Asset Specifications, Financing Decisions and the Impact on Financial Performance: A Perspective of Economic Transaction Cost Theory

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ABSTRACT

The asset specification level determines the financing decision. Transaction theory suggests that assets with high specifications level are financed with debt, while assets with low specifications level should be financed with equity. This study aim is to analyze the effect of asset specification on debt financing decision and the impact on finances. Data was collected from manufacturing companies listed on Indonesian Stock Exchange for 2010 to 2017 period. Data analysis is multiple linear regression and probit regression. The findings showed that asset specification did not become basis for financing decisions. The high asset specification gives opportunity to make debt financing decision but the directions is reverse with theory. The study findings also showed that debt financing decision will decrease the financial performance if the company has high asset specification.

Keywords— asset spesification, financing decision, financial performance, economic transaction cost

1. INTRODUCTION

Not all companies start a business with high level of complexity, including the open (Go Public) companies. Not complex activities will affect the fixed assets usage, mainly related to technology. These assets usage lead to financing decisions of the company. The financing types to finance investments are current investment (working capital) and fixed asset investment. These are debt and equity financing type. This financing decision is related to transaction costs economics. Foss [1] in [2] suggested it as an important concept in economics related to financial elements. Knight [3] has related the uncertainty in entrepreneurial management with the importance of assessment at entrepreneur's side, which finally relates organization assets and company employees [4].

Companies have potential assets to make company managers think about how to use these assets to get high value in long run. Reference [2] divided asset characteristics into (1) specification assets and (2) non-specification assets. Failure to align the financing types with unique assets owned by company can damage the company. Theory of transaction costs economics stated that companies projects with very specific assets should use equity than debt funding [5],[6].

Debt is a financing type that suitable for general investment types. If the project goes bad, creditor can take over the assets and move it to other alternatives with low productive loss value. Conversely, more specific assets will be more difficult to move, so debt financing will less favourable [5],[6]. The company may decide to scarify special investment features with greater chance to move, or may choose a funding type that more suitable for specific assets.

Reference [2] said that in more specific technology, the failure company will difficult to sell it in secondary market. Therefore, higher technological uniqueness tends to be funded by equity. Reference [5] emphasized that companies with very specific assets projects should use more equity financing not debt financing; it has implications to company performance.

The transaction costs economics also has implications to company's performance. Reference [2] stated and proved that failing to harmonize the governance structures with asset uniqueness will damage the company. Reference [7] examined 190 IT projects and showed that companies prefer to use employees in companies for higher asset uniqueness.

This research develops the research of [2] on entrepreneurial finance who exploring the effect of asset specifications on financing decisions in new small business and established in 2003. This research was conducted on go public companies with larger assets to find the consistency of financing decisions in established business cycles. The theory of entrepreneurial financial management explained that financing decisions was adjusted to business life cycle. Reference [2] research did not examine the effect of financing decisions on company performance. In addition, the control variable is consistent with research object, namely SMEs within start-up business cycle. This research uses liquidity, firm size, company diversification, and company age as control variables because the research objects are go public companies at Indonesia Stock

Exchange. Based on research gab, this research examines financing decisions and the impact on financial performance based on perspective of transaction cost economics theory.

2. THEORETICAL REVIEW

2.1. Capital Structure

Growth in sales requires growth in operating capital, and this often needs external funds from a combination of equity and debt. Reference [8] defined this combination as capital structure. Reference [9] also defined capital structure as a combination of long-term permanent company financing in form of long-term debt, preferred stock, and common equity. It can be concluded that capital structure is a combination company financing in long term that consists of long-term debt and total equity which includes ordinary or preferred shares, capital surpluses and retained earnings.

Financial theory explains that companies use capital structure as a financing policy that plays an important role to increase the firm value. In traditional approach, managers can increase the total firm value through optimal capital structure where the optimal capital structure can minimize the capital costs [9]. The larger portion of debt can accelerate the company growth and the dividends distribution to investors becomes larger [10]. Larger dividends distribution will increase firm value as measured by earnings per share (EPS).

2.2. Theory of Transaction Cost Economics

Theory of transaction cost economics focuses on contractual relations and question of whether transactions are better managed by companies than market. Transaction change from market to company involves a trade off of high incentive benefits (found in market) to get benefit of coordinated adaptation (found within company). References [11], [12] put the basics theory. The main prediction is the transactions with higher uniqueness of assets are more likely to be managed within company, ceteris paribus.

The transaction costs economics also has implications to company's financial performance. Other research has stated and demonstrated that failure to align governance structures with unique assets has adverse consequences for companies. Reference [7] studied 190 IT projects and showed that companies were more likely to use employees in company when the asset uniqueness increased. The company also showed that failure to align contractual arrangements with unique assets has a negative effect on profitability. Reference [13] examined the R&D alliance in telecommunications industry and showed that number of patents is lower when the alliance contract is not aligned with attribute of project's basic asset. Reference [14] put main predictions that transaction costs economics have been empirically documented in various researches, including industrial, marketing, financial, accounting, and legal organizations.

References [5] and [6] used theory of transaction costs economics to suggest that company's projects with very specific assets will be more likely to use equity than debt financing. If the project goes bad, debtor can take over the assets and move it to other alternatives that have low productive loss value. Conversely, more specific assets will be more difficult to move, so debt financing will be offered with less favourable terms.

2.3. Financial performance

The company's financial performance is measured from financial aspect. One aspect assessed in financial performance is profitability. Profitability is the net result of a number of policies and decisions [8]. Profitability is measured by ratios to measure the effectiveness of a company's operations. Ratios to measure profitability are: (1) net profit margin, (2) operating profit margin, (3) gross profit margin, (4) basic earning power, (5) return on total assets, and (6) return on equity. This research uses profitability ratio of return on total assets to measure financial performance. The formula to calculate the return on assets is adopted from [8].

$$Return\ On\ Total\ Assets\ (ROA = \frac{net\ income\ availlable\ to\ stockholders}{total\ assets} \qquad (1)$$

2.4. Conceptual Framework and Hypothesis

The conceptual framework comprehensively is based on theory, previous studies, research methods and analysis method, in accordance with the objectives and model to guide this research analysis. The relationship between concepts is visualized in Fig. 1.
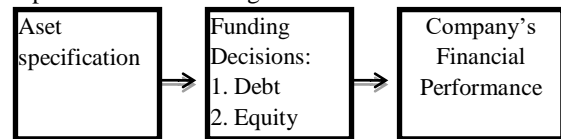

Figure 1. Research Conceptual Framework

Based on the problem and conceptual framework of research, the research hypotheses can be stated below.

H1. Assets with high specifications have a significant and negative effect on debt financing decisions

H2. Assets with high specifications have a significant and negative effect on high debt financing decisions

H3. High debt financing has a significant negative effect on company's financial performance if the assets have high specifications

3. RESEARCH METHODS

Research Approach

This research uses a positivist (quantitative) approach. The positivist approach is based on empirical rational principles.

Positivist researchers assume that reality actually exists and can be described through measurable variables.

Research Types

This is explanatory research type to test hypotheses. Hypothesis is intended to explain causal relationship between the research variables, namely the affected variable (the dependent variable) and affecting variables (independent variable).

Research Period

This research was conducted in 2010-2017 period.

Population and Sample

The population is manufacturing companies listing in Indonesia Stock Exchange (IDX). The samples have following criteria:

1. The company was never delist during the research period.
2. The company publishes financial statements during the research period
3. The company has financial statements in rupiah
4. The company reports in detail the types of fixed assets
5. The company did not have a negative retained earnings during the research period

Based on above criteria, all selected companies can be used as research samples. Thus this research uses saturated or census sampling technique. Total observations based on critical isolation criteria are 368 unit.

Data Collection Methods and Types

This research uses secondary data source type. The data is collected by documentation method.

Identification and Definition of Research Variables

Company financial performance (Y) is the dependent variable to show the company's performance in a financial perspective. Proxies to measure financial performance are Return on Assets (ROA). ROA calculation is adopted from [8].

$$ROA = \frac{net\ income\ available\ to\ stockholders}{total\ assets} \quad (2)$$

Financing Decision (Z) is an intervening variable related to managers' decisions to the funds type usage for company's funding. This financing decision covers two types, namely financing with debt and financing with equity. Financing decisions calculation is adopted from [8].

$$Debt\ Ratio = \frac{long\ term\ debt}{equity} \quad (3)$$

Asset specifications (X) are independent variables to show the asset uniqueness. There are two types of asset specifications. First is physical asset, consisting of machinery and special equipment that cannot easily transferred to other usages. Second are intangible assets such as Goodwill and / or Intellectual Property Rights (Patent, Trademark, Copyright). These physical assets are referred to as "other assets" by [2] and formulated below.

$$Other\ assets = \frac{Machine\ and\ equipment}{total\ assets} \times 100\ \% \quad (4)$$

Description :

Assets specification = 1 if the company has Goodwill and / or Intellectual Right

Assets specification = 0 if the company does not have Goodwill and / or Intellectual Right

The assets specification is measured by first proxy because manufacturing companies listed on Indonesia Stock Exchange tend to have intangible assets.

Data analysis method

Data analysis methods are grouped into two. First is descriptive statistical analysis to determine the characteristics of company based on indicators of each research variable. Second is inferential statistical analysis to test the research hypotheses. Multiple linear regression and logistic regression are used to meet the research objectives.

4. RESEARCH RESULTS AND DISCUSSION

Descriptive Analysis

Descriptive statistics are presented in Table 1.

Table 1. Results of Descriptive Statistics Calculation

Variable	Obs	Mean	Std. Dev.	Min	Max
thn	368	2013.5	2.294407	2010	2017
Debt_Ratio	368	.4017709	.1727645	.0943033	.9854657
CodeDR	368	.3206522	.4673627	0	1
ROA	368	10.87851	9.6661	.0757194	81.60531
Aset_Spesi~i	368	31.86288	19.88294	1.950592	98.77041
CodeAS	368	.4429348	.4974092	0	1
Current_Ra~o	368	2.508171	1.685853	.027246	11.74282
Firm_Size	368	23.4258	5.474824	11.63388	30.4414
Diversifik~i	368	9.82337	16.55636	1	111
Umur_Perus~n	368	39.95652	17.04165	1	112

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. probit CodeDR Aset_Spesifikasi

Iteration 0:   log likelihood = -230.86851
Iteration 1:   log likelihood = -230.68564
Iteration 2:   log likelihood = -230.68564

Probit regression                               Number of obs   =        368
                                                LR chi2(1)      =       0.37
                                                Prob > chi2     =     0.5453
Log likelihood = -230.68564                     Pseudo R2       =     0.0008
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CodeDR	Coef.	Std. Err.	z	P>|z|	[95% Conf. Interval]	
Aset_Spesifikasi	.0020572	.0034012	0.60	0.545	-.004609	.0087234
_cons	-.5317935	.128677	-4.13	0.000	-.7839959	-.2795912

Source: Processed Financial Statements of Manufacturing Company listed in Stock Exchange

Table 1 show that assets specification has an average value of 31,86288 and a standard deviation of 19.88294. This means that magnitude asset specifications used by company operations have high level variation as reflected by high standard deviation. This is due to sample companies covering all manufacturing companies listed in Indonesia Stock Exchange which consist of three categories of manufacturing companies, namely Basic and Chemical Industries, Various Industries, and Consumer Goods Industries. They have different characteristics to produce products and assets needed also very different.

The long-term debt financing policy used in financing assets with high specifications has an average of 40.17709% with a standard deviation with small difference in magnitude because the standard deviation results are below the average

value. This research results also show that debt financing is still an important source of financing for manufacturing companies listed in IDX. More than 40% of company's capital structure is supported from external sources, namely long-term debt.

The results of descriptive statistical calculations show that company's financial performance proxied by Return on Assets (ROA) has an average value of 10.87851% and standard deviation of 9.66661%. This shows that the company's financial performance is not much different in ROA, as evidenced by average ROA value is lower than the standard deviation value.

Hypothesis testing

Hypotheses are tested by Stata software program. Two models are tested differently. Multiple linear regression analysis is used to test the first and third hypotheses, while probit regression analysis is used to test the second hypothesis.

The multiple linear regressions are used to test first hypothesis with a hope to get conformity of financial structures to asset specifications through the high technology usage by companies in production process. This self-selection will produce estimates that are biased towards performance. One way to overcome self-selection is a "switching" regression analysis model [15]. The second hypothesis test is based on [7] with in self-selection approach in governance structure research .

4.1 Effect of high specification assets on debt financing decisions

Table 2 shows a summary of regression analysis to examine the model.

Table 2. Summary of Calculation Results for Multiple Linear Regressions

Variables	Coefficient	Sig. t	Description
Asset Specification	-0.0007021	0.345	Insignificant
R square: 0.3413			

Source: Multiple Linear Regression Calculations

The model from multiple linear regression calculation is below:

$$Y_{it} = 0.4838 - 0.0007021\ Asset\_Specification_{it} + X_{it} \quad (5)$$

Table 2 shows that Asset Specification (X) does not have a significant effect on debt financing decisions (Y). The significance value is larger than alpha (0.345> 0.05). Therefore, first hypothesis that asset specification has a significant negative effect on debt financing decisions is rejected.

The coefficient of determination value is 0.3413 or 34.13%. This means that total variance of debt financing decision variable can be explained by asset specification and control

variables of 34.13%. The rest is explained by other variables outside this research model.

4.2 The effect of high specification assets on high debt financing decisions

Table 3 shows a summary of statistical results of probit regression analysis.

Table 3. Summary of probit regression calculation

Variable	Coefficient	Sig. t	Description
Asset Specification	-0.0099828	0.000	Significant

Source: Probit Regression Calculation

The model from probit regression calculation is below:

$$g(x) = -0{,}0099\ Asset\_Specification + X_{it}$$
$$\ln\left(\frac{\pi(x)}{1-\pi(x)}\right) = -0{,}0099\ Asset\_Specification + X_{it} \quad (6)$$

Table 3 shows that asset specification variable has a significant effect on high debt financing decisions (Y). The significance value is smaller alpha (0,000 <0.05). Therefore, second hypothesis that high assets specifications have a significant negative effect on high debt financing decisions is accepted. The regression result shows that asset specification variable has a negative regression coefficient.

Odds Ratio of asset specification is 0.9983. It means that 1 unit increase in asset specification will increase the ratio of high debt financing decisions by 0.9983 times. In other words, every 1 unit increase in asset specifications increases create opportunity for companies to make high debt financing decisions by 0.983 times.

4.3 The effect of high debt financing decisions on company's financial performance for high specification assets

Table 4 shows a summary of statistical analysis using the multiple regression analysis.

Table 4. Summary of multiple linear regression analysis

Variable	Coefficient	Sig. z	Description
Constant	16.18584	0.000	Significant
Debt ratio	-13.20985	0.000	Significant
R square: 0,3413			

The model from multiple regressions is below:

$$Y_{it} = 16.18584 - 13.20985\ Debt\_Ratio_{it} \quad (7)$$

Table 4 shows that debt financing decision variable has a significant effect on financial performance if it has high specifications. The significance value of t is smaller than α (0.00< 0.05). Therefore, third hypothesis that high debt financing decisions affect on company's financial performance with high the assets specifications is accepted.

The regressions show that debt financing decision variable has a negative regression coefficient. It can be concluded that 1 unit increase in debt financing will reduce financial performance by 13.20985.

4.4 Discussion

Financing decisions play a vital role to determine capital structure to get optimum capital structure to create company value. Based on theory of transaction costs economics, companies projects with very specific assets will tend to use equity rather than debt financing, conversely projects with non-specific assets will tend to be financed with debt [5], [6]. If the project goes bad, creditors can take over the assets and move them to other alternatives that have low productive loss value. Conversely, more specific assets will be more difficult to move, so debt financing will less desirable.

The multiple linear regression analysis and probit regression are done by entering the control variables of company characteristics consisting of liquidity, firm size, company diversification, firm age. The multiple linear regressions indicate that specific assets have no significant effect on debt financing decisions. It is inconsistent with [2] that asset specifications significantly affect on debt financing decisions. Specific improvement will decrease the debt financing.

Asset Specification is generally used by companies to produce specific or unique products to distinguish them from other companies. Company operations with specific assets tend to use equity financing and company operations with non-specific assets tend to use debt financing [16], [5], [6], [2], [7] and [17]. Companies with specific assets have better growth and sales opportunities so that choice of capital structure takes precedence from equity [17].

The second hypothesis is tested by probit regression. The results showed the opposite of multiple linear regression, where high assets specifications had a significant negative effect on high debt financing decisions. This shows that higher asset specifications decrease the opportunity for companies to make high debt financing decisions. In other words, higher technology uniqueness tends to be funded by with equity at greater proportions.

This research results are consistent with [16], [5], [6], [2], [7] and [17] that high asset specifications have a significant effect on financing decisions with high debt with negative correlation and positive Odd ratio. Based on theory of transaction costs economics, these results are consistent with the prediction of [5] that debt ratio decreases when the of technological uniqueness asset increases. This condition will become the basis for creditors to impose a higher interest rate, and determine more conditions in debt contract.

Company managers are faced with a choice between various sources of financing as debt, equity, and venture capital. Manager must look for trade-offs between the various types of capital. Each component of capital chosen by company carries different consequences to level of risk, benefits, and control [18].

This research results are also consistent with of [19] in testing the hypothesis of transaction costs economics.

Specific resources negatively affect on leverage (debt financing). Therefore, financing decisions need to consider the level of assets specification and debt to equity ratio that will depend on proportion of strategic assets and normal resources in company compared to specific projects.

A positive Odd ratio indicates that higher asset specifications give companies the opportunity to make high debt financing decisions, and vice versa. This research results are not consistent with theory of transaction costs economics which suggest that equity financing is better for projects with high asset specification, whereas debt financing is better for projects with low asset specification [5], [6] . This research results are also inconsistent with capital market theory [20]. Differences in research objects make this research results inconsistent with [2]. Reference [2] examined Small and Medium Enterprises (SMEs) at start-up stage of their business cycle, they are still very vulnerable and at high risk of failure because there is not much experience and sales position is not so high, and company position has not established and not yet bankable, so access to debt is low. This research examines companies listed on Indonesia Stock Exchange (IDX), average have been established for 40 years. They have been tested in dealing with various problems and taking solutions to problems that arise to make company can survive and be bankable.

A lower level of assets specification reduces the net benefits of debt financing than equity financing. However, practice often shows a misalignment of asset specification in financing. Inconsistency arises when very specific assets are financed with debt or when non-specific assets are financed with equity. This is due to failure to adjust the asset specification financing to have a negative effect on profitability [18], [13] and [2] due to inconsistencies in asset specification financing which cause costs and therefore have a negative impact on financial performance.

This research results support the results of previous studies [18], [13] and [2] that high specification assets have a significant effect on company financial performance. It leads the company to reduce net benefits.

4.5 Research Limitations

This research has several limitations.
1. This research does not do a separate the research object, where different manufacturing industry groups have different characteristics.
2. This research use variable company characteristics and do not use industry dummy and type of organization (as in research of [2] and competitive advantage as a control variable.
3. The study did not examine the effect of asset specifications on financial performance through financing decisions

5. CONCLUSION AND SUGGESTION

The conclusions that can be drawn from results of this research are below.

1. Asset specifications do not become basis for company to determine debt financing decisions. This is likely due to company managers having easy access to formal financial institutions (banking) and considered bankable by bank.
2. More specific asset technology increasing the opportunity for companies to make high debt financing decisions. These results are different from those suggested in theory of transaction costs economics.
3. High debt financing decisions for companies with high asset specifications decrease the financial performance than companies with low debt financing decisions and low asset specifications.

In order to overcome the limitations of this research, the suggestions are proposed below.
1. Future researches should analysis per group of manufacturing industries to get comprehensive results of manufacturing industries, in addition to conducting an overall analysis of manufacturing industry.
2. Future researches should add dummy variables of industry, organization type, and competitive advantage as control variables because the competitive advantage differs among manufacturing industry group which allows to produce different research results.
3. Future research shoul add examine the effect of asset specifications on financial performance through financing decisions

REFERENCES

[1] Foss, Nicolai J. 2003. "Herbert Simon's Grand Theme in the Economics of Organization: "Much Cited and Little Used'," *J. Econ. Psych.,* 24, 2003, pp. 245-264.

[2] Robb and R. Seamans, "Entrepreneurial Finance and Performance: A Transaction Cost Economics Approach". *https//extranet.sioe.org*. Accessed at 2nd March 2018

[3] F. Knight, *"Risk, Uncertainty, and Profit"*. New York, NY: August M. Kelley, 1921.

[4] K. N. J. Foss and P. G. Klein, Original and Derived Judgment: An Entrepreneurial Theory of Economic Organization. *Organization Studies* 28(12), 2007, pp. 1893–1912

[5] O.E. Williamson, "Corporate Finance and Corporate Governance," *Journal of Finance* 43(3), 1988, pp. 567-591.

[6] O.E. Williamson, "The Theory of the Firm as Governance Structure: From Choice to Contract," *Journal of Economic Perspectives*, 16 (Summer), 2002, pp. 171-195.

[7] K. J. Mayer and A. N. Jackson, "Antecedents and Performance Implications of Contracting for Knowledge Workers: Evidence from Information Technology Services", *Organization Science* 16(3), 2005, pp. 225-242.

[8] E.F. Brigham, "Intermediate *Financial Management"*. 12th Edition. Cengage Learning. Boston. USA, 2016.

[9] J.C.V Horne, J. R. Machowicz and M. Jhon, *"Fundamentals of Financial Management"*. Thirteenth edition. The Prentice Hall. London, 2009.

[10] H. B. Mayo, *"Investment an Introduction, Eleventh Edition", International Edition*. United Stated of America : South Western, Cengage Learning, 2014.

[11] O.E. Williamson, *"Markets and Hierarchies: Analysis and Antitrust Implications*. New York, NY: The Free Press, 1975.

[12] O.E. Williamson,. *"The Economic Institutions of Capitalism"*. New York, NY: The Free Press, 1985.

[13] R.C. Sampson, "The Cost of Misaligned Governance in R&D Alliances". *Journal of Law, Economics, & Organization* 20(2), 2004, pp. 484-526.

[14] J. T. Macherand B. D. Richman, "Transaction Cost Economics: An Assessment of Empirical Research in the Social Sciences," Georgetown University working paper, 2007.

[15] B. H. Hamilton, J. A. Nickerson, "Team Incentives and Worker Heterogeneity: An Empirical Analysis of the Impact of Teams on Productivity and Participation", Journal of Political Economy, 111, 2003, pp. 465-497.

[16] S. Titman and R. Wessels, "The Determinants of Capital Structure Choice". *The Journal of Finance,* Vol, 43, No. 1, 1988, pp. 1-19.

[17] E. Savitri., U. Salim, Armanu, and Djumahir, Variabel Anteseden dari Struktur Modal: Dampaknya terhadap Nilai Perusahaan (Studi pada Perusahaan Manufaktur di Bursa Efek Indonesia). *Jurnal Aplikasi Manajemen, Volume 10, Nomor 1, Maret 2012, pp. 21-29*

[18] R. Kochar, "Strategic Assets, Capital Structure and Firm Performance". *Journal of Financial & Strategic Decisions* 10(3), 1997, pp. 23-36.

[19] S. Balakrishnan and I. Fox,"Asset Specificity, Firm Heterogeneity, and Capital Structure," *Strategic Management Journal* 14, 1993, pp. 3-16.

[20] F. Modigliani, dan M. H. Merton, The cost of capital, corporation finance and the theory of investment. *The American Economic Review 48(3),* 1958*, pp.291-297.*