

The Determinant of Debt Policy with Investment Opportunity Set as Moderating Variable – A Study in Indonesia Property and Real Estate Sector on the Indonesia Stock Exchange

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Abstract— Debt policy is a policy carried out by managers in determining sources of funds both internally and externally. Managers must determine the appropriate proportion of debt by paying attention to the risk of such debt and must be careful in selecting the most profitable source of funding for the company by analyzing the optimal capital structure to balance the risk and rate of return for the company and shareholders. This study aims to analyze the influence of Profitability and Managerial Ownership on Debt Policy with Investment Opportunity Set as a Moderating Variable in Property and Real Estate Sector Companies on the Indonesia Stock Exchange. This type of research is quantitative research with a population of 92 companies. The sampling technique uses the purposive sampling method and samples were obtained from 27 companies from 2019-2023. The results show that the variables of Profitability and Managerial Ownership have a negative effect on Debt Policy, while the Investment Opportunity Set is unable to moderate the variables of Profitability and Managerial Ownership on Debt Policy. The author's suggestion for the next research is to be able to add independent variables, increase the number of samples, use other sectors and use the current time range.

Keywords—profitability; managerial ownership; investment opportunity set; debt policy

I. INTRODUCTION

In a country, the economy has a very important role in the welfare of the community. Economic conditions in Indonesia have declined since the emergence of the COVID-19 pandemic that hit the world in 2019. The impact of the COVID-19 pandemic in Indonesia is very diverse, one of which is the declining financial condition so that many companies are experiencing a financial crisis in maintaining their business. In maintaining a business, the most important thing to develop a company is funding so that the company must be right in making decisions related to funding. The right funding decision aims to make the company more consider and analyze the sources of funds that will be used to finance operations and investments in the company. According to pecking order theory, companies are more likely to use internal funds first to fund their operational activities than to use external funds [1]. When internal funds are no longer sufficient, the company will use external funds in the form of debt. Debt has a very important influence on companies, because debt has the ability to increase funding capacity and also as a mechanism used to reduce agent conflict [2]. The decision to use debt for company operations is a strategic step that requires precise and in-depth analysis because many companies experience success with accuracy in decision-making. The debt policy in a company is carried out by the manager, so that the manager can wisely determine the right source of funding to be used by the company in its operational activities so that the decisions taken can provide benefits to the company. Debt policy can have an impact on managers' discipline in optimizing the use of funds in the company. Debt policy in a company can be determined by considering the size of profitability and managerial ownership.

Companies are more likely to use internal funds than external funds. The company will first use internal funds derived from the company's operating results, if the use of external funds is needed, the

company will issue debts, then will issue new shares if needed [3]. According to pecking order theory, companies that have a high profitability value actually have a low level of debt, because companies with high profitability have a large source of internal funds [4]. Pecking order theory is a theory that explains the company's policy that prioritizes internal funding sources in the form of retained earnings as an investment need, if internal funds are insufficient, the company can obtain funding from external in the form of debt and share capital.

Profitability is a ratio that measures a company's ability to generate profits from operational activities [5]. Profitability is one of the factors that can affect debt policy in a company because if the company has high profitability, it will be able to fund the company's activities from the profits generated without having to use funds from loans to fund the company's activities. Based on the results of research conducted by [2] shows that profitability has a negative effect on debt policy. Based on the description above, the hypothesis in this study is as follows:

H1 : Profitability has a negative effect on Debt Policy

Managerial ownership is the ownership of shares by a manager in a company, in this case the manager has a dual role in a company, namely as a manager who acts directly in the company's operations as well as a shareholder of the company. Companies with high managerial ownership will have an impact on policy-related decisions in the use of debt because the company's management will be careful in using debt to avoid the risk of bankruptcy in the company. The higher managerial ownership in a company is known to reduce the use of debt. Based on the results of the study [6] shows that managerial ownership has a negative effect on debt policy. Based on the description above, the hypothesis in this study is as follows:

H2 : Managerial Ownership has a negative effect on Debt Policy

Investment opportunity set is an investment opportunity that is expected by management to get a greater return. The company manager will make an investment opportunity set for the survival of the company. A high set of investment opportunities can affect the debt policy to be low as well as the higher the profitability, the lower the debt. The results of the research conducted by [7] shows that the investment opportunity set is not able to moderate the relationship of profitability to debt policy. Based on the description above, the hypothesis in this study is as follows:

H3 : Investment Opportunity Set amplifies the negative influence of Profitability on Debt Policy

Managers who own shares in the company will be more careful in making decisions related to debt, usually managers will prefer to make investments to obtain benefits in the future. High managerial ownership will lead to low debt use in the company, so that the existence of an investment opportunity set is suspected to strengthen the relationship between managerial ownership and debt policy. Results [7] shows that the Investment Opportunity Set is not able to moderate the relationship of managerial ownership to debt policy. Based on the description above, the hypothesis in this study is as follows:

H4 : Investment Opportunity Set reinforces the negative influence of Managerial Ownership on Debt Policy

This research was motivated by research conducted by [8]. The difference between this study and the previous study is that this study uses an empirical study on Property and Real Estate Companies listed on the Indonesia Stock Exchange for the 2019-2023 period. The reason why the author is interested in conducting this research is because there is no consistency in the results of previous research, so the author is interested in re-researching with the same title by changing the company sector in this study and using the latest research time span.

II. RESEARCH METHODS

This research is an associative (causal) research. The object of this study is companies in the property and real estate sector that are listed on the Indonesia Stock Exchange. This sector is engaged in the development of services by facilitating the development of integrated and dynamic areas. The products produced by this sector can be in the form of housing, apartments, shophouses, office buildings, and shopping centers. The data collection technique in this study uses a documentary study with secondary data sources. Secondary data in this study is the company's annual financial statements for the period 2019 to 2023 on property and real estate sector companies on the Indonesia Stock Exchange obtained through *the www.idx.co.id website*. The population in this study is 92 companies and the sample collection uses the purposive sampling method with sample results of 27 companies. In this study, there is one dependent

variable, two independent variables and one moderation variable. The following is a description of the variables in this study:

Dependent Variables:

Debt Policy is a policy taken by management to obtain sources of financing for the company in order to provide funds for the company's operational activities [9]. In this study, debt policy is measured using the debt to equity ratio (DER). The formula of the debt to equity ratio (DER) is as follows:

$$\text{Debt to Equity Ratio} = \frac{\text{Total Debt}}{\text{Total Equity}}$$

Independent Variables:

Profitability is a ratio that aims to determine the company's ability to generate profits during a certain period and also provides an overview of the level of effectiveness of management in carrying out its operational activities [9]. In this study, profitability is measured using return on assets (ROA). The formula of return on assets (ROA) is as follows:

$$\text{Return On Assets} = \frac{\text{Earning After Tax}}{\text{Total Assets}}$$

Managerial Ownership is the amount of share ownership of the management (Board of Directors and Commissioners) who actively participate in the company's decision-making process [9]. The formula of managerial ownership is as follows:

$$\text{Managerial Ownership} = \frac{\text{Total number of manager shares}}{\text{Total number of shares}}$$

Moderation Variables:

Investment Opportunity Set is an investment option in the future and reflects the growth of assets and equity. Investment decisions in the form of a choice of a combination of assets belonging to the company and several future investment options [9]. In this study, the investment opportunity set was measured using the market to book value of equity (MBVE). The formula of the market to book value of equity (MBVE) is as follows:

$$\text{Market to Book Value of Equity} = \frac{(\text{Price per share}) \times (\text{Total number of shares})}{\text{Total common equity}}$$

The data analysis methods used in this study are descriptive statistical analysis and moderated regression analysis (MRA). Moderated regression analysis (MRA) is a special application of multiple linear regression in which the regression equation contains an element of interaction (multiplication of two or more independent variables) [8]. The regression equation in this study is as follows:

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 Z + \beta_4 X_1 Z + \beta_5 X_2 Z + e$$

Information:

Y = Debt Policy

α = Constant

$\beta_{1,2,3,4,5}$ = Regression Coefficient

X_1, X_2, Z = Profitability, Managerial Ownership, Investment Opportunity Set

e = Error

This study used a classical assumption test consisting of a residual normality test, a multicollinearity test, an autocorrelation test, and a heteroscedasticity test followed by a Moderated Regression Analysis (MRA), a determination coefficient test, and an F (anova) test with a significance level of 5 percent. Based on the description above, the conceptual framework in this study is as follows:

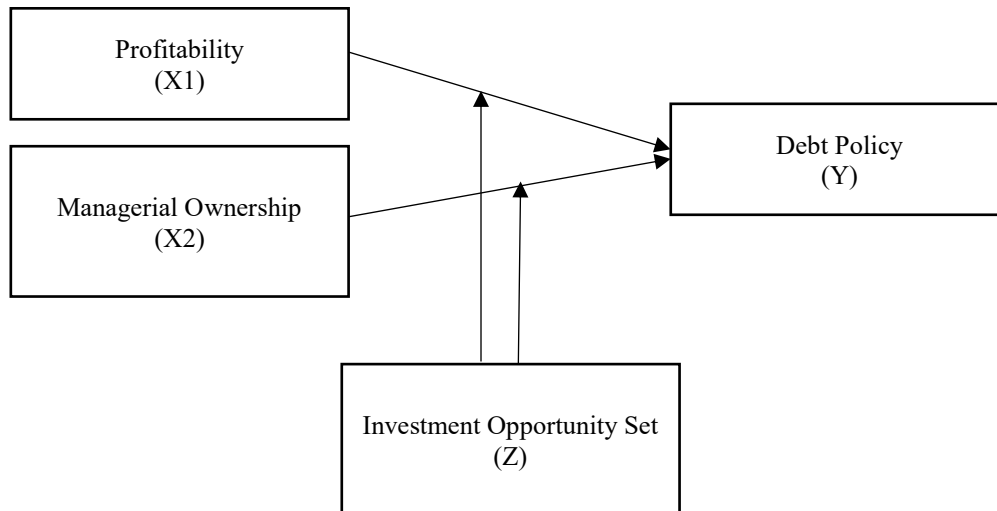


Figure 1. Conceptual Framework

III. RESULT AND DISCUSSION

Descriptive Statistical Analysis

Table 1. Descriptive Statistical Analysis

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
ROA	135	-,1858	,4283	,020279	,0652603
MO	135	,0000	,6473	,085696	,1451206
MBVE	135	,1784	16,8676	1,307552	2,5074028
DER	135	,0304	4,9917	,935753	,8243218
Valid N (listwise)	135				

Profitability. The results of the descriptive statistical analysis in Table 1 are known to be the average of the percentage of Return on Assets (ROA) which is 0,0202 or 2,02%, with a standard deviation of 0,0652, a minimum amount of -0,1858 or -18,58% and a maximum amount of 0,4283 or 42,83%.

Managerial Ownership. The results of the descriptive statistical analysis in Table 1 are known to be the average of the managerial ownership (MO) proportion, which is 0.0856 or 8,56%, with a standard deviation of 0,1451, a minimum amount of 0,000 or 0% and a maximum amount of 0,6473 or 64,73%.

Investment Opportunity Set. The results of the descriptive statistical analysis in Table 1 are known to be the average of the Market to Book Value of Equity (MBVE) percentage, which is 1,3075 or 130,75%, with a standard deviation of 2,5074, a minimum amount of 0,1784 or 17,84% and a maximum amount of 16,8676 or 1.686,76%.

Debt Policy. The results of the descriptive statistical analysis in Table 1 are known to be the average of the Debt to Equity Ratio (DER) percentage, which is 0,9357 or 93,57%, with a standard deviation of 0,8243, a minimum amount of 0,0304 or 3,04% and a maximum amount of 4,9917 or 499,17%.

Classical Assumption Test

Normality Test

Table 2. Normality Test

One-Sample Kolmogorov-Smirnov Test		
		Unstandardized Residual
N		121
Normal Parameters ^{a,b}	Mean	,0000000
	Std. Deviation	,14540215
Most Extreme Differences	Absolute	,078
	Positive	,078
	Negative	-,063
Test Statistic		,078
Asymp. Sig. (2-tailed)		,067 ^c

a. Test distribution is Normal.

b. Calculated from data.

c. Lilliefors Significance Correction.

In Table 2, a residual normality test of Kolmogorov Smirnov has been carried out. The condition for the research data is said to be normally distributed, namely the significance value must be greater than 0,05. In Table 2, it can be seen that the significance value is 0,067. Based on these results, it can be concluded that the research data is normally distributed.

Multicollinearity Test

Table 3. Multicollinearity Test

		Coefficients ^a					
		Unstandardized Coefficients		Standardized Coefficients		Collinearity Statistics	
Type		B	Std. Error	Beta	t	Sig.	Tolerance VIF
1	(Constant)	3,551	,431		8,235	,000	
	ROA	-2,279	,348	-,532	-6,547	,000	,896 1,116
	MO	-,711	,191	-,304	-3,717	,000	,884 1,131
	MBVE	-,099	,071	-,109	-1,398	,165	,967 1,034

a. Dependent Variable: DER

In Table 3, a multicollinearity test has been carried out. The requirements for the independent variable and moderation variable of this study are said to have no multicollinearity problem, namely the tolerance value must be greater than 0,1 and the Variance Inflation Factor (VIF) value must be less than 10. In table 3, it can be seen that the tolerance value of the free variable and the moderation variable is respectively 0,896;

0,884; 0,967 and the VIF value in sequence is 1,116; 1,131; 1,034. Based on these results, it can be concluded that the free variable and moderation variable in this study do not have multicollinearity problems.

Autocorrelation Test

Table 4. Autocorrelation Test

Runs Test	
	Unstandardized Residual
Test Value ^a	,00851
Cases < Test Value	60
Cases >= Test Value	61
Total Cases	121
Number of Runs	68
Z	1,188
Asymp. Sig. (2-tailed)	,235

a. Median

In Table 4, an autocorrelation test has been carried out Run Test. The condition for the research data is said to have no autocorrelation problem, namely the significance value must be greater than 0,05. In Table 4, it can be seen that the significance value is 0,235. Based on these results, it can be concluded that the research data does not have an autocorrelation problem.

Heteroscedasticity Test

Table 5. Heteroscedasticity Test

Correlations			ROA	MO	MBVE	ABS RES
Spearman's rho	ROA	Correlation Coefficient	1,000	-,227*	,088	,164
		Sig. (2-tailed)	.	,012	,335	,073
		N	121	121	121	121
	MO	Correlation Coefficient	-,227*	1,000	,279**	,025
		Sig. (2-tailed)	,012	.	,002	,788
		N	121	121	121	121
	MBVE	Correlation Coefficient	,088	,279**	1,000	-,147
		Sig. (2-tailed)	,335	,002	.	,107
		N	121	121	121	121
	ABS_RES	Correlation Coefficient	,164	,025	-,147	1,000
		Sig. (2-tailed)	,073	,788	,107	.
		N	121	121	121	121

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

In Table 5, Spearman's rho heteroscedasticity test has been carried out. The requirements for the independent variable and moderation variable of this study are said to have no heteroscedasticity problem, namely the significance value of each variable must be greater than 0,05. In Table 5, it can be seen that the significance value of the independent variable and the moderation variable is sequentially 0,073; 0,788; 0,107. Based on these results, it can be concluded that the free variable and moderation variable in this study do not have heteroscedasticity problems.

Coefficient of Determination Test

Table 6. Coefficient of Determination Test

Model Summary				
Type	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,565 ^a	,319	,290	,1472751

a. Predictors: (Constant), MO*MBVE, ROA, MO, ROA*MBVE, MBVE

The results of the determination coefficient test in Table 6 show that the value of the coefficient (Adjusted R Square) is 0,290 or 29 percent, which means that the variability of the dependent variable influenced by the independent variable is 29 percent and the remaining 71 percent is influenced by other variables outside this research model.

F Test (Anova)

Table 7. F Test

ANOVA ^a						
Type	Sum of Squares	df	Mean Square	F	Sig.	
1 Regression	1,169	5	,234	10,782	,000 ^B	
Residual	2,494	115	,022			
Total	3,664	120				

a. Dependent Variable: DER

b. Predictors: (Constant), MO*MBVE, ROA, MO, ROA*MBVE, MBVE

In Table 7, the F (Anova) test has been carried out. The eligibility requirements of the regression model are that the significance value must be less than 0,05 and the F value of the calculation must be greater than the F table. Based on the results of the F (Anova) test in Table 7, it is known that the significance value is $0,000 < 0,05$ and the calculated F value is $10,782 > 2,29$ (F table). Based on these results, it can be concluded that the regression model in this study has the feasibility of being tested.

Moderated Regression Analysis (MRA)

Table 8. Moderated Regression Analysis

		Coefficients ^a				
		Unstandardized		Standardized		
		Coefficients		Coefficients		
	Type	B	Std. Error	Beta	t	Sig.
1	(Constant)	5,318	1,451		3,664	,000
	ROA	-3,195	1,110	-,746	-2,879	,005
	MO	-1,638	,734	-,701	-2,231	,028
	MBVE	-3,136	2,490	-3,462	-1,259	,210
	ROA*MBVE	1,654	1,988	1,831	,832	,407
	MO*MBVE	1,506	1,139	1,656	1,322	,189

a. Dependent Variable: DER

Based on the results of the moderation regression analysis in Table 8 with = 5 percent, the regression equation is obtained as follows: α

$$Y = 5,318 - 3,195X_1 - 1,638X_2 - 3,136Z + 1,654X_1Z + 1,506X_2Z + e$$

Based on the results in Table 8, it is known that the profitability variable has a significance value of $0,005 < 0,05$ with a regression coefficient value of -3,195 which means that the profitability variable has a negative effect on debt policy. Based on the results of the test, hypothesis H_1 accepted. These results are in line with research [2]. Profitability is proven to have an indirect influence on debt policy, the higher the profitability value, the lower the debt policy because companies that have a high profitability value show that the company has the ability to earn profits from assets owned by the company so that it will reduce the source of funding from debt.

Based on the results in Table 8, it is known that the managerial ownership variable has a significance value of $0,028 < 0,05$ with a regression coefficient value of -1,638 which means that the managerial ownership variable has a negative effect on debt policy. Based on the results of the test, hypothesis H_2 accepted. These results are in line with research [6]. Managerial ownership is proven to have a non-directional influence on debt policy, the higher the managerial ownership, the lower the debt policy will be because managers will be more careful in using debt in their operational activities to avoid the risk of bankruptcy in the company.

Based on the results in Table 8, it is known that the multiplication variable between profitability and investment opportunity set has a significance value of $0,407 > 0,05$ with a regression coefficient value of 1,654 which means that these variables have no effect on debt policy. Based on the results of the test, hypothesis H_3 rejected. These results are in line with research [7]. Investment opportunity set have proven to be unable to strengthen the negative influence of profitability on debt policy because investment opportunity set are not a benchmark for managers in determining debt policy, high profitability has been considered effective for companies.

Based on the results in Table 8, it is known that the multiplication variable between managerial ownership and investment opportunity set has a significance value of $0,189 > 0,05$ with a regression coefficient value of 1,506 which means that this variable has no effect on debt policy. Based on the results of the test, hypothesis H_4 rejected. These results are in line with research [7]. The investment opportunity set has proven to be unable to strengthen the negative influence of managerial ownership on debt policy because the manager is considered to be effective in determining debt policy in the company so that the investment opportunity set is not a reference for the company in determining debt policy.

IV. CONCLUSION

Based on the results of the research that has been described above, the author concludes that profitability has a negative effect on debt policy because if the profitability value in a company is high, the use of debt in funding activities will be low because the company will prefer to use internal funds first rather than using external funds from debt. Managerial ownership has a negative effect on debt policy because if the number of shares owned by managers in a company is high, the use of debt in the company will be low because managers will be more careful in determining funding decisions in the company so that the company does not go bankrupt caused by too large debts. In this study, the investment opportunity set is not able to strengthen the negative influence between profitability and managerial ownership on debt policy, which means that the investment opportunity set variable is not a benchmark used by managers when determining debt policy in the company. This research is expected to provide information for interested parties and can also be a reference for future authors who want to research in this field. The author's suggestion for the next author is to be able to add variables that can be a factor in influencing debt policy, increase the number of company samples, and replace the company's object with other sectors as well as take the latest time span in order to get more accurate research results.

V. ACKNOWLEDGMENTS

Praise be to God Almighty for blessing the author so that he can complete this research. The author would like to thank the Asia-Pacific Management Research Conference (APMRC) and Widya Dharma University Pontianak for collaborating to hold this conference and provide the opportunity for the author to be able to present the results of this research. The author would also like to thank Mr. Thomas Averio as the second author and supervisor lecturer for providing direction and guidance in the process of writing this paper. Finally, the author would like to thank parents, siblings and friends who have supported and encouraged the author in writing this paper.

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