SIMULTANEOUS RELATIONSHIP BETWEEN LEVERAGE POLICY AND DIVIDEND POLICY

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ABSTRACT
This study aims to analyze the simultaneous relationship between dividend policy and leverage policy along the factors influence them. Dividend policy is measured by dividend payout ratio, while leverage policy is measured by debt ratio. The factors influencing these two policies are profitability, size, asset structure, and growth. This study uses secondary data from Indonesia Stock Exchange (IDX), within companies that always listed on LQ45 Index during 2009 – 2014 are used as sample. Two stage least square (2SLS) is used as regression method. The result shows that both of two policies have simultaneous relation and give positive effect. Profitability gives positive effect, while size gives insignificant effect to dividend policy. Profitability and growth give negative effect, while asset structure gives insignificant effect to leverage policy.

Keywords : dividend policy, leverage policy, profitability, size, asset structure, growth, 2SLS.

1. Introduction
As we know, science and technology are the things that always have development year by year. Some advantages due to this development are we can gain some information and build our networking easily. But in other ways, it will cause demands and competitions in business to be more competitive.

Due to demands and competitions in business are more competitive, every company needs to face with some important issue like financing decisions and dividend decisions. Financing decision is a critical decision in financial management that related to do fund raising to financing company’s operational activity. The fund raising can be debt, stock or stock preference. Dividend decision is a decision to decide how much dividend that need to be paid to stake holders.

This study aims to analyze and find empirical evidence about simultaneous influence between leverage policy and dividend policy along their determinants. The determinants are profitability, size, asset structure, and growth. There have been some research papers discussing dividend policy, leverage policy, or both with different result.


Similar with dividend policy, some study analyzing leverage policy and it determinants have been done by several researchers and show different result. First, Kim, Rhim, and Friesner (2007) and Widyarini and Muid (2014) claim that dividend policy gives positive effect to leverage policy, while Setia-Atmaja (2010), Umer (2014), Vo and Nguyen (2014), Fauzi and Suhadak (2015), and Pan, Shi, and Zhu (2015) claim the opposite. Second, according to study done by Hardiningsih and Octaviani (2012) shows profitability gives positive to leverage policy. This result is refused by Cole (2008), Al-Najjar and Taylor (2008), Al-Fayoumi and Abuzayed (2009), Setia-Atmaja (2010), Hestuningrum and Darsono (2012), Umer (2014), and Widyarini and Muid (2014) which their study showing a negative effect. Third, result of study done by Cole (2008), Al-Najjar and Taylor (2008), Al-Fayoumi and Abuzayed (2009), Setia-Atmaja (2010), Hardiningsih and Oktaviani (2012), and Umer (2014) show asset structure gives positive effect to leverage policy. In the other hand, result of study done by Hestuningrum and Darsono (2012) and Widyarini and Muid (2014) show it gives negative effect. Last, according to Cole (2008), Al-Najjar and Taylor (2008), Al-Fayoumi and Abuzayed (2009), Hestuningrum (2012), and Widyarini and Muid (2014) a corporate growth gives positive effect to leverage policy. But, the result is refused Hardiningsih and Oktaviani (2012) and Fauzi and Suhadak (2015) which claim it gives negative effect.

2. Literature Review and Hypotheses

Financial management has responsibility to manage and make decision about how much fund that company should take. The right decision can bring the company to have a well financial position. Myers (1984) said, companies tend to choose internal funding than external one. And if they have to use external funding, first they are better off to take debt over than new equity or retained earning. Moreover, a balance between the benefits and the sacrifices from the use of debt is needed in capital structure. We are allowed to increase the number of debt in capital structure as long as we have more benefits from it. Otherwise, if the sacrifices from the use of debt are more than it benefits we are not allowed (Utami, 2014).

Stock market is the most alternative that often used by investors to invest their funds. Stock market has role as a connector between investors and companies or institutions that need long term funding. According to Ritha and Koestiyanto (2013), investors generally do invest to gain dividend yield and capital gain. Stakeholders wish company will pay them with high dividend, or at least relatively stable, from year by year. Those dividend are expected to be able increasing their welfare.

Leverage policy is a financial policy about how much the corporate uses debt as external funding. The corporate with high debt is usually has low agency cost. Agency cost becomes low due to supervision to manager is done by both stakeholders and creditors. A supervision done by creditors is usually an agreement on limitation of how much dividend that allowed to be paid to stakeholders. Limitation of how much dividend that allowed to be paid is intended for corporate to pay their debt first. Corporate will pay their debt from their profit. Therefore, if they use most of their profit to pay debt, it will cause rest of the profit that can be paid as dividend becomes less. It can be concluded that the leverage policy gives negative effect to dividend policy.

A dividend policy is something critical to corporate. Dividend distributed to stakeholders a as gain from corporate profit. A stable corporate will always pay dividend
to their stakeholders regularly. With this regular dividend payment, stakeholders are expected not to move away to another corporate. Corporate will provide hints to stakeholder about their condition. A well corporate will always pay dividend to their stakeholder regularly. Total dividend will be paid by corporate is rely on their internal funds in the current year. The use of internal fund is intended to reduce agency cost and some surplus in corporate free cash flow. Dividend payment has impact to the use of debt due to this payment will be done after the corporate pay their liabilities. The more liability that corporate has to pay, the less dividend that can be paid. So, it can be concluded that dividend policy gives negative effect to leverage policy.

Dividends paid to shareholders out of corporate profits. Changes in dividend payout are likely to be influenced by fluctuations in the levels of the achieved annual profit. A corporation is therefore likely to increase its dividend payout alongside with rising profits. Profit is, therefore, viewed as a major factor in formulating corporate dividend policy (Manneh and Naser, 2015). Corporate with high profit tends to distribute some of their profit to stakeholders as dividends. In the contrary, corporate with low profit tends not to pay dividend to their stakeholders due to the profit will be used to pay their liabilities. Due to this explanation, profitability gives positive effect to dividend policy.

Profitability is corporate ability to generate net profit during their operations. Corporate with high profitability means that they can manage their fund without need additional debt. The pecking order theory postulates that firms prefer to use internally generated funds when available and choose debt over equity when external financing is required. Thus, this theory suggests a negative relationship between profitability (a source of internal funds) and leverage (Sheikh and Wang, 2011). This statement means that profitability gives negative effect to leverage policy.

Large companies tend to pay more dividends than small companies since the prospect of growth and expansion in their activities are less than small companies. Hence, they do not need to retain a significant part of their profit for future expansion and growth. Large companies are always noticeable and subject to the scrutiny of the outside market. They might use dividend payout to signal information about themselves (Manneh and Naser, 2015). The bigger and more established company is, the easier for the company to enter stock market. It is enable them to get additional fund to increase their profit that will be used to pay dividend. With all of that, big companies tend to pay dividend to their stakeholder regularly. In the contrary, small and less well-established companies are more difficult to enter stock market and tend not to pay dividend regularly. It can be concluded that corporate size gives positive effect to dividend policy.

The use of debt is one way that can be used to reduce agency conflict as consequence on differences of interest between stakeholders and managers. In the use of debt, corporate has to return their loan within it interest. Because of it, corporate needs something to be their collateral so investors are willing to give their fund. Investors tend to give their fund onto corporate that can give them guarantee. Tangible assets are the most widely accepted source for the bank borrowing and secured debts, since it can serve as collateral, which diminish the risk of the lender (Umer, 2014). Trade-off theory predicts tangibility gives positive effect to the level of debt.

A corporate in industry that has high growth rate needs to have sufficient capital to fund corporate spending (Utami, 2014). Pecking order theory argues that growing firms which use first internal sources of finance may not be sufficient for investment purpose and the next option is to use debt financing (Umer, 2014). The more debt is needed to fund growing corporate indicates that corporate growth gives positive effect to leverage policy.
According to literature review above, the hypotheses of this study following:  

- **H1**: Leverage policy gives negative effect to dividend policy.  
- **H2**: Dividend policy gives negative effect to leverage policy.  
- **H3**: Profitability gives positive effect to dividend policy.  
- **H4**: Profitability gives negative effect to leverage policy.  
- **H5**: Corporate size gives positive effect to dividend policy.  
- **H6**: Asset structure gives positive effect to leverage policy.  
- **H7**: Corporate growth gives positive effect to leverage policy.  

### 3. Data and Empirical Methodology  

#### 3.1 Variables  

Two endogenous variables and four exogenous variables are used in this study. The endogenous variables are dividend policy and leverage policy, whereas exogenous variables are profitability, corporate size, asset structure, and corporate growth.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Definitions</th>
<th>Measurement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dividend payout ratio (DPR)</td>
<td>Dividend payout ratio is a comparison between the amounts of dividend per share to earning per share.</td>
<td>[ \frac{\text{DPS}}{\text{EPS}} ]</td>
</tr>
<tr>
<td>Debt ratio (DR)</td>
<td>Debt ratio is a ratio between total liabilities and total assets of the company overall.</td>
<td>[ \frac{\text{Total Liabilities}}{\text{Total Assets}} ]</td>
</tr>
<tr>
<td>Profitability</td>
<td>Profitability measured by a comparison between the amounts of operating income to total assets.</td>
<td>[ \frac{\text{Operating Income}}{\text{Total Assets}} ]</td>
</tr>
<tr>
<td>Asset structure</td>
<td>Asset structure measured by a comparison between the amounts of inventory and fixed assets to total assets of the company.</td>
<td>[ \frac{\text{Inventory + Fixed Assets}}{\text{Total Assets}} ]</td>
</tr>
<tr>
<td>Corporate growth</td>
<td>Corporate growth measured by comparing the difference of total assets in current year and total assets in last year to total assets in last year.</td>
<td>[ \frac{\text{TA}<em>{t} - \text{TA}</em>{t-1}}{\text{TA}_{t-1}} ]</td>
</tr>
<tr>
<td>Firm size</td>
<td>Firm size measured by the natural logarithm of company total assets.</td>
<td>[ \ln \text{Total Assets} ]</td>
</tr>
</tbody>
</table>

### 3.2 Sample  

The population used in this study are the companies that always listed on LQ45 Index during 2009 – 2014. Purposive sampling used as sampling technique. The use of purposive sampling based on several criteria, like:

1. The company must always be listed in Indonesia Stock Exchange during 2009 – 2014,  
2. The company must always be listed in LQ45 Index during 2009 – 2014,  
3. Presenting annual report and performance summary periodically during 2009 – 2014, and  
4. The company must be excluded in the banking sector.

Due to these criteria, the numbers of sample that can be collected are 16 companies.
3.3 Model
The regression models used in this study take following form:

\[ DPR = \alpha_0 + \alpha_1 DR + \alpha_2 Profitability + \alpha_3 Size + \mu_1t \] …………………………….. (1)

\[ DR = \beta_0 + \beta_1 DPR + \beta_2 Profitability + \beta_3 Asset Structure + \beta_4 Growth + \mu_2t \] … (2)

3.4 Method
To analyze data with simultaneous model, two stage least square (2SLS) is used in this study. Moreover, simultaneous test is used to determine simultaneous relationship between dividend policy and leverage policy. Before the data will be tested with 2SLS, descriptive statistic and classical assumption tests are needed to use. Classical assumption tests including normality test, multicollinieraty test, autocorellation test, and heteroscedsticity test.

4. Result
4.1 Descriptive Statistic
Ghozali (2011) stated that the descriptive statistic provides an overview of data that is shown by mean, standard deviation, maximum, minimum, sum, range, kurtosis, and skewness. Here is the result of descriptive statistic of research variables.

<table>
<thead>
<tr>
<th></th>
<th>DPR</th>
<th>DR</th>
<th>Profitability</th>
<th>Size</th>
<th>Asset Structure</th>
<th>Growth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>51.670</td>
<td>0.388</td>
<td>21.863</td>
<td>16.709</td>
<td>56.087</td>
<td>14.847</td>
</tr>
<tr>
<td>Median</td>
<td>49.795</td>
<td>0.400</td>
<td>20.890</td>
<td>16.715</td>
<td>57.145</td>
<td>13.925</td>
</tr>
<tr>
<td>Maximum</td>
<td>100.000</td>
<td>0.680</td>
<td>56.310</td>
<td>18.760</td>
<td>89.730</td>
<td>56.360</td>
</tr>
<tr>
<td>Minimum</td>
<td>0.000</td>
<td>0.110</td>
<td>3.970</td>
<td>13.900</td>
<td>13.070</td>
<td>-11.000</td>
</tr>
<tr>
<td>Std. Dev.</td>
<td>19.949</td>
<td>0.156</td>
<td>12.037</td>
<td>1.040</td>
<td>17.093</td>
<td>11.643</td>
</tr>
<tr>
<td>Skewness</td>
<td>0.645</td>
<td>-0.099</td>
<td>1.092</td>
<td>-0.391</td>
<td>-0.288</td>
<td>0.584</td>
</tr>
<tr>
<td>Kurtosis</td>
<td>3.725</td>
<td>1.856</td>
<td>4.098</td>
<td>3.263</td>
<td>2.491</td>
<td>4.326</td>
</tr>
</tbody>
</table>

Table 2 shows the descriptive statistic of 16 companies that always listed in LQ45 Index. Dividend payout ratio (DPR) has mean value about 51.67%, with minimum value at 0.00% and maximum value at 100.00%. Debt ratio (DR) has mean value about 0.39×. Minimum value is recorded at 0.11×, whereas maximum value at 0.68×.

Result at Table 2 shows that mean value of profitability is about 21.86%, with minimum value at 3.97% and maximum value at 56.31%. Moreover, mean value of corporate size is about 16.71×. It minimum value is recorded at 13.9×, and the maximum value at 18.76×.

Mean value of asset structure from the used of 96 samples is about 56.09%. The minimum value is recorded at 13.07%, whereas maximum value at 89.73%. Corporate growth variable has mean value about 14.85%, with minimum value at –11.00% and maximum value at 56.36%.

4.2 Empirical Results
Classical assumption tests provides that the equation model used in this study has data that distributed normally, free from multicollinierity and autocorellation, and
included to homoscedasticity. This equation model is overidentified and has simultaneous problem. Thus, this model can be tested with 2SLS.

| Table 3 | Simultaneous Model of Dividend Policy and Leverage Policy Tested with 2SLS |
|----------------|--------------------|-----------------|-----------------|
| **Endogenous Var.** | **Exogenous Var.** | **t-Statistic** | **Probability** |
| DPR | DR | 3.899445 | 0.0002 |
| | Profitability | 9.731502 | 0.0000 |
| | Size | -1.412132 | 0.1613 |
| DR | DPR | 5.552173 | 0.0000 |
| | Profitability | -5.788750 | 0.0000 |
| | Asset Structure | -0.688646 | 0.4928 |
| | Growth | -1.807779 | 0.0739 |

The testing result of first hypotheses shows this hypotheses is rejected. Testing with two stage least square (2SLS) on leverage policy to dividend policy shows t-statistic is positive and probability value is at 0.000, less than significant value at 0.05. It means that leverage policy gives positive effect to dividend policy partially. This finding refuses result of research paper done by Setia-Atmaja (2010), Lee (2014), Vo and Nguyen (2014), Kuzucu (2015), and Manneh and Naser (2015), but supports Kim, Rhim, and Friesner (2007) and Ritha and Koestiyanto (2013). Similarily to first hypotheses, the second hypotheses is rejected. The testing result shows dividend policy gives positive effect to leverage policy partially. This finding refuses result of research paper done by Setia-Atmaja (2010), Umer (2014), Vo and Nguyen (2014), and Pan, Shi, and Zhu (2015), but supports Kim, Rhim, and Friesner (2007) and Widyarini and Muid (2014). This can be caused by the companies increase their external funding due to their profit are not high enough to pay dividends.

Based on Table 3, third hypotheses of this study is accepted. The testing of profitability to dividend policy shows t-statistic is positive and probability value is at 0.000, less than significant value at 0.05. It means profitability gives positive effect to dividend policy. This finding supports He, Li, Shi, and Twite (2007), Lee (2014), Vo and Nguyen (2014), Manneh and Naser (2015), and Pan, Shi, and Zhu (2015). As well as third hypotheses, forth hypotheses of this study is also accepted. The testing of profitability to leverage policy shows t-statistic is negative and probability value is at 0.000, less than significant value at 0.05. It means profitability gives negative effect to leverage policy partially and has similar result with research paper done by Cole (2008), Al-Najjar and Taylor (2008), Al-Fayoumi and Abuzayed (2009), Setia-Atmaja (2010), Hestuningrum and Darsono (2012), Umer (2014), and Widyarini and Muid (2014).

Our finding shows that fifth and sixth hypotheses is rejected and insignificant. Corporate size has no significant effect to dividend policy due to probability value is at 0.1613, more than significant value at 0.05. This finding doesn’t support finding results by He, Li, Shi, and Twite (2009), Setia-Atmaja (2010), Kuzucu (2015), Manneh and Naser (2015), and Pan, Shi, and Zhu (2015). Meanwhile, asset structure has no significant effect to leverage policy due to probability value is at 0.4928, more than significant value at 0.05. It means finding results by Cole (2008), Al-Najjar and Taylor (2008), Al-Fayoumi and Abuzayed (2009), Setia-Atmaja (2010), and Umer (2014) are refused.

Finding result of this study shows seventh hypotheses is rejected. The testing of corporate growth to leverage policy shows t-statistic is negative and probability value is at 0.0739, less than significant value at 0.10. It means corporate growth gives negative effect to leverage policy partially. This can be caused by the companies get more profit
when their growth is increased, so their need of external funding become less. This finding result is refused Cole (2008), Al-Najjar and Taylor (2008), Al-Fayoumi and Abuzayed (2009), Hestuningrum and Darsono (2012), and Widyarini and Muid (2014). But in the other hand, it supports Hardiningsih and Oktaviani (2012) and Fauzi and Suhadak (2015).

5. Conclusion

This study shows a simultaneous relationship leverage policy and dividend policy along their determinants. Our finding for dividend policy is leverage policy and profitability give positive effect significantly, but corporate size gives insignificant effect. For leverage policy, our finding shows that dividend policy gives positive effect significantly, while profitability and corporate growth give negative effect significantly. But, asset structure gives insignificant effect.

There are several limitedness in this study. First, time period that we use is so limited, only six years. Second, this study sample uses corporates that listed in LQ45 Index. It means there are various sectors and make it unable to see how they affect in a specific sector. Third, our findings show corporate size gives insignificant effect to dividend policy and asset structure gives insignificant effect to leverage policy. And lastly, there are three critical issues in financial management for corporate : investment decision, financing decision, and dividend decision. This study just examines simultaneous relationship between financing decision and dividend decision.

With the limitedness as mentioned above, the further researchers suggested to find another factors that determine dividend policy and leverage policy. Overmore, a study of a specific corporate sector needs to be examined to determine any factors that most influence dividend policy and leverage policy in that sector.

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