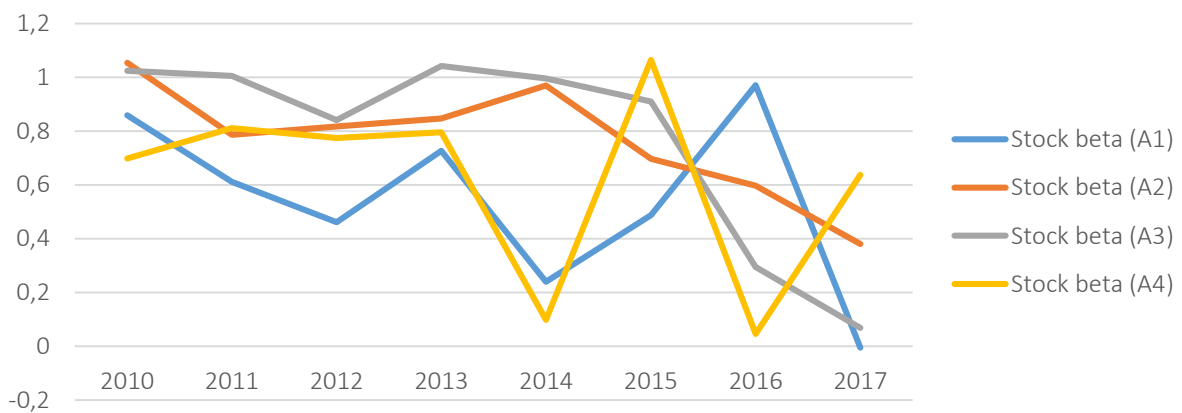


Figure 7. Comparison of mean of stock beta between A1, A2, A3, and A4

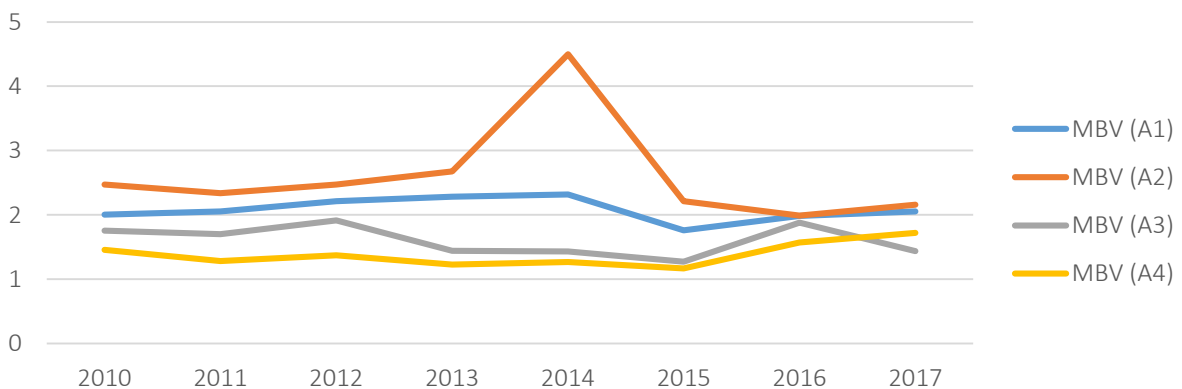
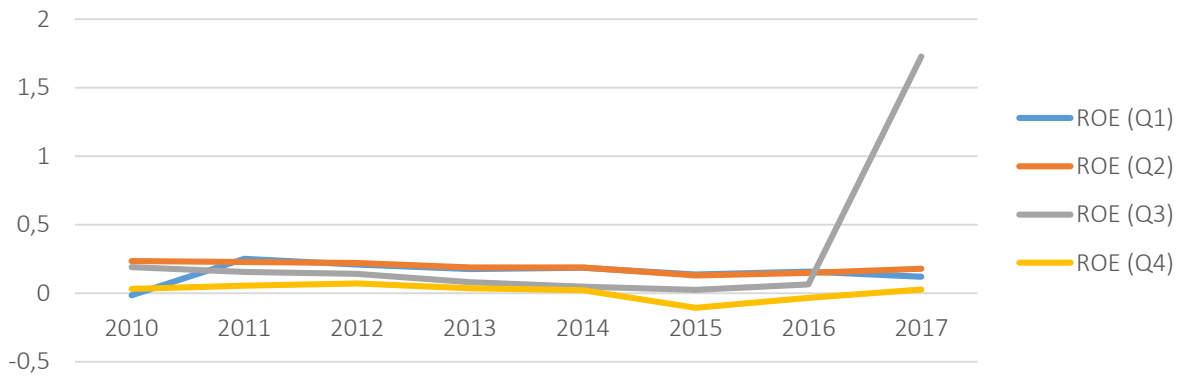


Figure 8. Comparison of mean of MBV between A1, A2, A3, and A4



**Figure 9.** Comparison of mean of ROE between A1, A2, A3, and A4

2010 to 2014 but declines from 2015 to 2017. For 2015, the stock beta for firms in area A4 is higher than that for firms in other areas. In 2016, the stock beta for firms in area A1 is the highest but becomes the lowest in 2017 compared with firms in other areas.

Figure 8 describes that firms in area A2 have higher MBV than firms in other areas. This result indicates that firms in this area have many growth opportunities.

Figure 9 describes that the profitability for firms in areas A1 and A2 is higher than that for firms in areas A3 and A4. Profitability in areas A1 and A2 fluctuates more, although on average, firms in area A2 tend to have higher profitability than firms in area A1.

This study runs the multinomial regressions as further analysis to confirm the above-mentioned phenomenon. In the first step, this study tests the

degree of fit for the regression model. This study finds that the Chi-square of the model is 3347.376, and it is insignificant at 0.05, which means that the model of regressions fits. In the second step, this study runs the regressions for testing the hypotheses.

#### 4. DISCUSSION

Table 2 shows the results of regressions relative to firms with the lowest dividend yield (A4). The result of firms with the highest dividend yield (A1), firms with higher dividend yield (A2), and firms with lower dividend yield (A3) show that stock beta ( $\beta$ ) is insignificant on dividend yield, which indicates that firms in these areas are not risky. Based on those findings, this study is inconsistent with the findings of Lee et al. (1993), Sant and Cowan (1994), and Li and Zhao (2008). In the context of Indonesian public firms, the findings of this study support the finding of Budiarmo et al. (2019) who

**Table 2.** Results of multinomial regressions

| Categories (area)                          | Variables  | Coefficients |
|--|------------|--------------|
| Firms with the highest dividend yield (A1) | Intercept  | -0.451       |
|  | Stock beta | -0.028       |
|  | MBV        | 0.148**      |
|  | ROE        | 2.413***     |
| Firms with higher dividend yield (A2)      | Intercept  | -0.509       |
|  | Stock beta | 0.034        |
|  | MBV        | 0.175***     |
|  | ROE        | 2.456***     |
| Firms with lower dividend yield (A3)       | Intercept  | -0.265       |
|  | Stock beta | 0.049        |
|  | MBV        | 0.023        |
|  | ROE        | 2.487***     |

Notes: The reference category is firms with the lowest dividend yield (A4). \*, \*\*, and \*\*\* are significant at 0.10, 0.05, and 0.01, respectively. The Pseudo R-square is 0.075.



confirm that systematic risk has an insignificant relationship with dividend policy.

Table 2 shows that MBV is positive and significant on dividend yield over firms with the highest dividend yield (A1) relative to firms with the lowest dividend yield (A4), which indicates that stockholders tend to demand high dividends, while firms in this area have more growth opportunities. Similarly, firms with higher dividend yield (A2) also show the same result, while firms with lower dividend yield (A3) show insignificant results on MBV. The result of this study for MBV is consistent with the findings of Jensen and Meckling (1976), Jensen (1986), Myers (2001), and Budiarmo (2019) in the context of free cash flow theory, which indicates that firms in A1 and A2 tend to have the agency problem. However, the result on A3 supports the findings of Fairchild et al. (2014) and Budiarmo et al. (2019), which indicates that firms in this area tend not to have an internal conflict. Overall, in the context of Indonesian public firms, the findings of this study are inconsistent with the findings of Jensen et al. (1992), DeAngelo et al. (2006), and Ferris et al. (2006).

Table 2 shows that ROE is positive and significant on dividend yield over firms with the highest dividend yield (A1), firms with higher dividend yield (A2), and firms with lower dividend yield (A3) relative to firms with the lowest dividend yield (A4), which means that those firms should increase dividend distributions as they have increased profitability. Similar to the results of MBV, the significant profitability of both firms confirms that the circumstances of firms in areas A1 and A2 show a tendency toward the agency problem. The finding of this study on profitability supports the findings of Jensen et al. (1992), Fama and French (2001), Nissim and Ziv (2001), Longinidis and Symeonidis (2013), Budiarmo and Pontoh (2018), and Budiarmo et al. (2019). Consistent with free cash flow theory, the findings of this study support the findings of Jensen and Meckling (1976), Jensen (1986), and Frankfurter and Wood Jr. (2002). Consistently, the finding of this study is also in line with Myers (2001) who suggests that free cash should be distributed to stockholders rather than reinvested. In contrast, the finding on firms with lower dividend yield (A3) shows that firms in this area do not suffer from agency conflict.

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## CONCLUSION

This study starts from the parsimony concept of the agency relationship and emphasizes dividends as the main source of the agency problem. To support the result, this study includes growth opportunities as another variable that also triggers the agency problem. The result indicates that the majority of Indonesian public firms are not risky. Moreover, firms with high dividend yield tend to have agency conflict related to free cash. Firms with high dividend yield, consistent with free cash flow theory, experience the agency problem relative to firms with low dividend yield. Thus, this result is in line with free cash flow theory. The high-dividend firm distributes the free cash as dividends to achieve agency control instead of wasting the funds on negative NPV projects.

Further studies should address the relationship between dividend policy and firm maturity. The mature firm with high profitability tends to have an overinvestment problem as a feature of the agency problem due to free cash flow. Moreover, the model of this study can be used for countries with the same characteristics as Indonesia for more empirical evidence.

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