

THE IMPACT OF DEBT POLICY, PROFITABILITY, AND LIQUIDITY ON DIVIDEND POLICY OF THE MANUFACTURING FIRMS LISTED IN INDONESIA STOCK EXCHANGE

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ABSTRACT

The dividend is a device for controlling shareholders to enrich themselves by transferring wealth coming from the debt holders. This study intends to prove that wealth transfer does not exist in manufacturing public industry by testing the impact of debt policy on dividend policy. This research also uses profitability and liquidity as the control variable. The research population is manufacturing firms. The members of sample are taken from the population members by stratified random sampling method. The study uses the logistic regression model as data analysis method. This study concludes that debt policy has a negative impact on the firm probability to pay dividend. It means that wealth transfer from debt holders to shareholders is not available in this industry. Profitability and firm liquidity acting as the control variable have a positive impact on firm probability to pay dividend

Keywords: Dividend policy, debt policy, wealth transfer.

INTRODUCTION

Dividend policy is one kind of firm policy besides investment policy and debt policy (Kaaro, 2003). The dividend policy is the decisions made by firms about cash distribution to shareholders, how much cash to distribute, and by what means the cash should be distributed (Gitman and Zutter, 2012:561). Corporation pays dividend to reward existing shareholders because they put their money at risk in corporation (Black, 1976).

As the controller of the firm, the shareholders are expected to choose investment and financial decision to maximize their own wealth. They try to transfer wealth from bondholders by choosing policy increasing the risk of existing debt. They can payout the proceeds of new issue of senior debt as dividend so that this action increases the risk of outstanding debt. If debt holders do not anticipate these payments, wealth will be transferred from them to stockholders (Kalay, 1982). Moreover, controlling shareholders can increase the risk of existing debt by inducing managers to invest at risk ventures so that they do not give away wealth to debt holders. Riskier ventures enrich shareholders at the expense of creditors (Easterbrook, 1984). If the investment is successful, the investment yields large returns and the shareholders must be capturing most of gain. If the investment conducted by managers does not succeed, bondholders bear the consequence (Harris & Raviv, 1991).

Some previous researchers show that the firms use debt to finance dividend payment so that a positive impact of debt policy on dividend policy exists (see Sugeng, 2009; Kouki & Guizani, 2009; Hadiano & Herlina, 2010). These researchers support existence of wealth transfer proposed by Kalay (1982). In fact, the impact of debt policy on dividend policy does not always show the positive sign but the negative sign. The negative impact of debt policy on dividend policy can also occur. The researchers confirming this evidence are Al-Malkawi

(2007), Al-Kuwari (2009), Ramli (2010), Harada & Nguyen (2011), Al-Kuwari (2012). This negative impact of debt policy on dividend policy shows that the existence of debt restriction on dividend proposed by Black (1976) and Easterbrook (1984) exists.

Because the results of previous research are not consistent, this research is conducted. The main purpose of this research is to prove the existence of wealth transfer at public listed companies in Indonesia Stock Exchange does not exist by testing the impact of debt policy on dividend policy. In other word, this research wants to prove the theory of debt restriction on dividend proposed by Black (1976) and Easterbrook (1984). This research also uses profitability and liquidity as the control variable. These two variables exist to guarantee that other conflict between majority shareholder and minority shareholder is not available when firm tries to protect the interest of debt holders.

This research uses manufacturing firms listed in Indonesia Stock Exchange because of two reasons. Firstly, manufacturing industry has the large number of the firms and takes position as the second largest number after the service industry in Indonesian Stock Exchange except for 2009 (see Table 1). The large number of the firms enables theory generalization to do.

Table 1. The number of listed firm in Indonesian Stock Exchange in 2006-2012

| <i>Name of Industry</i> | <i>Year</i> | | | | | | |
|--|-------------|------|------|------|------|------|------|
| | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 |
| Primary Industry (Agriculture & Mining Industry) | 21 | 29 | 36 | 38 | 34 | 48 | 54 |
| Secondary Industry (Manufacturing Industry) | 133 | 135 | 134 | 131 | 132 | 135 | 135 |
| Tertiary Industry (Service Industry) | 180 | 219 | 226 | 129 | 254 | 257 | 270 |
| Total | 334 | 383 | 396 | 398 | 420 | 440 | 459 |

Notes: This table is made of the observation on data coming from IDX Fact Book of 2007-2013. This table shows the comparison of the number of existing firms in primary, secondary, and tertiary industry.

Secondly, the manufacturing firms have similar production process and homogeneous accounting record. These two characteristics can differ themselves from the firm characteristics in other industries such as primary industry consisting of two industries: agriculture and mining industry and tertiary industry consisting of five industries: infrastructure, utility, and transportation industry, property, real estate and building construction industry, finance industry and trade, service, and investment industry.

CONCEPTUAL FRAMEWORK AND HYPOTHESIS DEVELOPMENT

Debt Policy and Dividend Policy

Debt restriction of dividend theory states that to overcome the behavior of the shareholders who control the firms in enriching themselves by inducing managers to act as risk lovers at the expense of creditors, creditors try to control it in advance through debt indentures (Easterbrook, 1984). Debt indentures will always limit the dividends that companies can pay (Black, 1976). These statements are confirmed by Al-Malkawi (2007), Ramli (2010), Harada & Nguyen (2011) and Al-Kuwari (2012) who show that debt policy has a negative impact on

dividend policy. Based on these explanations, the first hypothesis can be formulated as follows.

H1: Debt policy has a negative impact on firm probability to pay dividend.

Profitability and Dividend Policy

Profitability measures the business performance. Profitability is defined as the ability of firm to generate profit (Al-Najjar & Hussainey, 2009). Signaling theory states that the firms with good financial prospect can convey the information to uninformed investor by paying the dividend. Dividends are costly to dividend-paying firms because of two reasons. Firstly, the firms must generate enough cash to support a permanently high dividend payout. Secondly, paying cash out prevents the firms to finance positive-NPV investment opportunity. Paying dividend action cannot be mimicked by the weaker firms because they are less profitable so that these firms do not generate enough cash (Megginson, 1997: 378).

In other word, to deliver a good financial prospect to market participants, the firms with greater amount of profits tend to pay more dividends. The statement is confirmed by study of Al-Malkawi (2007), Al-Kuwari (2009), Al-Najjar & Hussainey (2009), Abdelsalam, El-Masry, Elsegini (2008). Their studies show that profitability has a positive impact on dividend policy. Based on these explanations, the second hypothesis can be formulated as follows.

H2: Profitability has a positive impact on firm probability to pay dividend.

Liquidity and Dividend Policy

Liquidity is firm ability to fulfill short-term debt that will come due. It also provides early sign of cash flow problem and impending business failure (Gitman & Zutter, 2012). Liquidity is one of the essential variables affecting the firm dividend payment. If a firm has enough cash flows, the firm will distribute cash dividends (Kumar & Wahed, 2015). This statement is confirmed by study of Sanjari & Zarei (2014), Kumar & Wahed (2015), Tabari & Shirazi (2015). Their studies show that liquidity has a positive impact on dividend policy. Based on these explanations, the third hypothesis can be formulated as follows.

H3: Liquidity has a positive impact on firm probability to pay dividend.

RESEARCH METHOD

Type of Research

The type of this research is causal research. According to Zikmund, Babin, Carr, and Griffin (2010:57), causal research seeks to identify cause-and-effect relationship.

Variable Operationalization

Variable is empirical assessment of a concept (Zikmund, et al., 2010:42). In this research, two types of variables are used. They are dependent variable and independent variable. The dividend policy acts as the dependent variable. The independent variables used consist of two types of variables: main variable and control variable. Debt policy acts as main variable whereas profitability and liquidity act as control variable.

- a. Dividend policy (DIV) is measured by dummy variable: one (1) is given for every firm that pays dividend, and zero (0) is given for every firm that does not pay dividend.
- b. Debt policy is measured by debt ratio at the end of the year (DAR). Debt ratio = total debt/total assets.

- c. Profitability is measured by earning per share at the end of the year (EPS).
- d. Liquidity is measured by current ratio at the end of the year (CR).

Population, Sample, and Sampling Method

The population in the research is the manufacturing firms in Indonesia Stock Exchange in 2006-2012. The consistency of the available firms is essential because many firms just appear, do not exist anymore, or move into other sectors during this period. Because of these three reasons, the sampling frame is essential. According to Zikmund, et al. (2010:393), sampling frame is a list of the elements from which the sample may be drawn. It is also called the working population because these units will eventually provide units involved in analysis. Based on the conducted calculation, the number of working population is 116 firms. Referring to Suliyanto (2009), the Slovin formula with 5% error to take firms as sample is used to determine the number of sample representing the number of population. The result based on Slovin formula calculation is 90 firms (rounded).

Referring to the information provided by IDX Fact Book (2013) stating that manufacturing firms can be classified into three subgroups: (1) basic industry and chemicals, (2) consumer good industry, (3) miscellaneous industry. This classification is based on Jakarta Stock Industrial Classification (JASICA). Because of this classification, the suitable sampling method used is stratified random sampling method. It confirms Zikmund, *et al.* (2010:400) stating that stratified random sampling is used when population has subgroups or strata. The information of firm number in working population and each stratum representing the working population can be seen in Table 2.

Table 2. The Number of Sample Calculation Representing The number of Working Population of Manufacturing Firms Listed in Indonesia Stock Exchange

| <i>Name of Strata</i> | <i>Number of Working Population</i> | <i>%</i> | <i>Number of firms for each stratum (rounded to the nearest number)</i> |
|------------------------------|-------------------------------------|----------|---|
| Basic Industry and Chemicals | 49 | 42.24 | 38 |
| Consumer Goods Industry | 30 | 25.86 | 23 |
| Miscellaneous Industry | 37 | 31.90 | 29 |
| Total | 116 | 100.00 | 90 |

After knowing the number of each stratum, the selection of firms used as sample is done based on simple random sampling (Zikmund, et al., 2010:395). To determine the name of firm chosen, random value is used. Microsoft Excel is used to generate random value as Hartono (2009) states. Based on random value generated, the name of firms chosen to be research sample can be seen in Appendix 1.

Data Collection Method

In this research, the archival method is used as the data collection method. According to Hartono (2009: 117), the archival method intends to get the secondary data. The secondary data used in this research come from Indonesia Capital Market Directory (ICMD) 2007-2013, the website of Indonesia Stock Exchange at www.idx.co.id where the annual reports of the listed firms are from.

Method of Data Analysis

This research employs the pooled data logistic regression model as method of data analysis. This model uses the maximum likelihood procedure. Maximum likelihood is used to maximize the likelihood that an event will occur (Hair, Black, Babin, & Anderson, 2010:322). In this research context, the event that will occur is the dividend payment event. Pooled data means the combination of time series data and cross-section data. By combining both of them, this research gives more informative data, more variability, less collinear among variables, more degree of freedom and more efficiency (Gujarati, 2003:636,637). The model can be seen in the equation one shown below.

$$DIV_{it} = \beta_0 + \beta_1 DAR_{it} + \beta_2 EPS_{it} + \beta_3 CR_{it} + e_{it} \dots\dots\dots (Eq.1)$$

Where: DIV = dummy variable of dividend policy; DAR = debt ratio of firm at the end of year t; EPS = earnings per share at the end of the year, CR = current ratio at the end of the year, t = time series unit, i = cross-section unit.

Maximum likelihood is used for large samples so that Z-statistic can be used to assess the significance impact of independent variables on the dependent variable (Widarjono, 2009:201). E-Views program provides not only Z-statistic value but also the probability value of Z-statistic. These values can be used to test each alternative research hypothesis (H1, H2, and H3). In this research, the significance level (α) used is 5%. If probability value of Z-statistic is less than 5%, the alternative hypothesis will be accepted, if probability value of Z-statistic is greater or equal to 5%, the alternative hypothesis will not be accepted.

The Assumption Tests of Logistic Regression Model

There are some assumptions of logistic model. Firstly, errors term of logistic model do not follow normality assumption (Hair, et al., 2010:317). To prove errors do not follow normality assumption, the Jarque-Berra test is conducted as the statistic test. The significance level (α) to test the normality of errors term is 5%. If the probability of Jarque-Berra statistic is larger than 5%, errors will be normally distributed, and vice versa.

Secondly, the variance of dichotomous variable is not constant so that the logistic regression model allows the presence of heteroskedasticity (Hair, et al., 2010:317). To prove that the existence of heteroskedasticity, Glesjer test is used. The significance level used to test heteroskedasticity is 5%. Heteroskedaticity occurs when absolute errors are related to at least one variable used. In other word, This condition will happen if at least one variable used in the model has the probability value that is less than 5%.

Thirdly, the logistic regression does not require linear relationship between the independent variables and forecasted probability of event based on dependent category (Hair, et al., 2010:319; Ghozali, 2011:336). To prove the linearity relationship between the probability to pay dividend and independent variables does not exist in this model, statistical test used is RAMSEY regression equation specification error. The significance level (α) used is 5%. If probability value of F-statistic is less than α , no linear relationship between probability and the independent variables will exist in the regression model and vice versa.

Fourthly, the absence of multicollinearity is essential to detect. According to Tabachnick & Fidel (2007), logistic regression is sensitive to extremely high correlations among predictor variables, signaled by exceedingly large standard errors for parameter estimates. According to Ghozali (2011), one of ways to detect muticollinearity is by seeing the variance inflation

factor (VIF) value. Multicollinearity problem will not be available in the model when VIF value of all predictor variables used is less than 10.

Finally, test of the goodness-of-fit model is essential to do. According to Ghozali (2011), Hosmer and Lemeshow statistic (H-L statistic) is one of tools to asses it. The expected result of this test is the data used support the logistic regression model so that Hosmer-Lemeshow statistic show insignificant test result. The significance level (α) used in this research is 5%. If the probability of H-L statistic is greater than α , the data used support the logistic regression model fit, and vice versa.

RESULTS AND DISCUSSION

Descriptive Statistics of Research Variables

Table 3 provides a summary of the descriptive statistics of all research variables. The mean of dummy of dividend policy (DIV) is 0.3889. Minimum value of DIV is 0 and the maximum value is 1. Two values indicate that there are two groups of the firm. The first group consists of the firms that do not distribute profits as dividend (DIV=0). The second group consists of the firms that pay dividend (DIV=1). The average of debt ratio is 1.0149. The minimum value of DAR is 0.07 whereas the its maximum value is 163.24. The mean of EPS is Rp490.5401 with IDR-26,192.29 as its minimum value and IDR 24,080.78 as its maximum value. Negative value of EPS shows there is a firm having a loss per share. The mean of current ratio (CR) is 215.9472%. The minimum value of CR is 0.40% whereas its maximum value is 5773.28%

Table 3. Descriptive Statistics of Research Variables

| <i>Variable</i> | <i>N</i> | <i>Minimum</i> | <i>Maximum</i> | <i>Mean</i> | <i>Std. Deviation</i> |
|--------------------|----------|----------------|----------------|-------------|-----------------------|
| DIV | 630 | .00 | 1.00 | 0.3889 | 0.48789 |
| DAR (decimal) | 630 | .07 | 163.24 | 1.0149 | 7.10310 |
| EPS (IDR) | 630 | -26192.29 | 24080.78 | 490.5401 | 2647.54475 |
| CR (%) | 630 | .40 | 5773.28 | 215.9472 | 296.74513 |
| Valid N (listwise) | 630 | | | | |

Source: Output of IBM SPSS

The Test Results of Logistic Regression Assumptions

The result of normality test and heteroskedasticity test

Table 4 provides the result of normality test and heteroskedasticity test. Based on empirical data test, the residuals of logistic regression model are not normally distributed (see Table 4 Panel A). This condition is confirmed because the probability value of Jarque-Berra statistic is less than significance level used. Heteroskedasticity also exists in this model (see Table 4 Panel B). This condition is confirmed because the absolute errors are related to debt policy (DAR). These two evidences support two assumptions of the logistic regression model.

Table 4. The Result of Normality Test and Heteroskedasticity Test

| <i>Panel A. The Result of Normality Test (Jarque-Berra Test)</i> | | | | |
|--|--------------------|--|--|--|
| <i>Description</i> | <i>Residual</i> | <i>Interpretation</i> | | |
| Jarque-Berra | 41.29348 | Errors do not follow the normal distribution because probability value of Jarque-Berra is less than 5% | | |
| Probability | 0.000000 | significant level. | | |
| <i>Panel B. The Result of Heteroskedasticity Test (Glesjer Test):</i> <i>ABSRES = f (C, DAR, EPS, CR)</i> | | | | |
| <i>Independent Variable</i> | <i>Coefficient</i> | <i>Prob.</i> | <i>Interpretation</i> | |
| C | 0.379062 | 0.0000 | This condition shows the absolute errors are significantly related to debt | |
| DAR | -0.003967 | 0.0012 | policy (DAR) (see the probability value of DAR that is greater than 5% | |
| EPS | -1.54E-06 | 0.6388 | significant level). This means the heteroskedasticity occurs in this | |
| CR | -2.73E-05 | 0.3606 | model. | |

Source: Output of E-Views.

The Result of linearity Test

Table 5 shows the test result of linearity relationship between forecasted firm probability to pay dividend (PROB_DIVF) and independent variables (DAR, EPS, CR). In this table, probability value of Chi-Square (1) is 0.0000. Because this probability value is less than 5%, no linearity relationship exists between DIVPROBF and the independent variables. It confirms the assumption of logistic regression model.

Table 5. Ramsey RESET Test

| F-statistic | 80.49468 | Prob. F(1,625) | 0.0000 | |
|-------------------------------|--------------------|---------------------|--------------------|--------------|
| Log likelihood ratio | 76.32298 | Prob. Chi-Square(1) | 0.0000 | |
| Test Equation: | | | | |
| Dependent Variable: PROB_DIVF | | | | |
| Method: Least Squares | | | | |
| Date: 07/01/16 Time: 17:46 | | | | |
| Sample: 1 630 | | | | |
| Included observations: 630 | | | | |
| <i>Variable</i> | <i>Coefficient</i> | <i>Std. Error</i> | <i>t-Statistic</i> | <i>Prob.</i> |
| C | 0.301579 | 0.007941 | 37.97860 | 0.0000 |
| DAR | -0.003215 | 0.000894 | -3.594490 | 0.0004 |
| EPS | 5.65E-05 | 3.12E-06 | 18.09379 | 0.0000 |
| CR | 0.000698 | 4.48E-05 | 15.57524 | 0.0000 |
| FITTED^2 | -0.517502 | 0.057680 | -8.971883 | 0.0000 |

Source: Output of E-Views

The Result of Multicollinearity Detection

Table 6 provides the VIF value of predictor or independent variables used. The VIF value of DAR, EPS and CR in this table are 1.003, 1.005, and 1.007, respectively. Because three values of VIF are less than 10 so that multicollinearity problem does not exist in this model.

Table 6. Multicollinearity Detection

| Predictor/independent variable | Collinearity Statistics | |
|--------------------------------|-------------------------|-------|
| | Tolerance | VIF |
| DAR | 0.997 | 1.003 |
| EPS | 0.995 | 1.005 |
| CR | 0.993 | 1.007 |

Source: Output of IBM SPSS

The Result of Goodness-of-fit Model Test

Table 7 shows the test result of the goodness-of-fit model. In this table, the probability value (Sig.) of Hosmer and Lemeshow statistic (H-L statistic) is 0.099. This value is greater than 5%. It means H-L statistic show insignificant test result so that the data support the fit of logistic regression model.

Table 7. The Test Result of Hosmer and Lemeshow Statistic

| Step | Chi-square | Df | Sig. |
|------|------------|----|-------|
| 1 | 13.410 | 8 | 0.099 |

Source: Output of IBM SPSS

The Result of Logistic Regression Model Estimation

Table 8 is the table showing the estimation result of logistic regression model that shows the impact of debt policy (DAR), profitability (ROA), and liquidity (CR) on the firm probability to pay dividend (DIV). In this table, DAR shows the negatif sign. On the other hand, EPS and CR show positif sign. The table also provides the probability value of z-statistic for DAR, ROA, dan CR. Furthermore, this probability value is used to test the hypotheses proposed in this research.

Table 8. The Result of Logistic Regression Model Estimation

Dependent Variable: DIV
 Method: ML - Binary Logit (Quadratic hill climbing)
 Date: 07/04/16 Time: 01:52
 Sample: 1 630
 Included observations: 630
 Convergence achieved after 7 iterations
 Covariance matrix computed using second derivatives

| Variable | Coefficient | Std. Error | z-Statistic | Prob. |
|-----------------------|-------------|-----------------------|-------------|-----------|
| C | 0.563892 | 0.376541 | 1.497559 | 0.1342 |
| DAR | -2.743914 | 0.512860 | -5.350222 | 0.0000 |
| EPS | 0.000297 | 8.38E-05 | 3.542633 | 0.0004 |
| CR | 0.001617 | 0.000786 | 2.059016 | 0.0395 |
| McFadden R-squared | 0.187729 | Mean dependent var | | 0.382540 |
| S.D. dependent var | 0.486393 | S.E. of regression | | 0.429910 |
| Akaike info criterion | 1.093496 | Sum squared resid | | 115.6991 |
| Schwarz criterion | 1.121723 | Log likelihood | | -340.4513 |
| Hannan-Quinn criter. | 1.104460 | Restr. log likelihood | | -419.1351 |
| LR statistic | 157.3676 | Avg. log likelihood | | -0.540399 |
| Prob(LR statistic) | 0.000000 | | | |
| Obs with Dep=0 | 389 | Total obs | | 630 |
| Obs with Dep=1 | 241 | | | |

Source: Output of E-Views

The Result of Hypothesis Test

The first hypothesis (H_1) states debt policy has a negative impact on firm probability to pay dividend. In Table 8, the estimation sign of DAR is negative and its probability is 0.0000. Because the probability of DAR is less than significance level of 5% and the estimation sign confirms the formulated hypothesis, the first hypothesis is accepted.

The second hypothesis (H_2) states the profitability has a positive impact on firm probability to pay dividend. In Table 8, the estimation sign of EPS is positive and its probability value is 0.0004. Because the probability of EPS is less than significance level of 5% and the estimation sign confirms the formulated hypothesis, the second hypothesis is accepted.

The third hypothesis (H_3) states liquidity has a negative impact on firm probability to pay dividend. In Table 8, the estimation sign of CR is positive and its probability value is 0.0395. Because the probability CR is less than significance level of 5% and the estimation sign confirms the formulated hypothesis, the third hypothesis is accepted.

DISCUSSION

The acceptance of the first hypothesis confirms debt restriction theory on dividend payment (Black, 1976; Easterbrook, 1984) and does not confirm the wealth transfer theory (Kalay, 1982). This research also confirms previous research evidence of Malkawi (2007), Ramli (2010), Harada & Nguyen (2011) and Al-Kuwari (2012). This indicates that the wealth transfer activity does not exist between shareholders who control the firms and debt holders who finance the firm. The controlling shareholders tend to commit to the debt indentures by not paying themselves the proceeds of new issue of senior debt as dividend and not doing the activity that can harm debt holders such as investing the money in risky ventures.

The acceptance of the second hypothesis confirms the signaling theory and the previous research conducted by Al-Malkawi (2007), Abdelsalam, El-Masry, Elsegini (2008), Al-Kuwari (2009), Al-Najjar & Hussainey (2009) showing that profitability has a positive impact on dividend policy. The acceptance of the third hypothesis confirms the previous research conducted by Sanjari & Zarei (2014), Tabari & Shirazi (2015) and Kumar & Wahed (2015) showing that liquidity has a positive impact on dividend policy.

The acceptance of the second and third hypothesis indicates a special guarantee that controlling shareholder are responsible for protecting the interest of the minority shareholders by having a good intention to pay dividend for them when firms are able to get positive profits and reach the high liquidity position.

MANAGERIAL IMPLICATION

There are two managerial implications related to this research. Firstly, debt holders can offer the money to the manufacturing firms if they need the funds to finance their investment activity. The controlling shareholders of firms can be trusted to minimize potential conflict relating to the interest of debt holders by committing to and obeying the debt indentures. Secondly, controlling shareholders can be trusted to overcome potential conflict related to minority shareholder interest by conducting dividend payment when the firm profitability and liquidity are high. Therefore, minority shareholders are able to buy firm stock at secondary market to get dividends as one component of their income besides capital gain.

CONCLUSION AND FUTURE RECOMMENDATION

Based on the result of tested hypotheses, this study concludes two things. Firstly, debt policy as the main variable has a negative impact on the firm probability to pay dividend. Secondly, profitability and liquidity as the control variable have a positive impact on firm probability to pay dividend.

Some recommendations addressed to next researchers to overcome the limitations of this research are as follows:

- Firstly, McFadden R-square in research model is only 0.187729. This low value of McFadden R-square indicates the variables used in this model are not able to explain dividend policy done by manufacturing firms yet. Based on this limitation, the next researchers can use institutional ownership, investment opportunity set, tangibility of asset, and firm size measured by market capitalization or total asset to be added into their own model.
- Secondly, the study only uses seven years to explain the variables affecting dividend policy. To overcome this limitation, the next researchers are suggested to extend observation period into 10 (ten) years so that the result of statistical test can capture the better evidence.
- Finally, the research uses only manufacturing firms as the research object. Using the non-financial firms is the possible suggestion to enlarge the scope of working population. It will help the next researchers to make a better generalization for the research result evidence.

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Appendix 1. The Firm Name List as the Sample of Research

| <i>No.</i> | <i>Industry</i> | <i>Code</i> | <i>Name of the firm</i> |
|------------|-----------------------------|-------------|---------------------------------------|
| 1. | Basic and Chemical Industry | AKKU | Alam Karya Unggul |
| 2. | Basic and Chemical Industry | AKPI | Argha Karya Prima Industri |
| 3. | Basic and Chemical Industry | ALMI | Alumindo Light Metal Industry |
| 4. | Basic and Chemical Industry | AMFG | Asahimas Flat Glass |
| 5. | Basic and Chemical Industry | APLI | Asiaplast Industries |
| 6. | Basic and Chemical Industry | ARNA | Arwana Citra Mulia |
| 7. | Basic and Chemical Industry | BRNA | Berlina |
| 8. | Basic and Chemical Industry | BRPT | Barito Pasific Timber |
| 9. | Basic and Chemical Industry | BTON | Betonjaya Manunggal |
| 10. | Basic and Chemical Industry | BUDI | Budi Acid Jaya |
| 11. | Basic and Chemical Industry | CPIN | Charoen Pokphand Indonesia |
| 12. | Basic and Chemical Industry | CTBN | Citra Turbindo |
| 13. | Basic and Chemical Industry | DPNS | Duta Pertiwi Nusantara |
| 14. | Basic and Chemical Industry | EKAD | Ekadharna Internasional |
| 15. | Basic and Chemical Industry | ETWA | Eterindo Wahanatama |
| 16. | Basic and Chemical Industry | FASW | Fajar Surya Wisesa |
| 17. | Basic and Chemical Industry | FPNI | Titan Kimia Nusantara |
| 18. | Basic and Chemical Industry | IGAR | Kageo Igar Jaya |
| 19. | Basic and Chemical Industry | INKP | Indah Kiat Pulp & Paper |
| 20. | Basic and Chemical Industry | INRU | Toba Pulp Lestari |
| 21. | Basic and Chemical Industry | INTP | Indocement Tunggal Perkasa |
| 22. | Basic and Chemical Industry | JKSW | Jakarta Kyoei Steel Works |
| 23. | Basic and Chemical Industry | JPFA | Japfa Comfeed Indonesia |
| 24. | Basic and Chemical Industry | LION | Lion Metal Works |
| 25. | Basic and Chemical Industry | LMSH | Lionmesh Prima |
| 26. | Basic and Chemical Industry | MAIN | Malindo Feedmill |
| 27. | Basic and Chemical Industry | MLIA | Mulia Industrindo |
| 28. | Basic and Chemical Industry | MYRX | Hanson International |
| 29. | Basic and Chemical Industry | SAIP | Surabaya Agung Industri Pulp & Kertas |
| 30. | Basic and Chemical Industry | SIMA | Siwani Makmur |
| 31. | Basic and Chemical Industry | SIPD | Sierad Produce |
| 32. | Basic and Chemical Industry | SMCB | Holcim Indonesia |

| <i>No.</i> | <i>Industry</i> | <i>Code</i> | <i>Name of the firm</i> |
|------------|-----------------------------|-------------|--|
| 33. | Basic and Chemical Industry | SRSN | Indo Acidatama |
| 34. | Basic and Chemical Industry | SULI | Sumalindo Lestari Jaya |
| 35. | Basic and Chemical Industry | TKIM | Pabrik Kertas Tjiwi Kimia |
| 36. | Basic and Chemical Industry | TOTO | Surya Toto Indonesia |
| 37. | Basic and Chemical Industry | TRST | Trias Sentosa |
| 38. | Basic and Chemical Industry | UNIC | Unggul Indah Cahaya |
| 39. | Consumer Goods Industry | GGRM | Gudang Garam |
| 40. | Consumer Goods Industry | HMSP | Hanjaya Mandala Sampoerna |
| 41. | Consumer Goods Industry | INAF | Indofarma (State Enterprise) |
| 42. | Consumer Goods Industry | INDF | Indofood Sukses Makmur |
| 43. | Consumer Goods Industry | KAEF | Kimia Farma (State Enterprise) |
| 44. | Consumer Goods Industry | KDSI | Kedawung Setia Industrial |
| 45. | Consumer Goods Industry | KLBF | Kalbe Farma |
| 46. | Consumer Goods Industry | LMPI | Langgeng Makmur Plastic |
| 47. | Consumer Goods Industry | MERK | Merck |
| 48. | Consumer Goods Industry | MLBI | Multi Bintang Indonesia |
| 49. | Consumer Goods Industry | MRAT | Mustika Ratu |
| 50. | Consumer Goods Industry | MYOR | Mayora Indah |
| 51. | Consumer Goods Industry | PSDN | Prasidha Aneka Niaga |
| 52. | Consumer Goods Industry | PYFA | Pyridam Farma |
| 53. | Consumer Goods Industry | RMBA | Bentoel International Investama |
| 54. | Consumer Goods Industry | SCPI | Schering Plough Indonesia |
| 55. | Consumer Goods Industry | SKLT | Sekar Laut |
| 56. | Consumer Goods Industry | SQBI | Taisho Pharmaceutical Indonesia |
| 57. | Consumer Goods Industry | STTP | Siantar Top |
| 58. | Consumer Goods Industry | TCID | Mandom Indonesia |
| 59. | Consumer Goods Industry | TSPC | Tempo Scan Pasific |
| 60. | Consumer Goods Industry | ULTJ | Ultra Jaya Milk Industri & Trading Co. |
| 61. | Consumer Goods Industry | UNVR | Unilever Indonesia |
| 62. | Miscellaneous Industry | BATA | Sepatu Bata |
| 63. | Miscellaneous Industry | BIMA | Primarindo Asia Infrastructure |
| 64. | Miscellaneous Industry | BRAM | Indo Kordsa/Branta Mulia |

| <i>No.</i> | <i>Industry</i> | <i>Code</i> | <i>Name of the firm</i> |
|------------|------------------------|-------------|--|
| 65. | Miscellaneous Industry | CNTX | Century Textile Industry |
| 66. | Miscellaneous Industry | GJTL | Gajah Tunggal |
| 67. | Miscellaneous Industry | HDTX | Panasia Indosyntec Tbk |
| 68. | Miscellaneous Industry | IKBI | Sumi Indo Kabel |
| 69. | Miscellaneous Industry | IMAS | Indomobil Sukses International |
| 70. | Miscellaneous Industry | INDR | Indo-Rama Synthetics |
| 71. | Miscellaneous Industry | INDS | Indospring Tbk |
| 72. | Miscellaneous Industry | JECC | Jembo Cable Company |
| 73. | Miscellaneous Industry | KARW | Karwell Indonesia |
| 74. | Miscellaneous Industry | KBLI | KMI Wire and Cable/GT Kable Indonesia |
| 75. | Miscellaneous Industry | KBLM | Kabelindo Murni |
| 76. | Miscellaneous Industry | LPIN | Multi Prima Sejahtera |
| 77. | Miscellaneous Industry | MASA | Multistrada Arah Sarana |
| 78. | Miscellaneous Industry | MYTX | Apac Citra Centertex |
| 79. | Miscellaneous Industry | NIPS | Nipress |
| 80. | Miscellaneous Industry | PAFI | Panasia Filament Inti |
| 81. | Miscellaneous Industry | PBRX | Pan Brothers |
| 82. | Miscellaneous Industry | POLY | Asia Pacific Fibers |
| 83. | Miscellaneous Industry | PRAS | Prima Alloy Steel |
| 84. | Miscellaneous Industry | RICY | Ricky Putra Globalindo |
| 85. | Miscellaneous Industry | SCCO | Supreme Cable Manufacturing & Commerce |
| 86. | Miscellaneous Industry | SMSM | Selamat Sempurna |
| 87. | Miscellaneous Industry | SSTM | Sunson Textile Manufacturer |
| 88. | Miscellaneous Industry | TFCO | Tifico Fiber Indonesia |
| 89. | Miscellaneous Industry | UNTX | Unitex Tbk |
| 90. | Miscellaneous Industry | VOKS | Voksel Electric |