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# Analysis of Relationship between Leverage Finance and Profitability of Manufacturing Company Lq45 in Indonesia Stock Exchange

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*Abstract:*
*This research is an explanatory research by using secondary data in the form of annual financial statements that have been audited period 2012-2016 at 25 manufacturing companies LQ45 Indonesia Stock Exchange and taken a sample of 9 companies. The goal is to know the strength, direction and significance of the relationship between financial leverage variables namely Debt Ratio (DR) and Debt Equity Ratio (DER) with profitability variable that is Return on Asset (ROA) and Return on Equity (ROE). The results of the association test proved a strong, positive, and significant relationship between DR (0.596) Sig (0.000) and DER (0.620) Sig (0.000) with ROA. There is a strong, positive and significant relationship between the DR (0.655) Sig (0.000) and ROE variables and there is a very strong, positive, and significant relationship between the DER variable (0.824) Sig (0.000) and ROE. Information on strong or very strong, positive, and significant relationship between financial leverage and profitability of manufacturing companies at LQ45 on the Indonesia Stock Exchange reflects funding decisions with leverage there is a trade-off of high risk and also high returns.*

*Keywords: DR, DER, ROA, ROE, trade-off*

## 1. Introduction

According to a statement from the Head of the Central Statistics Agency Kecuk Suhariyanto in a press conference at BPS Headquarters, Jakarta, Tuesday (01/11/2016) large and medium manufacturing industry showed a fairly good progress towards the end of 2016. In the third quarter, the industry grew by 5.7 % or higher compared with the previous quarter 5.01%. The growth of manufacturing industry that is continuously increasing in some sectors reflects the intense competition among manufacturers to seize market share. This reflects the circumstances in which each company needs the right policies in every corporate activity that becomes the duty and responsibility of the company management. One of them is the decision of capital structure to support every activity of the company in the effort of achieving its purpose.

In running the company's activities required capital. Determination of capital structure is an important decision in the company because it involves achieving corporate profits. Companies are faced with a choice decision to use capital from debt, or from their own capital, or combine debt and own capital. Funding decisions with financial leverage or debt have the advantage of being able to reduce the amount of tax payments due to fixed interest costs incurred from debt, in contrast to dividend payments that cannot reduce tax payments. On the other hand, debt also has some disadvantages. The higher the debt ratio, the higher the risk of the company so that the interest rate becomes high in line with the interest expense. In addition, if a company is experiencing financial difficulties and operating income is not sufficient to cover the interest expense, it will arise the threat of bankruptcy costs. To make right decisions about capital structure, it is necessary to understand how far the relationship between the capital structure and the profitability of the firm. The capital structure or leverage in the research instrument used is Debt Ratio (DR) and Debt to Equity Ratio (DER), while profitability is measured by Return on Equity (ROE) and Return on Asset (ROA).

In line with the tradeoff theory developed by (Modigliani & Miller, 1958), which states that there will always be a trade-off between risk and return. Risk and return will always be directly proportional, in other words if the risk of an

investment decision tends to be high, the return to be generated will also be directly proportional, and vice versa. Likewise, in funding decisions through debt, there will be gains and losses that will arise from such funding decisions as described previously. Understanding the assessment of trade-offs between the risk and return of the funding policy through this debt will form the basis of the composition of capital structure in an effort to maximize the welfare of shareholders. So, if the tax benefit is greater than the interest cost and bankruptcy cost, then the firm should use the debt to maximize the value of the company.

The trade off theory also states that the value of the firm will increase in line with the use of debt, as long as the debt position in the capital structure is still below the target of optimal capital structure. Because according to the theory of capital structure, if the position of capital structure has been above the target capital structure, then any additional debt will decrease the value of the company. The use of debt as a source of funding can certainly increase the company's management opportunities to conduct various activities of the company because of additional cash for the company that can generate free cash flow. The increase in cash flow is expected to affect the profitability of the company.

Previous research on the relationship between financial leverage and corporate profitability shows mixed results, meaning there is still no consistency.  (Akhtar, 2012) who found a positive relationship between financial leverage (DER) and profitability (ROA, ROE, NPM, Growth Sales, and Dividend Cover Ratio). In line with these results, (Rehman, 2013) found a positive relationship between Leverage (D / E) with ROA and Sales Growth. But in his research Leverage (D / E) has a negative relationship with EPS, NPM and ROE. This is in contrast to (Akhtar, 2012) research. While (Pratheepkanth, 2011) found that DER has a positive relationship with Gross Profit Ratio, but has a negative relationship with Net Profit Ratio, ROA, and ROE. Based on the background, the purpose of this research is to analyze and verify the relationship between financial leverage and profitability at LQ45 manufacturing company in Indonesia Stock Exchange.

## 2. Literature Review

### 2.1. Capital Structure

The capital structure is a mix of long-term corporate financing compositions that reflect the company's policy in funding its assets. Management will always optimize the mix of capital structures that can maximize the value of the company. A balance between debt and equity needs to be considered in order to achieve the company's objectives. The optimal capital structure is the ideal funding mix between debt with own capital (Warsono, 2003, p. 235). Each company's financing decision by using debt, then attached to it is the existence of fixed costs and expenses to pay interest on funds borrowed for corporate funding. (Houston & Brigham, 2006, p. 6) state that, the capital structure policy involves an exchange between risk and return where the use of more debt increases the risk borne by the shareholder. But greater use of debt will usually lead to expectations of higher return on equity.

### 2.2. Agency Theory

(Jensen & Meckling, 1976) have developed an agency theory that explains the pattern of relationships between principals and agents. With the separation of the owner of the company to the company in this case represented by the board of commissioners (shareholders) called the Principal, and the person who manages the company that is management (people hired by the company) called the Agent. Because of the separation, there will be a conflict of interest. It happens because managers will not want to work for the benefit of the owners of the company if it is not in harmony with their interests. In the context of financial management, agency relationships can be established between (1) shareholders with managers, (2) managers with debtors who provide debt, (3) between managers and shareholders, and debtors who provide debt that at some time will cause distress finance (Brigham & Houston, 2002 in Lubis & Putra, 2014, p. 10).  The problem of agents arises because of the relationship not only between the owner and the manager, but also the relationship between the owner and the lender. The lender provides funds to the company with a view to meeting the needs of current capital expenditures, future, and capital structure for the company. This factor determines the business risk and financial risk of the company. If the lender provides funds to the company, the interest is charged based on the lender's assessment of the company's risk. If risky investments do not work, then the lender bore the cost. There is clearly an incentive in which managers act on behalf of shareholders to take advantage of lenders. The motive for using this financial leverage can be called a hypothetical threat, because management is under the threat of financial failure. Therefore, according to the agency theory of capital structure, managers work more efficiently and disciplined. This is intended to reduce free cash flow that ultimately affects returns on common stock (Keown, 2000, p. 558).

### 2.3. Trade-off Theory

According to the trade-off theory expressed by (Myers, 2001), the company will owe up to certain debt levels, where tax shields from additional debt equal the cost of financial distress. " Trade-off theory in determining the optimal capital structure incorporates several factors including taxes, agency costs and bankruptcy costs but retains market efficiency assumptions and symmetric information as a counterweight to the benefits and uses of debt. The optimal debt level is achieved when the tax savings reach the maximum amount against the cost of financial difficulties. This theory has implications that managers will think within the framework of a trade-off between tax savings and the cost of financial difficulties in the determination of capital structure Trade-off Theory. The company will owe up to certain debt levels, where

tax shields from additional debt equal the cost of financial distress. "Trade-off theory in determining the optimal capital structure incorporates several factors including taxes, agency costs and bankruptcy costs but retains market efficiency assumptions and symmetric information as a counterweight to the benefits and uses of debt". The optimal debt level is achieved when the tax savings reach the maximum amount against the cost of financial difficulties. This theory has implications that managers will think within the framework of a trade-off between tax savings and the cost of financial difficulties in determining capital structure. Trade-off theory shows that interest is a tax-deductible expense making debt easier than common stock or preferred stock. As a result, the government has indirectly paid part of the cost of debt capital, or in other ways, the debt provides tax protection benefits. Thus, the use of debt gives the company more operating profit earned by investors. Therefore, the more companies use the debt, the higher the stock price. According to the assumptions of Modigliani - Miller's writing with taxes, the share price of a company will reach its full value if the firm fully uses 100% debt. In the real world, companies rarely use 100% debt. The main reason companies limit their use of debt is to keep the costs associated with bankruptcy remain low.

There are several levels of debt restrictions, where the likelihood of bankruptcy is so low that it becomes unimportant. Then, the costs associated with bankruptcy are becoming increasingly important, and these costs reduce the tax benefits of higher-level debt. The costs associated with bankruptcy are reduced but do not fully cover the tax benefits of the debt, so the company's stock price rises in line with rising debt ratios. However, then the costs associated with bankruptcy have exceeded the tax benefits, so subsequent increases in the debt ratio will lower the value of the stock. There is the fact that many successful big companies use less debt than is stated in this theory. This leads to signaling theory (Houston & Brigham, 2006, pp. 37-38).

## 2.4. Pecking Order Theory

(Myers & Majluf, 1984) in pecking order theory states that firms with high profitability rates are low debt, due to high profitability companies with abundant internal funding sources. Internal funds are preferred because they allow companies to no longer open themselves from outside investors, if they can obtain the necessary resources without obtaining them from external investors as a result of the issuance of new shares. External funds are preferred in the form of debt rather than own capital on the grounds that: 1) bond issuance costs are cheaper than the cost of issuing new shares. 2) the manager is worried that the issuance of new shares will be interpreted as a bad result of the financiers and make the stock price down. Thus, the sequence of funding sources with reference to pecking order theory is internal funds, debt (debt), and equity (Kaaro, 2003:53 in (Widyaningrum, 2009, p. 14).

## 2.5. Leverage and Profitability Ratios

The most common ratios used to measure corporate leverage are Debt Ratio (DR) and Debt Equity Ratio (DER). Debt Ratio (DR) is the ratio between total debt (short term and long-term debt) with total assets.

$$DR = \frac{Total\ Debt}{Total\ Asset} \times 100\%$$

The higher the value of the Debt Ratio indicates that the greater the company's assets are financed through debt resources. If the debt ratio is higher, indicates that by increasing the debt will increase the risk of the company and at the same time increase the expected rate of return (Dewi, 2012).

Debt to Equity Ratio (DER) is the ratio between the total debt owned by the company against its own capital. This ratio is a ratio that measures how much the company's ability to pay off its obligations from the capital owned. The higher the DER, the less profit that is shared with the shareholders, on the contrary. the lower the DER the greater the profit earned by the shareholder. Debt to Equity Ratio (DER) can be formulated as follows.

$$DER = \frac{Total\ Debt}{Total\ Equity} \times 100\%$$

According to (Sartono, 2012, p. 122) profitability is the ability of companies to earn profits associated with sales, total assets and own capital. To know the level of profitability then used Return on Equity (ROE) and Return on Assets (ROA). Return on equity (ROE) is the company's ability to allocate earnings for shareholders over capital invested by shareholders (Arifin, 2001, p. 83). Return on equity (ROE) can be formulated as follows:

$$ROE = \frac{Earnings\ after\ Tax}{Total\ Equity} \times 100\%$$

The ratio of ROE shows how far the company can manage its own capital effectively. The higher the ROE the better the company and the higher also the level of return on shareholders.

The Return on Asset (ROA) ratio measures the company's ability to generate net income based on certain asset levels. Demonstrate the ability of the capital invested in the overall assets to generate profits for all investors (bondholders + stocks).

$$ROA = \frac{Net\ Profit}{Total\ Asset} \times 100\%$$

## 3. Research Method

The research was conducted explanatory using secondary data sourced from Indonesia Stock Exchange focus on manufacturing industry in LQ45 period 2012-2016 with total population of 25 companies and taken sample of 9 companies. To analyze and prove the existence or absence of relationship, strength of relationship and direction of relationship between variable leverage finance with profitability used correlation analysis tool Pearson.

*3.1. Interpretation of Correlation by (Sarwono, 2006)*

Strength The relationship between two variables seen from the number of correlation coefficient with the following criteria

- 0: There is no correlation between two variables
- > 0 - 0.25: The correlation is very weak
- > 0.25 - 0.5: Correlation is enough
- > 0.5 - 0.75: Strong correlation
- > 0.75 - 0.99: The correlation is very strong
- 1: Perfect Correlation (Sarwono, 2006)
- Significance of the relationship between two variables seen from the number Sig (2-tailed) with the following criteria.
- The significance of the research result <0.05, then the relationship between the two variables is significant.
- Result of research significance significance> 0,05, hence relation of second variable is not significant

The direction of the relationship between two variables is measured by looking at the positive or negative values of the correlation coefficient.

- If the positive correlation coefficient, then the relationship of the two variables is unidirectional. Unidirectional means if the variable X value is high, then variable Y is also high.
- If the correlation coefficient is negative, then the relationship of the two variables is not unidirectional. Not unidirectional means if the variable X value is high, then variable Y will be low.

## 4. The Research Result and Discussion

*4.1. The Research Result*

4.1.1. The Correlation Test between Variables X1, X2 and Y1

The correlation between variable DR (X1) and ROA (Y1), and DER (X2) with ROA (Y1) obtained the following results.

|       |                      | X1_DR | X2_DER | Y1_ROA |
|-------|----------------------|-------|--------|--------|
| X1_DR | Pearson Correlation  | 1     | ,890** | ,596** |
|       | Sig. (2-tailed)      |       | ,000   | ,000   |
|       | N                    | 45    | 45     | 45     |
| X2_DER | Pearson Correlation | ,890** | 1     | ,620** |
|       | Sig. (2-tailed)      | ,000  |        | ,000   |
|       | N                    | 45    | 45     | 45     |
| Y1_ROA | Pearson Correlation | ,596** | ,620** | 1     |
|       | Sig. (2-tailed)      | ,000  | ,000   |        |
|       | N                    | 45    | 45     | 45     |

*Table 1: Correlation between DR, DER, and ROA*
*\*\*. Correlation Is Significant at the 0.01 Level (2-Tailed)*

Correlations X1 and Y1 have a value of 0.596 which can be categorized as having a strong and positive relationship. This means that the higher the Debt Ratio the greater the Return on Asset. While based on the significance test the results show a value of 0.000 which means the association of both variables, DR with ROA is significant. Thus, the relationship between DR variables and ROA is strong, significant and directional.

Correlations X2 and Y1 have a value of 0.620 which can be criteria of having a strong and positive relationship. This means that the higher Debt Equity Ratio the greater the Return on Asset. While based on the significance test the results show a value of 0.000 which means the association of both variables i.e. DR with ROA is significant. Thus, the relationship between DER and ROA variables is strong, significant and directional.

### 4.1.2. Correlation Test between Variables X1, X2 and Y2

Pearson correlations between variable DR (X1) with ROE (Y2), and DER (X2) with ROE (Y2) obtained the following results.

|  |  | X1_DR | X2_DER | Y2_ROE |
|---|---|---|---|---|
| X1_DR | Pearson Correlation | 1 | ,890** | ,655** |
|  | Sig. (2-tailed) |  | ,000 | ,000 |
|  | N | 45 | 45 | 45 |
| X2_DER | Pearson Correlation | ,890** | 1 | ,824** |
|  | Sig. (2-tailed) | ,000 |  | ,000 |
|  | N | 45 | 45 | 45 |
| Y2_ROE | Pearson Correlation | ,655** | ,824** | 1 |
|  | Sig. (2-tailed) | ,000 | ,000 |  |
|  | N | 45 | 45 | 45 |

*Table 2: Correlations between DR, DER, and ROE*
*\*\*. Correlation Is Significant at the 0.01 Level (2-Tailed)*

Correlations X1 and Y2 have a value of 0.655 which can be categorized as having a strong and positive relationship or direction. This means that the higher the Debt Ratio the greater the Return on Equity. While based on the significance test, the results show a value of 0.000 which means the association of both variables i.e. DR with ROE is significant. Thus, the relationship between variable DR and ROE is strong, significant and directional.

Correlations X2 and Y2 have a value of 0.824 which can be criterised to have a very strong and positive relationship. This means that the higher Debt Equity Ratio the greater the Return on Equity. While based on the significance test, the results show a value of 0.000 which means the association of both variables i.e. DR with ROE is significant. Thus, the relationship between DER and ROE variables is very strong, significant and directional.

### 4.2. Discussion

The decision of a manufacturing company to fund assets with financial leverage or by debt based on test results whether or not the association between financial leverage and profitability shows that there is a strong and significant unidirectional relationship. This is in accordance with Trade-off theory, the higher the risk the more returns the company earns. This means that the consequences that arise with funding decisions with debt is the existence of fixed costs and interest expenses and high risk for the management of bankruptcy if unable to repay the debt borrowed. But on the other hand, with the capital of the debt then there is the flexibility of cash that can be used management for other productive activities that can generate greater profits.

The relationship between Debt Ratio (DR) and Return on Assets (ROA) is strong, positive and significant can be interpreted that the greater the company assets financed through debt resources, it will increase the risk of the company and will increase the expected rate of return. Similarly, a strong, positive and significant relationship between Debt Equity Ratio (DER) and Return on Assets (ROA) can be interpreted that an increase in cash flow from debt can increase the company's management opportunities to perform various activities that can improve the profitability of the company. The relationship between Debt Ratio (DR) and Return on Equity (ROE) is very strong, positive and significant can be interpreted that the greater the company assets financed through debt resources, it will increase the risk of the company and will enlarge its own expected rate of return. Likewise, very strong, positive and significant relationship between Debt Equity Ratio (DER) with Return on Equity (ROE) is interpreted that the capital structure policy involves the existence of an exchange between risk and return. The use of more debt will increase the risk borne by the shareholders. But greater use of debt will usually lead to expectations of higher return on equity.

This research is in line with previous researcher Akhtar (2012) which is strong, positive and significant for DER with ROA and ROE, and supports Rehman (2013) research for DER with ROA but not for ROE. This study also provides the

development of proving a positive, strong and significant relationship between DR and ROA and ROE. The clarity of the relationship between leverage ratio and profitability ratio of LQ45 manufacturing company in Indonesia Stock Exchange with positive, strong and significant result is very beneficial for investors. This means that with investment to the manufacturing company is prospective and a high rate of return.

## 5. Conclusion

In general, it can be concluded that the research results can reveal:

- There is a strong, positive and significant relationship between Leverage Ratio that is Debt Ratio (0.596) Sig (0.000), Debt Equity Ratio (0.620) Sig (0.000) with Profitability Ratio indicated by Return on Asset.
- There is a strong, positive, and significant relationship between Leverage Ratio that is Debt Ratio (0.655) Sig (0.000) with Profitability Ratios indicated by Return on Equity.
- There is a very strong, positive, and significant relationship between Leverage Ratio that is Debt Equity Ratio (0.824) Sig (0.000) with Profitability Ratio indicated by Return on Equity
- The optimal decision of the capital structure is proportional balanced of equity and debt.
- The Financing decision by debt, raises the consequences of costs and fixed expenses on borrowings to finance the investment.
- There is a trade-off between risk and return, the greater the company's assets are financed through debt resources, it will increase the risk of the company and will enlarge the expected rate of return.

## 6. Acknowledgment

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