

**EFFICIENCY OF CORPORATE INTERNATIONAL  
DIVERSIFICATION: EVIDENCE FROM INDONESIA  
MANUFACTURING FIRMS OVER PERIOD 2009-2013**

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**Abstract** -In a more globalized world, especially because of liberalization of trade, business practices are experiencing international market expansion and diversification. However, when a company become more internationally diversified, the firm performance of the company also will be affected naturally. Therefore, a simple question arises: “Does greater internationalization in a company lead to a better performance?”.

This research is conducted to help in explaining the relationship between internationalization and current firm performance using residual income approach. Residual income is considered as an appropriate measure for strategic performance because it comprises the financial risk, measured by cost of capital, and company’s profitability. Moreover, In order to know the international diversification and long term firm performance relationship, this research uses Tobin’s Q as the representation of incorporating expectations measure. The model has been tested at the sample of Indonesian companies in manufacturing sector from 2009-2013.

This research result indicated that the relationship between degree of internationalization and current firm performance follows a non-linear horizontal S-shape pattern, while the future performance, measured by Tobin’s Q follows an inverted U-curve pattern.

**Keywords:**degree of internationalization, firm performance, residual income, Tobin’s Q

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## **1. INTRODUCTION**

In a more globalized world, especially because of liberalization of trade, business practices are experiencing international market expansion and diversification. The international market expansion and diversification is not just limited by exporting products to the foreign markets, but also allocating production units overseas, employing resourced abroad (foreign direct investment), and cooperating internationally.

However, when a company become more internationally diversified, the performace of the company also will be affected naturally. Therefore, a simple question arises: “Does greater internationalization in a company lead to a better performance?”. There are many researches that have been conducted in order to know the relationship between the degree of internationalization (DOI) and firm performance. Kumar (2008) have found that international diversification has positive impact on company performance, based on empirical study in India firms.

On the other hand, Sullivan (1994) stated that the result from multinationality and performance is inconsistent. Actually, Sullivan hypothesized that the performance (measured by return on assets) declines, then increases, and decreases slightly as the degree of internationalization (measured by foreign revenue to total revenue), based on United Stated firms. Based on both findings, it can be concluded that the pattern of the relationship is divided into two types: linear (monotonic) and curvilinear. In addition, curvilinear is also split into three types: inverted U-shaped, standard U-shaped, and multiple waves(Boggs, 2003).

According to Ivashkovskaya & Shcherbakov (2014), the degree of internationalization could be classified as diversification of assets and diversification of markets. In general, diversification of assets is measured by foreign assets to total assets (FATA), while diversification of markets is measured by foreign sales to total sales (FSTS). Furthermore, firm performances are commonly measured as return on assets (ROA), return on investment (ROI), return on equity (ROE), or profitability (Santor, 2005).

Based on Nejadmalayeri (2004), most of “accounting basis” researches use only operating performance measure such as return on assets, return on equity, or operating profit margin, while lose the the financial-side effects which the primary result of the cost of capital adjustment. Therefore, the ignored financial-side effects might result in incomplete evaluation of current performance of internationalization. In order to know the current firm performance, both operational and financial side should be considered. Moreover, the current performance of international diversification should also be compared with long-term performance which is measured by Tobin’s Q (Oh & Rugman, 2010).

In the past few years, emerging market firms encounter a rapid growth in international activities (Garcia-Canal & Guillen, 2009). For example, the foreign direct investment of Russian companies have been growing about 40% annually (Plotnikov, 2010), and the agricultural exports in India climbed from \$5 Billion in 2003 to a record more than \$39 Billion in 2009 (United States Department of Agriculture - Foreign Agricultural Service, 2014).

Indonesia, as an emerging market country and part of Association of Southeast Asian Nations (ASEAN), has an interesting market conditions for research. Indonesia is going to face the ASEAN Economic Community (AEC) in the end of 2015. In this program, “AEC will establish ASEAN as a single market and production base with the goal of making ASEAN more dynamic and competitive” (ASEAN Secretariat, 2014). Moreover, there are five core elements of single market and production base: (1) free flow of goods, (2) free flow of services, (3) free flow of investment, (4) free flow of capital, and (5) free flow of skilled labour (ASEAN Economic Community, 2015).

By the existence of single market and production base in AEC program, the process of internationalization in ASEAN countries, especially in Indonesia, will automatically increase. According to official article from Ministry of State Secretariat of The Republic of Indonesia’s website, AEC might give Indonesia a

chance to be the country of export, where recently the value of Indonesian exports to intra ASEAN only 18-19% while outside ASEAN ranged 80-82% of the total exports (Chairil and Palma, 2014).

Thus, this research is going to study more about the degree of internationalization and firms performance model of manufacturing companies in Indonesia. The result of this study will explain in what extent Indonesia can manage the firm current and future performance based on the level of international diversification.

## **2. LITERATURES REVIEW**

### **2.1 ROCE – DOI Relationship**

Beamish & Lu (2004) stated that the most common pattern of operational efficiency performance measure and degree of internationalization was illustrated by the non-linear horizontal S-shape. Based on Rugman & Oh (2010), there were three intervals in sequence: low, medium and high level of internationalization.

First, at a *low level* of internationalization, the operational efficiency will decrease because the internationally adaptation costs from learning, overseas monitoring, and other foreign transaction, are higher compared to the “has not grown” foreign sales’ retribution.

Second, at a *medium level* of internationalization, the operating efficiency is increasing because of the benefits obtained from the diversification of international geographic risks, the increase in market power, the understanding of foreign knowledge, and many other factors.

Third, at a *high level* of internationalization, the operating efficiency may start falling again because of over internationalization stage and the high transaction cost because of unmanageable international complexity in the organisations.

However, based on empirical study in the emerging country such as India, the pattern of of operational efficiency performance measure and degree of internationalization was showed by a U-shape curve (Contractor, Kumar, &

Kundu, 2007). In their study, Contractor, Kumar, and Kundu presumed that in general, emerging countries would not be in the level of complexity which brought internationalization becoming value destroying. Therefore, this research assumes Indonesia, as one of the emerging countries, has the same pattern as India's.

*Hypothesis 1.1: The relationship between ROCE and DOI is non linear and follow an U-shape pattern for Indonesia manufacturing companies.*

Furthermore, Chang and Wang on his research “*The Effect of Product Diversification Strategies on The Relationship between International Diversification and Firm Performance*” found that a higher level of product diversification leads to the more positive impacts of internationalization to the firm performance (Chang & Wang, 2007). Hitt, Hoskisson, & Kim (1997) also discovered that actually international diversification – firm performance depends on the firm product diversification significantly.

*Hypothesis 1.2: The level of product diversification has a positive impact on operational efficiency of Indonesia manufacturing companies related to internationalization.*

## **2.2 WACC – DOI Relationship**

Singh & Nejadmalayeri (2004) stated that there was an increase of financial leverage, related to the international diversification. This statement is supported by the lower bankruptcy risks due to internationalization which leads to the increase of debt supply on capital market.

On the other hand, Doukas & Pantzali (2003) identified that international diversification leads to the lower debt supply by two reasons. The first reason is that the international diversification increases the agency cost of debt-holders because of the more complexity of a business design and higher growth rates. Moreover, the second reason is that the international diversification increases the amount of intangible assets which resulted in higher risk of debt holder as intangible assets cannot be monetized to solve a bankruptcy issue.

Reeb, Mansi, & Allee (2001) recognized that the increase of equity risk drives to the lower debt-holders risk, and vice versa. Therefore, the research assume that debt and equity compensate each other and do not change due to internationalization as a cost of capital.

*Hypothesis 2.1: A combination of debt and equity in capitalstructure does not depend on DOI for a sample of Indonesia companies in manufacturing industry.*

Reeb, Kwok, & Baek (1998) examined that U.S. international firms have a greater cost of equity related to the internationalization. The greater cost of equity might be the result of growing shareholders' agency cost to monitor and control the firms internationally, and the change in capital structure. Besides, Ivashkovskaya & Shcherbakov (2014) stated that there is a change in level of risks of shareholders due to degree of internationalization. In the beginning stage of internationalization, there is an additional risk for shareholders as the market segment has an expansion in a new overseas location. Meanwhile, in the later stage, shareholders could expect a decrease of risk because of its diversification.

*Hypothesis 2.2: Cost of equity increases with international diversification and follows U-shape form relationship for a sample of internationalized Indonesia companies in manufacturing industry*

Most of multinational companis raise a longer term debt than the domestic companies (Singh & Nejadmalayeri, 2004). Therefore, this change in debt maturity brings the cost of debt to be increased.

*Hypothesis 2.3: Cost of debt is growing with an increase in DOI for a sample of Indonesia companies in manufacturing industry*

### **2.3 Tobin's Q – DOI Relationship**

Tobin's Q is the expectations of shareholders who are mostly a long-term focused investors, about firm's future profitability (Zhou, 2009). In the early stage of internationalization, most of companies will perform a poor result (Gaur & Lu, Ownership strategies and subsidiary performance: Impacts of , 2007). Moreover,

Eriksson, Johanson, Majkgård, & Sharma (1997) considered that the early stage of internationalization was a kind of investment process. This explains that a long-term benefits of international diversification can not be gained within a current period. Thus, Tobin's Q which represents the shareholders expectations in the future, should receive the long term benefits of internationalization. In fact, Loncan & Nique (2010) found that a higher degree of international diversification of sales is associated to positive returns regarding of Tobin's Q.

*Hypothesis 3.1: Tobin's Q increases with the increase of internationalization for Indonesia companies in manufacturing industry.*

### **3. RESEARCH METHODOLOGY**

This research uses experiment form of research by applying quantitative techniques to collect data. An experiment's intention is to analyze causal links between independent and dependent variables. This research has a purpose to determine the effect of internationalization and firm performance for operational and financial efficiency.

Secondary data is being used in this research which covers the financial reports of manufacturing companies from 2009-2013 and other required secondary data. Moreover, these financial reports can be obtained from Indonesia Stock Exchange on [www.idx.co.id](http://www.idx.co.id).

In addition, the data that has been collected, forms a panel data which refers to a combination of multi-dimensional data and multiple time periods. This study uses a ratio measurement level because it is an useful management tool for understanding of financial results and trends over time. Furthermore, the ratio also provides key indicators of organizational performance.

The population of this study is manufacturing companies which are listed in Indonesia Stock Exchange from 2009 to 2013, which have to fulfill some specific criterias such as publishing financial statements every year from 2009 through 2013 and having available data for all variables needed for this research. Based on

these criterias, the number of samples used in this study is 50 manufacturing companies with the observation period from 2009-2013. As a result, there are 250 number of observations.

The model of analysis used OLS multiple regression on linear and non-linear models.

### 3.1 ROCE and DOI Relationship

Linear Model:

$$ROCE = X. \delta + \alpha 1.fsts + \varphi$$

Quadratic Model:

$$ROCE = X. \delta + \alpha 1.fsts + \alpha 2.fsts^2 + \varphi$$

Cubic Model:

$$ROCE = X. \delta + \alpha 1.fsts + \alpha 2.fsts^2 + \alpha 3.fsts^3 + \varphi$$

Where X is a matrix of the following control variables: firm size (measured by logarithm of sales, *ln\_sales*), product diversification (measured by Herfindahl-Hirschman Index calculated on the basis of product segmentation disclosed by firms in their financial statements, *prod\_divn\_hhi*), managerial agency costs (inverse of assets turnover ratio, *asset\_turnover*), and composite variables of DOI and product diversification (*diverse*). The composite variables of DOI and product diversification is required for testing hypothesis 1.2.

### 3.2 Capital Structure and DOI Relationship

Linear Model:

$$Debt\_to\_assets = \beta 0 + \beta 1.fsts + \beta 2.ROE3 + \beta 3.growth3 + \beta 4.ln\_sales + \varepsilon$$

Quadratic Model:

$$Debt\_to\_assets = \beta 0 + \beta 1.fsts + \beta 2.fsts^2 + \beta 3.ROE3 + \beta 4.growth3 + \beta 5.ln\_sales + \varepsilon$$

Cubic Model:

$$Debt\_to\_assets = \beta 0 + \beta 1.fsts + \beta 2.fsts^2 + \beta 3.fsts^3 + \beta 4.ROE3 + \beta 5.growth3 + \beta 6.ln\_sales + \varepsilon$$

### 3.3 CoD and DOI Relationship

Linear Model:

$$CoD = \varphi_0 + \varphi_1.fsts + \varphi_2.ROE3 + \varphi_3.growth3 + \varphi_4.ln\_sales + \varphi_5.debt\_to\_assets + \varepsilon$$

Quadratic Model:

$$CoD = \varphi_0 + \varphi_1.fsts + \varphi_2.fsts^2 + \varphi_3.ROE3 + \varphi_4.growth3 + \varphi_5.ln\_sales + \varphi_6.debt\_to\_assets + \varepsilon$$

Cubic Model:

$$CoD = \varphi_0 + \varphi_1.fsts + \varphi_2.fsts^2 + \varphi_3.fsts^3 + \varphi_4.ROE3 + \varphi_5.growth3 + \varphi_6.ln\_sales + \varphi_7.debt\_to\_assets + \varepsilon$$

### 3.4 CoCE and DOI Relationship

Linear Model:

$$CoCE = \gamma_0 + \gamma_1.fsts + \gamma_2.ROE3 + \gamma_3.growth3 + \gamma_4.ln\_sales + \gamma_5.debt\_to\_assets + \varepsilon$$

Quadratic Model:

$$CoCE = \gamma_0 + \gamma_1.fsts + \gamma_2.fsts^2 + \gamma_3.ROE3 + \gamma_4.growth3 + \gamma_5.ln\_sales + \gamma_6.debt\_to\_assets + \varepsilon$$

Cubic Model:

$$CoCE = \gamma_0 + \gamma_1.fsts + \gamma_2.fsts^2 + \gamma_3.fsts^3 + \gamma_4.ROE3 + \gamma_5.growth3 + \gamma_6.ln\_sales + \gamma_7.debt\_to\_assets + \varepsilon$$

### 3.5 Tobin's Q and DOI Relationship

Linear Model:

$$Tobin's\_Q = Y.\delta + \alpha_1.fsts + \varphi$$

Quadratic Model:

$$Tobin's\_Q = Y.\delta + \alpha_1.fsts + \alpha_2.fsts^2 + \varphi$$

Cubic Model:

$$Tobin's\_Q = Y.\delta + \alpha_1.fsts + \alpha_2.fsts^2 + \alpha_3.fsts^3 + \varphi$$

Where Y is a matrix of control variables, which include: firm size (*ln\_sales*), product diversification variable (*prod\_divn\_hhi*), proxy for agency cost measure

(*asset\_turnover*), composite variables of DOI and product diversification (*diverse*), three year average return on equity (*ROE3*), EBIT Margin in current year (*Ebit\_margin*), three year average sales growth rate (*Growth3*).

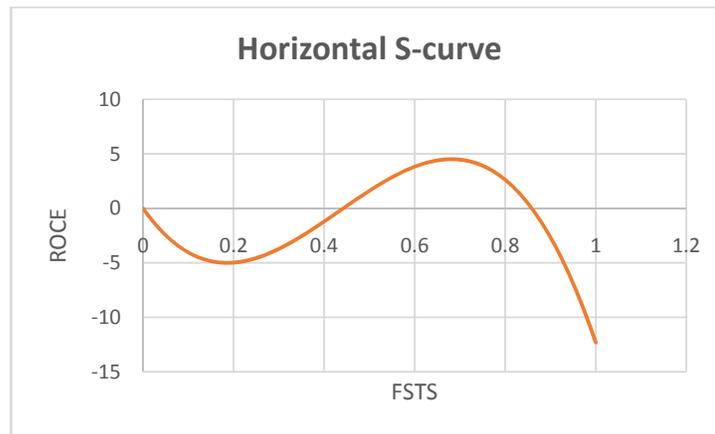
#### 4. RESULT AND DISCUSSION

##### 4.1 Discussion of The Result of Testing DOI to ROCE Relationship

According to the tests result on the previous chapter, the degree of internationalization measured by foreign sales to total sales with cubic equation is significant to the ROCE.

Figure 4.1

Internationalization and ROCE Relationship – Cubic Equation



Based on the figure above, there are three stages of internationalization: low, medium, and high. In the low stage, the return on capital employed is slightly decreased. The drop in ROCE may be explained by the less ability to negotiate contracts and transfer knowledge with another country, or there is additional costs from learning, overseas monitoring, and other foreign transaction.

Moreover, the low stage does not last long, when the internationalization (FSTS) reach around 18%, the companies start entering the medium stage. In this stage, a sharp growth in profitability has been recognized. The companies seem to be more experienced with the evolution of process internationalization. There are many benefits obtained from the diversification of international geographic risks, the increase in market power are the understanding of foreign knowledge.

At a high level of internationalization (FSTS > 67%), the profitability may start falling sharply because of over internationalization stage and the high transaction cost generated because of unmanageable international complexity in the organisations. The companies are required to coordinate the different geographical segmentation. It is also supported by the relationship between exchange and international trade. Auboin & Ruta (2011) found that when a company trades internationally, the long term effect of currency differentiation can cause a market distortion, which arised from in information problem. Therefore, the coordination, monitoring, and controlling costs increase and lead to the lower performance.

On the other hand, the researcher also found that the relationship between return on capital employed (ROCE) and degree of internationalization follows an J-shape pattern, according to the quadratic model.

Figure 4.2

Internationalization and ROCE Relationship – Quadratic Equation

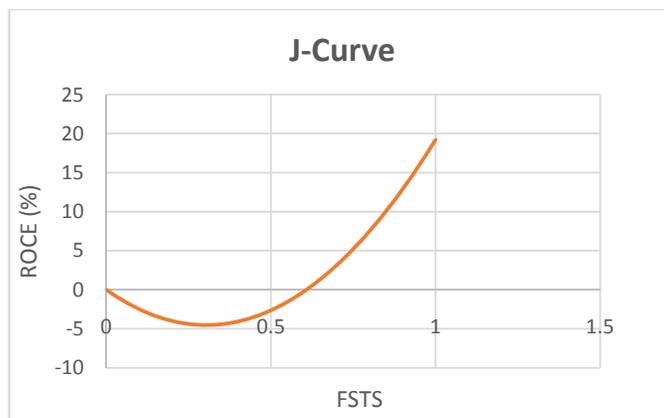


Figure 4.2 identified that the ROCE and DOI relationship does not follow a U-shape pattern (as hypothesized before), but more to be a J-shape pattern. Furthermore, J-shape curve is similar with U-shape, however J-shape curve has two different sides length: long on the right side while the left side is shorter.

At the early stage of internationalization, the return on capital employed (ROCE) for a sample of Indonesian companies in manufacturing sector from 2009-2013 is

slightly decreased. This insignificant decline may be caused by the small additional costs for learning in the new geographical segment market.

On the other hand, at the later stages, the operating efficiency is significantly increased. The companies start accruing benefits from the increase in market power, technological competences, and knowledge generated in foreign markets that developed during the early stage. Besides, at the level of absolute international diversification (FSTS>60%), the subsequent growth has compensated the initial drop from the early stage.

In addition, it is also identified that the product diversification which measured by Herfindahl – Hirschman Index, has a significant linear relationship with the firm performance.

Figure 4.3  
Product Diversification and ROCE Relationship

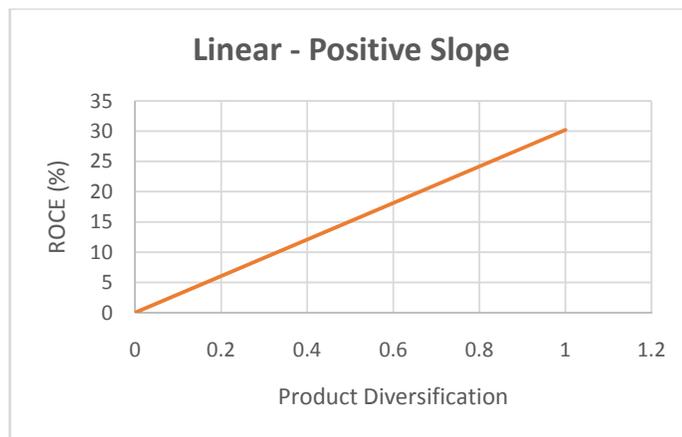


Figure 4.3 shows that the level of product diversification has a positive impact on ROCE of Indonesia manufacturing companies related to internationalization. The increase of firm performance based on product diversification may be explained by the economy of scope concept. When the variation of the product is increase, the averaget of total cost is decreased, and leads to the higher profitability.

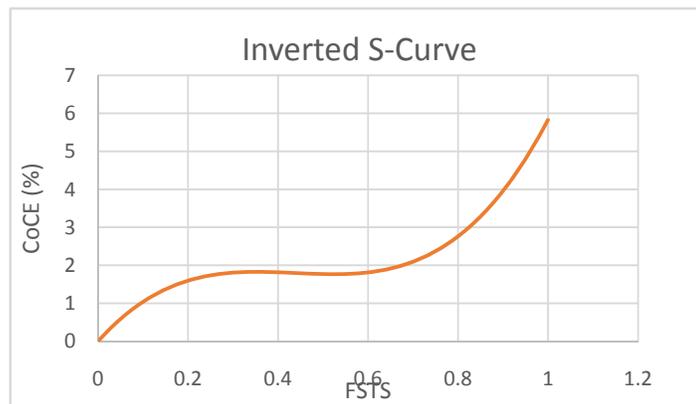
#### 4.2 Discussion of The Result of Testing DOI to WACC Relationship

After conducting linear and non linear testing model, the researcher did not find any significant result between capital structure to DOI. Therefore, a separate estimation between cost of debt and cost of common equity has been tested to know the influence of internationalization on capital structure.

The internationalization to cost of common equity (CoCE) has been tested using both linear and non linear estimation. Both estimations shows a significant result. The cubic estimation (non linear) is illustrated by inverted S-curve, while the linear estimation is outlined with positive slope.

*Figure 4.4* demonstrates the CoCE to DOI relationship using the cubic equation. There are three levels of going internationally in this curve.

Figure 4.4  
DOI and CoCE relationship – Cubic Equation

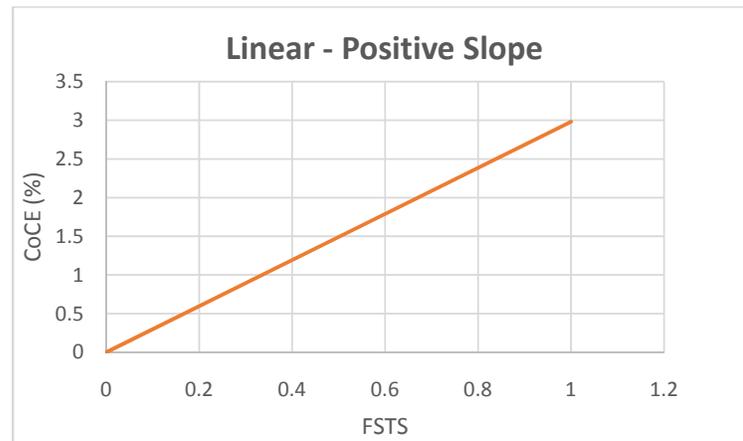


At the initial level (FSTS < 31%), the shareholders are expecting more returns of their investment regarding the higher risk of the internationally expansion in the first time. Moreover, after the internationalization growth becomes more than 31%, it is classified as medium level. In the medium level, the cost of common equity rate is about constant. The shareholders seem already have confidence in the company's management when going internationally. However, at the last level, when the internationalization is more than 60%, the return that shareholder require is dramatically increased. This may be explained by the rise of the shareholders' agency cost. When a company becomes more global, the

complexity of the company's management also increases. Therefore, the shareholder's agency cost rises because of the increasing in cost needed to monitoring and controlling the company's management.

However, this rise in the financial performance result is against the portfolio theory. Based on the Eiteman, Moffett, & Stonehill (2012) in the Multinational Business Finance Book, the portfolio theory is about international diversification activities could reduce the risk of multinational companies' assets portfolio. The reduction from the risk side will add a value which resulting in the lower cost of capital.

Figure 4.5  
DOI and CoCE relationship – Linear Equation



Furthermore, the relationship between CoCE and DOI also can be explained by using linear model. As shown in *figure 4.5*, the cost of common equity is growing with an increase in internationalization. The shareholders seem to be are expecting more returns of their investment regarding the higher risk of the internationally expansion in the first time. Another analysis is the complexity in management when going internationally, bring the shareholders' agency cost becomes higher to control and monitor the firm.

Another component of the cost of capital is the cost of debt. Based on the regression result, the degree of internationalization and cost of debt has a significant relationship using linear model.

Figure 4.6  
DOI and CoD relationship – Linear Equation

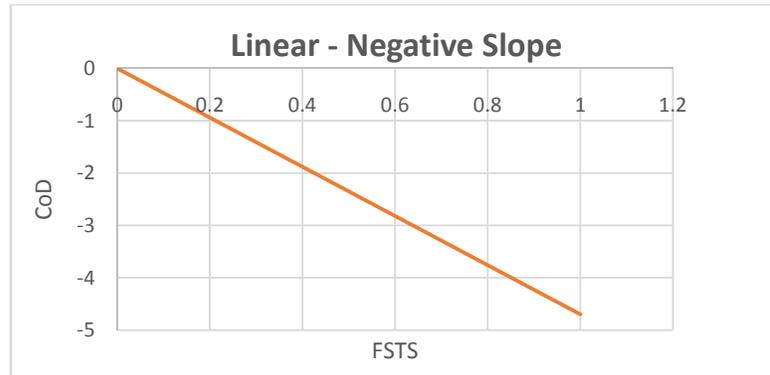
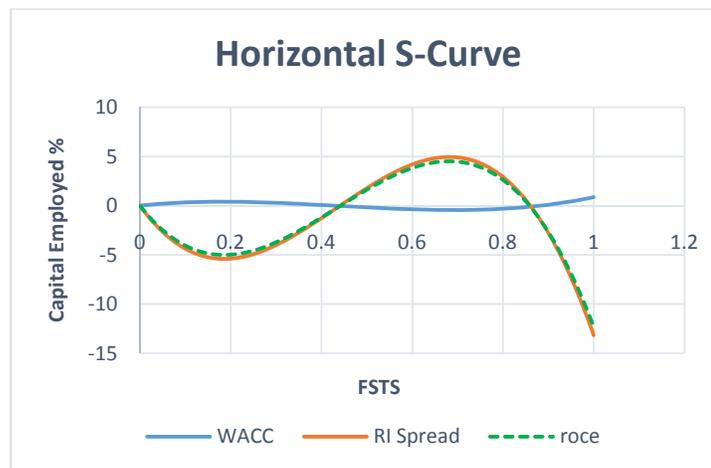


Figure 4.6 illustrates the negative impact of internationalization to cost of debt. The bankruptcy risks become lower due to international diversification, which leads to the decrease of cost of debt on capital funding. A company’s risk can be reduced because an international company is able to arbitrage the revenue or the cash flow from geographical segmentation.

### 4.3 Discussion of The Result of Economic Profit

Figure 4.7  
DOI and Residual Income relationship



The economic profit concept (residual income) measures both both operational and financial efficiency for firm performance. In figure 4.7, the researcher uses economic profit spread which calculated by a difference in return on capital

employed (ROCE) and weighted cost of capital (WACC). The figure shows that the residual income ratio (RI spread) follows a horizontal S-curve, similar with ROCE's pattern. Therefore, the influence of WACC on the residual income is considered low.

Furthermore, the overall of internationalization and firm performance is described in 3 stages:

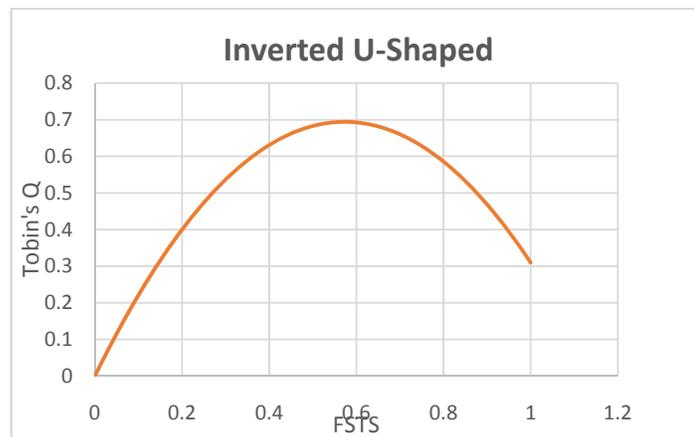
- At the initial stage, the degree of internationalization is approximately between 0 – 18%, the companies may lose around 5% of their residual income spread.
- At the medium stage, when the international diversification grows from 19% to 68%, the residual income spread of the company is also increased about 10%. When reaching the international level at 45%, the residual income spread becomes surplus.
- However, at the last stage, after the internationalization is more than 68%, the residual income spread falls dramatically. At the 90% level of internationalization, the companies even start to lose again.

#### 4.4 Discussion of The Result of The Estimation of DOI to Tobin's Q Relationship

After conducting the test, the researcher find that there is linear and non linear relationship between Tobin's Q and DOI. The non linear model follows the inverted U-shape pattern, while the linear model follows the positive pattern.

Figure 4.8

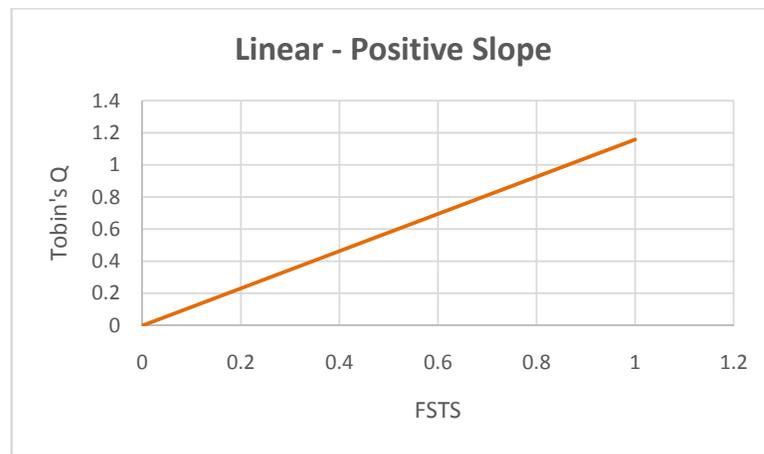
DOI and Tobin's Q relationship – Quadratic Equation



According to *figure 4.8*, the inverted U-shape curve consists of two stages. The first stage is the start of internationalization, which the DOI is between 0 and 0,57. On this stage, the investor expectation's of the firm's future performance is growing related to the internationalization. When a firm is going internationally, the investor believe that there is a value creation comes up from the potential benefits such as getting knowledge, market power, and access to technology. The next stage occurs when the DOI is higher than 0,57. The company suffers because of the the high transaction cost due to unmanageable international complexity in the organizations. Therefore, there is a drop in investor expectation's of the firm's future performance which measured by Tobin's Q.

Figure 4.9

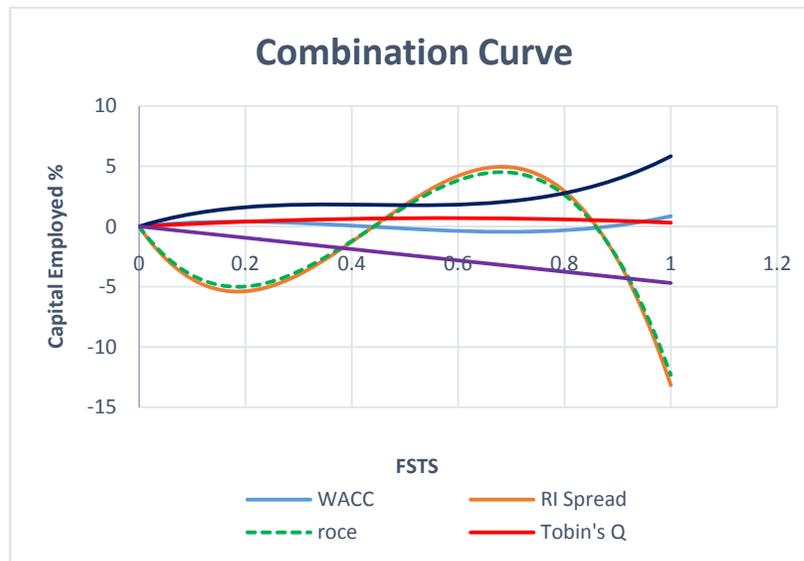
DOI and Tobin's Q relationship – Linear Equation



Moreover, based on the linear model, *figure 4.9*, shows that the Tobin's Q increases with the increase of internationalization. The reason may be explained by the investor believe that there is a value creation comes up from the potential benefits when a company going internationally.

## 4.5 Internationalization and Overall Firm Performance

Figure 4.10  
DOI and Overall Firm Performance



From the *figure 4.10*, it can be seen that there is a decline in ROCE in the early stages. At the same time, the CoCE is increased. It shows a correlation that investors expect a high return to compensate the risk of low profitability when a company starts to go international. Moreover, the Tobin's Q is increasing even though the ROCE shows a decline in the first stage. This may be explained because investors believe that there is a value creation that comes up from the potential benefits such as getting knowledge, market power, and access to technology when a firm starts going internationally.

Furthermore, when the ROCE starts to rise in the medium level, the risk for the investors becomes lower. As a result, there is a decline in the cost of capital. However, the Tobin's Q keeps growing. At the last stage, there is a significant drop of ROCE. The CoCE starts going up dramatically, while the Tobin's Q is decreasing. The cost of Debt (CoD) keeps decreasing from the beginning until the last stage of internationalization.

## 5. CONCLUSIONS AND RECOMMENDATIONS

Based on the result of research and statistical test conducted, it can be obtained a conclusion from six main hypothesis that have been formulated before.

1. The relationship between ROCE and DOI is non-linear and does not follows an U-shape, but J-shape pattern for Indonesia companies in manufacturing industry. In addition, the relationship between ROCE and DOI also follows a horizontal S-curve pattern.
2. The level of product diversification has a positive impacts on operational efficiency of Indonesia companies in manufacturing industry related to internationalization.
3. A combination of debt and equity in capital structure does not depend on DOI for a sample of Indonesia companies in manufacturing industry.
4. Cost of equity increases with international diversification and does not follows U-shape, but inverted S-shape form relationship. Moreover, cost of equity also follows a positive linear pattern with the degree of internationalization.
5. Cost of debt is decreasing with an increasing in DOI for a sample of Indonesia companies in manufacturing industry.
6. Tobin's Q increases with the increase of internationalization and follows inverted U-shaped pattern for Indonesia companies in manufacturing industry. In fact, a positive linear relationship also found in Tobin's Q and internationalization relationship.

The finding of this result provides suggestions to the manufacturing companies in Indonesia.

- a. The companies should be prepared about the possible decline of operating efficiency in the initial stage of internationalization. Eventhough some adaptation costs such as learning cost and overseas monitoring cost, can not be avoided, the companies have to ensure that those costs will generate benefits in the future.
- b. Based on the multiple regression test, the international diversification and operating efficiency follows J-curve and S-shape pattern significantly.

Therefore, the companies should consider their decision very carefully in the high level of internationalization. According to S-shape pattern, the operating efficiency may start falling sharply because of over internationalization stage and the high transaction cost generated because of unmanageable international complexity in the organisations.

- c. Not only from operational efficiency side, financial effects also has an important part to analyze the international efficiency.

In the end, this study has a limitation. This limitation can open up opportunities for further research in the future.

- a. The limitation is that researcher only investigated about Indonesia companies in manufacturing sector. Future research can examine the relationship between internationalization and firm performance in a different sector and add the amount of the sample for the more accurate result.
- b. Moreover, the relationship between the product diversification and firm performance needs to be identified deeper. In this research, the writer only did the test using the linear multiple regression. The future research may perform the non-linear regression to find another relationship pattern.

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