

Factors Affecting the Use of Leverage Among Manufacturing Firms in Indonesia

Margarita Ekadjaja¹, Agustin Ekadjaja², Halim Putera Siswanto^{3*}

*Corresponding author. Email: margaritae@fe.untar.ac.id¹, agustine@fe.untar.ac.id², halims@fe.untar.ac.id³

ABSTRACT

A firm's decision to use leverage becomes a controversial policy between the managers and shareholders. The aim of this study was to reveal the determinants that affect a firm's decision to use leverage. Data was collected from financial reports of manufacturing firms in Indonesia during the years of 2010-2017. Based on data analysis by using Eviews 6.0, it can be revealed that institutional ownership, foreign ownership, and firm size positively and significantly affected a firm's decision to use leverage. Meanwhile, asset structure had negative and significant effect, and managerial ownership had positive yet insignificant effect on such decision.

Keywords: managerial ownership, institutional ownership, foreign ownership, firm size, asset structure

1. INTRODUCTION

Technological advancement and the change of business pattern has forced many firms to keep innovating by increasing the operational effectivity and efficiency, thus they can keep going concern in facing the competition at national, regional, and global level. But sometimes in order to keep surviving, firms need externally additional funds that can be acquired from their policy to use leverage. The existence of leverage policy will indirectly increase the financial risk.

(Ferris, et al., 2018) found out that firms adjust their book value of leverage whenever there is a change in market leverage, which aims to increase their equity values. (Blanchard, 2019) revealed that leverage is related to interest expenses, in which such expenses cause leverage risk. (Reinhart and Sbrancia, 2015) described that low nominal interest-rate help reduce the cost of leverage payment, meanwhile the negatively high real interest-rate can liquidate or erode the real value of government's leverage.

(Sekar, et al., 2014) found out that the increase of leverage can increase the debt-to-equity ratio and the change of capital structure of a firm in deciding its operational financing. This phenomenon will indirectly affect the firm's working capital and liquidity.

(Ponsian, 2014) also found out a negative correlation between firm size and profitability, which indicates that the decrease of liquidity may cause the increase of profitability. This implies that the longer time a firm needs to repay its debt to the creditor, the higher the firm's profitability becomes. The increase of profitability indirectly affects the firm's size. (Ibhagui and Olokoyo, 2018) stated that, the positive effect of firm size on its decision to use leverage can increase the firm's value.

(Serghiescu and Văidean, 2014) showed that tangible assets (fixed assets) have negative impact on total debt ratio (leverage). (Fang, et al., 2019) stated that a firm's asset liquidity has significant effect on the optimal level of

leverage use. Thus, a firm's leverage policy is an important matter related to the risk of its financing policy.

(Florackis, *et.al.*, 2015) showed a negative correlation between managerial ownership and the firm's leverage usage policy. (Sumanti and Mangantar, 2015) explained the relationship among managerial ownership, dividend policy, profitability, and leverage usage policy, of which all of them are related each other. The study conducted by (Sumanti and Mangantar, 2015) showed that the relationship between managerial ownership and dividend policy is significant, meanwhile the effect of leverage policy and profitability was not significant on dividend policy. Nevertheless, profitability has significant effect on firm value, but managerial ownership, leverage policy, and dividend policy do not.

(Aygün, Ic, and Sayim, 2014) showed that institutional ownership has negative and significant impact on earning management, while the impact of financial leverage to earning management is negative and significant. (Hovey, 2011) showed that institutional ownership are not found to have significant relationship with the capital structure of the firm, whereas capital structure also covers the leverage.

(Bamiatzi, *et.al.*, 2017) conducted a study about the effect of foreign and domestic ownership on firm's leverage policy. The result showed that there is negative and significant effect of foreign and domestic ownership on debt ratio.

This research was based on the researches conducted by (Florackis, *et.al.*, 2015), (Ibhagui and Olokoyo, 2018), (Serghiescu and Văidean, 2014), (Fang, *et al.*, 2019), (Ponsian, 2014), (Aygün, Ic, and Sayim, 2014), and (Bamiatzi, *et.al.*, 2017), in which a firm's decision to use leverage will affect the firm's profitability achievement which impacts the firm's value. This research analyzed more variable, which were ownership (managerial, institutional, and foreign) and financial ratio (asset composition and firm size) on firm's policy to use leverage, which was limited to the test on the effect of ownership variable (managerial, institutional, and foreign) and financial ratio variable (asset composition and firm size) on the firm's policy to use leverage within a relatively long period, which was during 2010-2017. The main objective of

this research is to find out the determinants that affect a firm to use leverage, which can be utilized to increase the its value.

2. LITERATURE REVIEW

All firms have the same goal, which is to increase their shareholders' welfare, that can be reflected from the firm value. In enhancing their business activities, firms use external funds as their alternative sources of financing. (Yazandfar and Öhman, 2015) and (Ahmed and Wang, 2013) argued that the high level of leverage proportion will decrease the firm value. (Kartikasari and Merianti, 2016) argued that debt ratio positively affects the firm performance. Shares ownership offered to managers is a firm's policy to enhance its performance and causes the managers as shareholders to manage the leverage optimally. Managerial ownership will affect the firm's financing policy through debt or right issue. Managers as firm's executives must be able to make the best policy that can increase the firm value. However, sometimes such phenomenon is in on contrast to the interests of shareholders that might be caused by information differences. In this research, the dependent variable is leverage. (Brigham,et.al., 2015) defined that a firm's decision to use leverage is the firm's policy to acquire external fund. As an indicator, the Debt-Equity-Ratio (DER) is used. The formula of DER is total debt divided by total equity.

The independent variables in this study are :

- Managerial ownership (MOWN) :
(Eugene F. Brigham and Joel F.Houston, 2015) defined MOWN as the ownership of a firm by its managers, with the formula :
MOWN = Total shares owned by managers divided by outstanding shares
- Institutional ownership (INST)
(Eugene F. Brigham and Joel F.Houston, 2015) defined INST as the ownership of a firm by domestic outsider (institution), with the formula:
INST = Total shares owned by domestic outsiders divided by outstanding shares.
- Foreign ownership (FOREIGN)
(Eugene F. Brigham and Joel F.Houston, 2015) defined FOREIGN as the ownership of a firm by foreign outsider, with the formula :
FOREIGN = Total shares owned by foreign outsiders divided by outstanding shares.
- Firm Size (SIZE)
(Serghiescu and Văidean, 2014) defined SIZE as exponential logarithmic value of the total assets, with the formula :
SIZE = Natural logarithm from total assets (Ln TA)
- Asset structure (ASSET)
(Serghiescu and Văidean, 2014) defined ASSET as describing the percentage of fixed assets owned by the firm, with the formula :
ASSET = Total fixed assets divided by total assets

3. RESEARCH METHODOLOGY

This research used secondary data which was collected from the financial reports of manufacturing firms listed in Indonesia Stock Exchange (IDX) from the year 2010 to 2017. By using the purposive sampling technique, 24 selected firms had been acquired as eligible samples, thus 192 observation could be done. Panel data regression and estimation method by using multiple linear regression was conducted, with Debt-Equity-Ratio (DER) as dependent variable, along with the other five independent variables, which are: Managerial Ownership (MOWN), Institutional Ownership (INST), Foreign Ownership (FOREIGN), Asset Structure (ASSET), and Firm Size (SIZE).

The equation of research model can be formed as follow:

$$Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \beta_5X_5 + e$$

Description :	Y	=	DER
	β_0	=	Constant
	$\beta_{1,2,3,4,5}$	=	Regression
Coefficient	X_1	=	MOWN
	X_2	=	INST
	X_3	=	FOREIGN
	X_4	=	ASSET
	X_5	=	SIZE
	e	=	error

(Hatem, 2015) stated that the relationship between managerial ownership and the use of firm's leverage formed the inverse U-shaped curve. This means that the higher the firm's ownership structure in managerial ownership can enhance the firm's decision to use higher leverage, and after passing the highest point the result will be the opposite. Based on the statement, the first hypothesis in this study could be developed as follow:

H₁: Managerial ownership has a positive effect on the firm's decision to use leverage.

(Said, 2013) stated that external investors (institutional and foreign) have negative effect on firm's decision to use leverage. Based on the statement, the second and third hypotheses in this study could be developed as follows:

H₂: Institutional ownership has a negative effect on the firm's decision to use leverage.

H₃: Foreign ownership has a negative effect on the firm's decision to use leverage.

(Serghiescu and Văidean, 2014) mentioned that asset structure has negative effect on firm's debt ratio. Based on the statement, the fourth hypothesis was :

H₄: Asset structure has a negative effect on the firm's decision to use leverage.

(Ibhagui and Olokoyo, 2018) stated that the positive effect of firm size on its decision to use leverage can increase the firm value. Therefore, the fifth hypothesis could be developed as follow:

H₅: Firm size has a positive effect on the firm's decision to use leverage.

4. RESULT AND DISCUSSION

The results of this research among manufacturing firms in Indonesia for the period of 2010-2017 can be seen in Table 1 as follows :

Table 1. Research Model Test

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-8.136718	4.138637	-1.966038	0.0511
MOWN	1.115248	0.604531	1.844816	0.0670
INST	2.280891	0.750447	3.039379	0.0028
FOREIGN	1.025239	0.350134	2.928131	0.0039
SIZE	0.278739	0.133387	2.089703	0.0383
ASSET	-1.395928	0.302150	-4.619976	0.0000

Effects Specification			
Cross-section fixed (dummy variables)			
Period fixed (dummy variables)			
R-squared	0.604636	Mean dependent var	1.009498
Adjusted R-squared	0.515932	S.D. dependent var	0.753457
S.E. of regression	0.524218	Akaike info criterion	1.713542
Sum squared resid	42.86947	Schwarz criterion	2.324322
Log likelihood	-128.5000	Hannan-Quinn criter.	1.960912
F-statistic	6.816369	Durbin-Watson stat	1.755944
Prob(F-statistic)	0.000000		

Source: Data Analysis by using Eviews 6.0

Table 1 (Research Model Test) describes the effect of managerial ownership, institutional ownership, foreign ownership, asset structure, and firm size on the manufacturing firms' decision in Indonesia during 2010-2017 regarding their policies to use leverage, which were as follows:

The relationship between managerial ownership and the firm's decision to use leverage was positive, but not significant. This result is in line with the study conducted by (Hatem, 2015). Empirically, this insignificance might be caused due to the firms in Indonesia that were still in form

of family business, therefore the managerial ownership was relatively low compared to the founders' shares ownership. Besides, the owners' perspective, viewing that the cost of debt was lower than those from other kinds of financing, caused them to use big leverage.

The result of the study on the relationship between external ownership (institutional and foreign ownership) and the decision to use leverage is on the contrary to the research conducted by (Said, 2013). The relationship between 'institutional and foreign ownership's and a firm's decision to use leverage was positive and significant,

because the institutional and foreign ownership preferred to using leverage along with their expectation to generate higher profitability.

The relationship between firm size and its decision to use leverage was positive and significant. This is inline with the study from (Ibhagui and Olokoyo, 2018). The result of this study showed that the bigger the firm's size, the easier will be for the firm to acquire leverage, thus the firm tends to utilize the external financing.

The relationship between asset structure and the firm's decision to use leverage was negative and significant, in which this phenomenon is in line with the study conducted by (Chang, Mais, and Sullivan, 2013) revealing that long-term assets tend to use the firm's internal financing (issuing shares) compared to using external financing (borrowing debt). Thus, it can be concluded that asset liquidity less increases the leverage, because it tends to be financed by its own equity.

The result of this study formed a model as follow:

$$Y = -8.136718 + 1.115248 \text{ MOWN} + 2.280891 \text{ INST} + 1.025239 \text{ FOREIGN} + 0.278739 \text{ SIZE} - 1.395928 \text{ ASSET} + e$$

Determinants for the variables of managerial ownership, institutional ownership, foreign ownership, firm size, and asset structure toward a firm's decision to use leverage was 60.46%, and the remaining 39.54% was affected by other variables which were not explained in this study.

5. CONCLUSION

Based on data acquired from the financial reports of manufacturing firms' in Indonesia during the year 2010-2017, it can be revealed that the variables of institutional ownership, foreign ownership, and firm size positively and significantly affect the firm's decision on the use of leverage. Meanwhile, the variable of asset structure negatively and significantly affects the financial decision on the use of leverage, and last, the variable of managerial ownership has positive yet insignificant effect on such decision.

The managerial implication of this study is that firms should pay more attention to institutional ownership, foreign ownership, firm size, and asset structure, when determining whether to use leverage in order to enhance its performance. On the other hand, managerial ownership can be ignored when considering whether to use the leverage, so implicitly it has no contribution on firm's performance.

REFERENCES

- [1] Ahmed Sheikh, N., and Wang, Z. (2013). The impact of capital structure on performance. *International Journal of Commerce and Management*. <https://doi.org/10.1108/ijcoma-11-2011-0034>.
- [2] Aygun, M., Ic, S., and Sayim, M. (2014). The Effects of Corporate Ownership Structure and Board Size on Earnings Management: Evidence from Turkey. *International Journal of Business and Management*, 9(12). <https://doi.org/10.5539/ijbm.v9n12p123>.
- [3] Bamiatzi, V., Efthyvoulou, G., and Jabbour, L. (2017). Foreign vs domestic ownership on debt reduction: An investigation of acquisition targets in Italy and Spain. *International Business Review*. <https://doi.org/10.1016/j.ibusrev.2017.01.008>.
- [4] Blanchard, O. (2019, April 1). Public debt and low interest rates. *American Economic Review*. American Economic Association. <https://doi.org/10.1257/aer.109.4.1197>.
- [5] Chang, S., Mais, E., and Sullivan, M. J. (2013). The effect of target managerial ownership on the choice of acquisition financing and CEO job retention. *Review of Quantitative Finance and Accounting*. <https://doi.org/10.1007/s11156-012-0280-5>.
- [6] Eugene F. Brigham and Joel F. Houston. (2015). *Fundamentals of Financial Management*. Cengage Learning. <https://doi.org/10.1017/CBO9780511790546.026>.
- [7] Fang, J., Lau, C. K. M., Lu, Z., Tan, Y., and Zhang, H. (2019). Bank performance in China: A Perspective from Bank efficiency, risk-taking and market competition. *Pacific Basin Finance Journal*. <https://doi.org/10.1016/j.pacfin.2019.06.011>.
- [8] Ferris, S. P., Hanousek, J., Shamshur, A., and Tresl, J. (2018). Asymmetries in the Firm's use of debt to changing market values. *Journal of Corporate Finance*. <https://doi.org/10.1016/j.jcorpfin.2017.12.006>.
- [9] Florackis, C., Kanas, A., and Kostakis, A. (2015). Dividend policy, managerial ownership and debt financing: A non-parametric perspective. *European Journal of Operational Research*. <https://doi.org/10.1016/j.ejor.2014.08.031>.
- [10] Hatem, B. S. (2015). Interdependence between Managerial Ownership, Leverage and Firm Value: Theory and Empirical Validation. *International Journal of Economics and Finance*. <https://doi.org/10.5539/ijef.v7n12p106>.
- [11] Hovey, M. T. (2011). Corporate Governance in China: Ownership Structures and the Performance of Listed Firms. *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.904261>.

- [12] Ibhagui, O. W., and Olokoyo, F. O. (2018). Leverage and firm performance: New evidence on the role of firm size. *North American Journal of Economics and Finance*. <https://doi.org/10.1016/j.najef.2018.02.002>.
- [13] Kartikasari, D., and Merianti, M. (2016). The effect of leverage and firm size to profitability of public manufacturing companies in Indonesia. *International Journal of Economics and Financial Issues*.
- [14] Ponsian, N. (2014). The Effect of Working Capital Management on Profitability. *International Journal of Economics, Finance and Management Sciences*. <https://doi.org/10.11648/j.ijefm.20140206.17>.
- [15] Reinhart, C., and Sbrancia, M. B. (2015). The Liquidation of Government Debt. *IMF Working Papers*. <https://doi.org/10.5089/9781484369234.001>.
- [16] Said, H. Ben. (2013). Impact of Ownership Structure on Debt Equity Ratio: A Static and a Dynamic Analytical Framework. *International Business Research*. <https://doi.org/10.5539/ibr.v6n6p162>.
- [17] Sekar, M., Gowri, M. M., and Ramya, M. G. (2014). A Study on Capital Structure and Leverage of Tata Motors Limited: Its Role and Future Prospects. *Procedia Economics and Finance, 11*, 445–458. [https://doi.org/10.1016/s2212-5671\(14\)00211-1](https://doi.org/10.1016/s2212-5671(14)00211-1).
- [18] Serghiescu, L., and Văidean, V.-L. (2014). Determinant Factors of the Capital Structure of a Firm—an Empirical Analysis. *Procedia Economics and Finance*. [https://doi.org/10.1016/s2212-5671\(14\)00610-8](https://doi.org/10.1016/s2212-5671(14)00610-8).
- [19] Sumanti, J. C., and Mangantar, M. (2015). Analysis of Managerial Ownership , Debt Policy and Profitability on Dividend Policy. *Jurnal EMBA*.
- [20] Yazdanfar, D., and Öhman, P. (2015). Debt financing and firm performance: an empirical study based on Swedish data. *Journal of Risk Finance, 16*(1), 102–118. <https://doi.org/10.1108/JRF-06-2014-0085>.