1. Introduction

Financial decisions are very important for the safety of corporate finance. A wrong decision regarding the capital structure can lead to financial difficulties and likely to result in bankruptcy. Typically, management companies manage their capital structure to maximize firm value. Although empirical result states that the optimal capital structure, there are no standard methodologies that allow fund managers to use in an optimal level of debt (Monica and Abir, 2010).

Explanation of the capital structure has so far produce two theories, namely the trade off theory and pecking order theory. Trade off theory states that in seeking the relationship between capital structure with the value of the firm there is an optimal degree of leverage (Baker and Wurgler, 2002). Therefore the company will always try to adjust toward the optimal level of leverage. Thus, the level of corporate leverage to move on from time to time in the direction of a target to be achieved, namely at the level where companies can maximize profit and increase the value of the company from using debt. While the pecking order theory suggests that the source of funding from within the company more precedence than on funding from outside the company, but if the company use outside financing, loans (debt) take precedence over funding with additional capital from shareholder (Backer and Wurgler, 2002).

Funding issues are an important part for the company because it involves the continuity of operation of the company. The company needs fund to finance the daily operational activities which can generate income. Therefore, the management company must be careful in choosing the appropriate funding source for the company. Source of corporate funding is coming from outside and inside the company. Funding is sourced from within the company can be either retained earnings, paid-in-capital by the owner, or the issuance of securities by the company. While the funding coming from outside the company in the form of debt, both short-term debt and long-term and obligation. The ratio of debt measures how much a company financed by debt.

Companies that use debt as a source of financing will have a fixed cost because of the interest on the loan to be paid to creditors. Use of this debt has advantages and disadvantages. Therefore, financial managers should carefully choose the right financing structure for the company so as to maximize profits and improve company performance and ultimately shareholders prosper.

Various studies have been conducted to determine the factors are affecting company's debt ratio. Based on research conducted by Monica and Abir (2010), there are 5 variables that affect debt ratio, ie size, growth, interest coverage ratio, quick ratio, and differentiate the company's capital structure which have debt ratio of more than 50% and less than 50%. In the study, Monica
and Abir also investigated the effect of financial leverage investment opportunity. Companies with large investment opportunities tend to use more debt a little bit (Hovakimian et al. 2001 & Baker and Wurgler, 2002). Result of research conducted Gaver & Gaver (1993) showed that the level of investment opportunity set that varies among companies is one of the determinants of differences between corporate financing policy decisions, namely companies that grow tend to have ratios of debt in capital structure is relatively lower. The essence of company's growth is the existence of investment opportunities that can generate profits (Chung & Charoewong, 1991). Large companies generally use more debt than small firms. Meanwhile, the companies with the level of liquidity, interest coverage ratio, as well as high growth tend to use less debt to finances its operations (Monica and Abir, 2010). Thus firm size, growth, liquidity, and investment opportunities have an influence on decisions of financial managers in determining the size of the company's debt ratio.

Based on the background of the above the purpose of this study is to determine the effect of company's size, growth, quick ratio, interest coverage ratio, and investment opportunity to company's debt ratio.

2. Literature Review
There are several factors that affect a company's debt ratio, ie firm size, growth, quick ratio, interest coverage ratio, and investment opportunity. The five factors above affect the financial managers in determining how large the proportion of debt that will be used in capital structure.

Size of company has an influence on the ratio of corporate debt. Large companies tend to use more debt than small firms. This is because big company more diversified so that the risk of the failure is smaller (Monica and Abir, 2010). But the different opinion expressed by Rajan and Zingales (1995) which says that large companies will generate high profits and therefore contributes to a decrease in leverage. Based on his research, Rajan and Zingales (1995) revealed large companies in Germany will likely reduce the use of debt in small firms.

Quick ratio is a liquidity measurement of a company. The higher the liquidity of a company then the use of debt will be smaller (Monica and Abir, 2010). Companies that have high liquidity have sufficient cash flow so that to finance their operations the company will first use the internal funds. This is consistent with the pecking order theory which states that the company will use internal funds first, then after that external fund.

High interest coverage ratio reflects the company's ability to meet its obligations to pay interest and repay debts. Company with high interest


THE DETERMINANTS OF DEBT RATIO AT MANUFACTURING FIRMS THAT LISTED IN INDONESIA STOCK EXCHANGE

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Abstract: This study purposed to acknowledge the determinants of debt ratio. Data research's drawn from 74 firms in manufacturing industry that listed in Indonesia Stock Exchange during period 2007 until 2009. Analysis method used is panel data regression with fixed effect model approach. Independent variables used are size, quick ratio, interest coverage ratio, growth, and investment opportunity. While dependent variable used in this study is debt ratio. Based on the result Fixed Effect Model, size, growth, and investment opportunity have no significantly effect to debt ratio. While interest coverage ratio and quick ratio have significant effect on debt ratio. This study expected can give input to corporate managers to consider firms characteristic to determine optimal capital structure. Investors have to consider firms characteristic before investing. Investor better to invest in big company and has less debt because the risk is lower.

Keywords: debt ratio, growth, interest coverage ratio, investment opportunity, quick ratio, size
coverage ratio means capable of generating high profits so that company will use these profits (retained earnings) to fund its activities (Monica and Abir, 2010). This statement is in accordance with Haris and Raviv (1990) who said that the level of leverage negatively related to interest coverage ratio, whereby companies with high interest coverage ratio would have a low debt ratio.

Companies with high growth opportunities will result in high internal cash flow. Internal cash flow will be sufficient to fund investment and reduce the need for debt financing. Increasing growth opportunities affect the policy of debt reduction (Alonso et al. 2005). Meanwhile, according McCue and Ozcan (1992) increased the company's growth will increase the financing needs through long-term loans.

Several previous study claimed that the negative relationship between level of debt usage and investment opportunities in companies in America (Gaver & Gaver, 1993). According Kallapur and Trombley (2001) and Baker and Wurgler (2002) companies with large investment opportunities tend to use less debt capital. This is because companies prefer to use the equity or the issuance of shares to fund its investment in the future.

3. Hypothesis

Based on literature review above, then the hypothesis is formulated as follows: According Monica and Abir (2010) big companies are usually more diversified so that the level of risk is small. This makes the investor and creditors more confident to invest in large companies because it has low risk of failure compared to small companies. Therefore, large companies are easier to obtain loan or debt capital. From the description can be taken the hypothesis that:

\( H_1: \text{There is a positive influence between the size with the debt ratio} \)

Eriotis et al. (2007) stated that the quick ratio measures a company's liquidity level. Companies that use more debt obligations or liabilities will also increase resulting in current assets owned will be minor because the company must pay its liabilities from cash held. In addition, the company that has a lot of assets, indicating that the company has the cash inflow and high internal funds that can be used to fund operations and investment, thereby reducing the use of debt. From the description hypothesis can be formulated as follows:

\( H_2: \text{There is a negative influence between the quick ratio with the debt ratio} \)

Interest coverage ratio reflects the ability of the company to meet its interest payment obligations (Monica and Abir, 2010). The higher the interest coverage ratio is meant to reflects that the company has ability to generate high profits that would reduce the capital debt. Also according to Haris and Raviv (1990) interest coverage ratio is measure the likelihood of failure, where the
addition of debt will lead to higher possibility of failure of a company. Therefore, the higher the interest coverage ratio will less use of debt. Based on the description above, so we can formulate the hypothesis as follows:

\( H_1 : \text{There is a negative influence between the interest coverage ratio with the debt ratio} \)

According to Alonso et al. (2005) and Monica and Abir (2010) firm growth has a negative effect on leverage. Companies that have high growth tend to have a high risk so it is difficult to obtain loans. In addition, companies with high growth in its share price will also increase. However, when the firm adds debt ratios become too high then the value of the company will go down as a result of rising risk make investors afraid to invest. Therefore, the greater a company's growth opportunities then the smaller the ratio of its debt. From the description it can be hypothesized as follows:

\( H_2 : \text{There is a negative influence between growth with the debt ratio} \)

According to Gaver & Gaver (1993) in Kallapur and Trombley (2001) found a negative effect between the investment opportunity to debt ratio. Companies that have a high investment opportunity or have a high market to book ratio will use equity issuance to fund its investment compared to the use of debt (Baker and Wurgler, 2002). From the description can be taken as the following hypothesis:

\( H_3 : \text{There is a negative influence between the investment opportunity with the debt ratio} \)

4. Methodology

4.1. Data Collection

Data used in this research is secondary data. Secondary data is data that has been recycled from the primary data. The data used in this study obtained from the financial statement on companies listed in Indonesia Stock Exchange (IDX) obtained from the ICMD and website www.idx.co.id.

The method used to obtain samples in this study is purposive sampling. The samples taken are determined based on the following criteria:

a. Study period between years 2007 to 2009

b. The company which became the study sample are in manufacturing industrial group listed in IDX

c. Manufacturing companies who have interest payment during the study period

d. Manufacturing companies that have complete financial statement during the study period

e. Manufacturing companies that use Rupiah exchange rate in their financial statement restricted F-test, and the Hausman test.
4.2. Selection Model

Models are tested by the Panel Least Square (PLS), with the common method effects, and random effect. In the model test data panel is not needed because the classical assumption in the model panel data will definitely have problems multicollinearity, heteroscedasticity, and autocorrelation. In the use panel data regression model, there are three models of approach that is common effects panel data model, random effect model, and fixed effect model. To find out which model is most appropriately used in this research is carried out restricted F-test (likelihood ratio) and Hausman test.

Restricted F-test conducted to determine which model is appropriate to be used between the common effect and the fixed effect for the estimation data. If under the restricted F-test is selected fixed effect then Hausman test is necessary to know which model between fixed effect and random effect is more appropriately used to estimate data. Here are the results for each test:

- Restricted F-test (likelihood ratio)
  The calculation of restricted F-test results obtained of value $0.000 < 0.05$ which means the FEM model can be used in the models because there are individual effects, meaning that each individual has its own intercept. That means estimation models can be used with the Fixed Effects Model (FEM)

- Hausman Test
  From the results obtained value Hausman test p-value of $0.002 < 0.05$ prove that the random effect model is not appropriate to be used and the fixed effect model is the right model and more efficient.

- F test
  F-test used to test the overall effects of independent variables on the dependent variable. At this testing stage then all independent variables will be tested together to see whether this independent variables affect the dependent variable used to test this hypothesis the following decisions criteria:
  If significant levels of $<0.05$ then Ho is rejected. This means the model can be used in research.
  If significant levels of $>0.05$ then Ho is accepted. This means the model can not be used in research.

2. T test T test used to test whether the individual independent variables have a significant influence on the dependent variable. Decision : If p-value $<0.05$ significant, then Ho rejected If p-value $>0.05$ not significant, then Ho accepted

3. Goodness of Fit
At this testing stage all the independent variables will be tested to see whether there are independent variables in the model are quite capable of explaining change of the dependent variable. If the value of $R^2$ close to one means that there are independent variables in the model can explain the change in the dependent variable.

Based on Goodness of Fit test obtained the value of $R^2$ is at 0.962172 which means the debt ratio variable is affected by size, quick ratio, interest coverage ratio, growth, investment opportunity and dummy dr amounted to 96.22% while the remaining 3.78% is explained by the other variables not included in the model.

4.3. Panel Data Regression Analyze (Fixed Effect Model)
The model analysis used in this research is panel data regression with fixed effect estimation model. Panel data refers to data that contains time series of observation from a number of economic units. This study examines the role of company characteristics (size, quick ratio, interest coverage ratio, growth, investment opportunity, and dummy dr) in determining the ratio of corporate

| DR   | : Debt ratio   |
| SIZE | : Size        |
| QR   | : Quick ratio |
| ICOV | : Interest coverage ratio |
| GROWTH | : Firm's growth |
| INV  | : Investment opportunity |
| DUMMY DR | : Dummy debt ratio |
| $\epsilon t$ | : Error term. |

4.4. Variable and Measurement
Debt ratio measures the firm financed by debt in their capital structure. Debt ratio is measured by comparing the ratio of total debt and total asset of the company. Debt ratio includes both long-term debt and short-term debt. Firm size is measured by using the logarithm total value of company sales. Quick ratio is a measurement of the liquidity by dividing the company's current asset minus inventory to current liabilities (Brigham and Erhardt, 2008). This ratio indicates the ability of the company to protect their short-term liabilities.

Interest coverage ratio is measured by dividing net income before tax to interest payment. Growth is measured by the changes in profit after tax each year. Investment opportunity according to Myers (1977) is a combination of
company owned assets and the selection of investment in the future with a positive NPV. Investment opportunity is measured using market to book ratio as a proxy.

5. Analysis and Discussion
Descriptive statistic is a method associated with collecting, summarizing, presenting the data into a form more informative. Descriptive statistics used to describe characteristics of data within a study. Descriptive statistics can be seen on table 1.

Next testing is Panel Least Square model with the methods of common effects, fixed effects, and random effect. To determine the exact models used in this study then conducted between the common effect and fixed effect using the restricted F-test the model gained the fixed effect model, therefore the Hausman test is needed to find out which model between fixed effect model and random effect model is more appropriate for the estimation of data that can be used.

5.1. Restricted F-test (Likelihood Ratio Test)
To find out the model of the common effect and fixed effect to be selected for the estimation of data it will be done with the restricted F-test. Here are processed with eviews7 of the restricted F-test:

$H_0$: estimation model can be used with the common effect model

$H_a$: estimation model can be used with the common effect model

The calculation of restricted F-test will accept $H_a$ and rejected $H_0$. This is because $p$-value of $0.000 < \alpha 0.05$ prove the FEM model can be used in the model because there are individual effect, meaning that each individual

5.2. Hausman Test
The next stage is to test specification using Hausman test. This test aims to find the right model and more efficient between the fixed effect model and the random effect model. Here are the results of Hausman test with Eviews7.

$H_0$: Fixed Effect Model (FEM) cannot be used and Random Effect Model (REM) is the right model and more efficient

$H_a$: Random Effect Model (REM) cannot be used and Fixed Effect Model (FEM) is the right model and more efficient.

From table 2 the results of hausman test then $H_0$ is fail to be accepted or rejected. This is because $p$-value $0.0002 < \alpha$ value of $0.05$. It proves the random effect model is not appropriate to be used and the fixed effect model is the right model and more efficient to be used.
5.3. T-test

The t-test is conducted to determine the relationship of each independent variable on the dependent variable. After doing some testing, the interpretation of study result to research is through a model of fixed effect that can be used to determine the effect of size, quick ratio, interest coverage ratio, growth, dummy, and investment opportunities to debt ratio. The results of t-test of fixed effect model can be seen on table 3.

5.4. Findings

This study uses panel data regression approach to Fixed Effect Model (FEM) to determine the effect of size, quick ratio, interest coverage ratio, growth, investment opportunity and dummy on corporate debt ratio.

Based on the result of data processing with a fixed effect model, the variable quick ratio (QR) has a significant negative influence on debt ratio. This result fit with research by Monica and Abir (2010) which revealed that companies with high liquidity tend to use less debt, because companies with high liquidity has a large internal funds so that companies prefer to use retained earnings to finance its operations than using debt capital.

Variable interest coverage ratio (ICOV) also has a significant negative impact on the debt ratio. These result are in line with the research Monica and Abir (2010) who said that there is a negative effect of interest coverage ratio with the debt ratio. This result are also in accordance with Haris and Raviv (1990) who said that the level of leverage is negatively related to interest coverage ratio, which is the companies with a high interest coverage ratio would have a low debt ratio. The company is able to produce high profits to fund their activities so that the company will use internal funds from profit generated.

A significant result is also shown in the capital structure variable. A significant result show that there are differences in capital structure among companies that use a lot of debt capital (more than 50% of total asset) and companies use less debt capital (less than 50% of total asset). These result are consistent with studies conducted Eriotis et al. (2007) and Monica & Abir (2010). Companies with low debt mean than the company issuing equity at the time of high market value and companies with high debt level are the companies that issue equity when market value is low (Baker and Wurgler, 2002).

The results are not significantly occurring in variable size (SIZE), which has no effect on debt ratio. This result doesn't match with Monica and Abir (2010) which said that there is a positive effect of size with the debt ratio. This is because large-scale manufacturing firms in Indonesia have high sales revenues so that companies able to generate high profits. Therefore, the
company more likely to use retained earnings and reduce the use of debt. This is consistent with Rajan and Zingales (1995) who said that size has a negative effect on leverage, where large firms have high profitability so they will use these profits to fund their operations than using debt capital.

No significant results are also shown in the growth variable (GROWTH) to debt ratio. These results differ from studies conducted Alonso et al. (2005) that growth has a negative effect on debt ratio, which increased the company's growth opportunities affect the policy of debt reduction. Different result is because the manufacturing companies that have high growth prospect in Indonesia will tend to require more funds to finance its growth so that the company will issue debt when internal funds are not sufficient to be used. This is in accordance with the opinion of McCue and Ozcan (1992) that increased the company's growth will increase corporate financing needs so that the company will try to fund it with long-term borrowings (debt).

Recent research conducted in the investment opportunity variable (INV), where the investment opportunity has no significant effect on debt ratio. This result is not in accordance with the research conducted by Gaver & Gaver (1993) and Baker and Wurgler (2002) who said there is a negative effect between investment opportunities with leverage. This is because manufacturing firms in Indonesia tend to use much debt to finance operating activities and investment. These results can be seen in Table 1 that more companies are using the debt ratio more than 50% in its capital structure. Companies with high investment opportunities require a lot of funds to expand on projects that yield higher returns than cost of capital so the company will try to fund it with long-term loans.

6. Conclusion
This study aims to analyze the determinants of debt ratio, namely size, quick ratio, interest coverage ratio, growth, investment opportunity, and differentiate the company's capital structure which has the debt ratio more than 50% and less than 50% in manufacturing industry in Indonesia with complete financial data to 2007 through 2009. Based on data processing by using Fixed Effect Model, the conclusion can be drawn from this research are: (1) Quick ratio has a significant negative effect on the debt ratio, where firms with higher quick ratio also mean having high liquidity. The companies will have liquid asset or cash in large quantities, thereby reducing external funding. (2) Interest coverage ratio has a significant negative effect to debt ratio, where companies with high interest coverage ratio reflects the firm is able to generate high profits so that they can pay the mortgage interest and debt caused the ratio of corporate debt will be
lower and (3). There are significant differences between companies that have a
debt ratio of more than 50% and less than 50% in manufacturing industry in
Indonesia.

The results of this study are expected can give input and implication to
company's financial managers and investors. Company's financial manager
need to pay attention to company's characteristics in determining corporate debt
proportion in order the optimal capital structure of firm can be achieved. Based
on this study, size has a negative affects to debt ratio. Therefore manager better
to improve sales revenues so that company has high profits and tend to use less
debt. Financial manager is also has to keep liquidity and interest coverage ratio
high in order firm has internal funds resource, so it can make them reduce their
external funds. Besides, manager has to improve firm's growth and investment
opportunities maximally in order to maintain continuity and value for the
company so attractive for investors to invest in the company.

Investors need to pay attention to a firm capital structure because it can
influence firm value. If firms have excess debt ratio in their capital structure so
investors need to consider their decision to invest in that company because it has
high risk and probability of defaults. Investors better to make investment in big
company because it more diversified so the risk is small. Besides, investors have
also to considering the liquidity of firms because the liquid firm means that they
have high current assets to cover their liabilities. Investors also need to consider
company's growth and investment prospect in the future.

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APPENDIX

Table 1
Descriptive Statistic

<table>
<thead>
<tr>
<th></th>
<th>DEBT RATIO</th>
<th>SIZE</th>
<th>QUICK RATIO</th>
<th>INTEREST COVERAGE RATIO</th>
<th>GROWTH</th>
<th>INVESTMENT OPPORTUNITY</th>
<th>DUMMY DR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>0.640090</td>
<td>13.99172</td>
<td>1.006986</td>
<td>19.53435</td>
<td>84.30293</td>
<td>1.919651</td>
<td>0.644144</td>
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<tr>
<td>Median</td>
<td>0.550000</td>
<td>13.88220</td>
<td>0.812250</td>
<td>2.174695</td>
<td>35.21500</td>
<td>0.851400</td>
<td>1.000000</td>
</tr>
<tr>
<td>Maximum</td>
<td>2.880000</td>
<td>18.40583</td>
<td>6.099650</td>
<td>2824.123</td>
<td>14811.06</td>
<td>82.30453</td>
<td>1.000000</td>
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<tr>
<td>Minimum</td>
<td>0.120000</td>
<td>7.447170</td>
<td>0.009470</td>
<td>-985.4730</td>
<td>-7734.240</td>
<td>-16.77852</td>
<td>0.000000</td>
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<tr>
<td>Std. Dev</td>
<td>0.425339</td>
<td>1.594796</td>
<td>0.917413</td>
<td>220.9760</td>
<td>1255.018</td>
<td>6.700162</td>
<td>0.479854</td>
</tr>
</tbody>
</table>

Table 2
Result of P-Value

<table>
<thead>
<tr>
<th>Test</th>
<th>P-Value</th>
</tr>
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<tbody>
<tr>
<td>Restricted F-test</td>
<td>0.000</td>
</tr>
<tr>
<td>Hausman Test</td>
<td>0.0002</td>
</tr>
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</table>

Table 3
Result of t-test (Fixed Effect Model)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>Prob.</th>
</tr>
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<tbody>
<tr>
<td>C</td>
<td>0.771298</td>
<td>0.411004</td>
<td>0.0626</td>
</tr>
<tr>
<td>SIZE</td>
<td>-0.011780</td>
<td>0.029142</td>
<td>0.6867</td>
</tr>
<tr>
<td>QR</td>
<td>-0.032349</td>
<td>0.012311</td>
<td>0.0095</td>
</tr>
<tr>
<td>ICOV</td>
<td>-0.013294</td>
<td>0.024152</td>
<td>0.0049</td>
</tr>
<tr>
<td>GROWTH</td>
<td>2.15E-06</td>
<td>7.99E-06</td>
<td>0.7618</td>
</tr>
<tr>
<td>INV</td>
<td>0.002188</td>
<td>0.001138</td>
<td>0.0566</td>
</tr>
<tr>
<td>DUMMY DR</td>
<td>0.096356</td>
<td>0.015515</td>
<td>0.0000</td>
</tr>
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</table>