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# Determinants of Capital Structure on Property and Real Estate Companies Listed on The Indonesia Stock Exchange for The Period of 2015-2020 Nabila Nurul Aini<sup>1</sup>, Suherman<sup>2</sup>, Umi Mardiyati<sup>3</sup>

<sup>1</sup> State University of Jakarta, Indonesia

- <sup>2</sup> State University of Jakarta, Indonesia
- <sup>3</sup> State University of Jakarta, Indonesia

Corresponding Author: Nabila Nurul Aini, 🖾 nabilanurula16@gmail.com

#### ABSTRACT

	This study aims to determine the effect of profitability, firm size, firm age, non-debt tax shield, tangibility, growth opportunities, and earnings volatility on the capital structure of the property and real estate sector companies listed on the Indonesia Stock Exchange for the period of 2015-2020. Independent variables used in this study are profitability, firm size, firm age, non-debt tax shield, tangibility, growth opportunities, and earnings volatility. The Dependent variable used is the capital structure
<b>ARTICLE INFO</b>	(DER and DAR) This study also uses a control variable namely
Article history	institutional ownership. The sampling technique used in this study is
Received	institutional ownership. The sampling technique used in this study is
Received	purposive sampling with as many as 45 property and real estate companies
<b>D</b> . 1	that matched the sample criteria in the study. This study uses panel data
Revised	regression analysis techniques using the Common Effect Model (CEM) and
	Random Effect Model (REM) approaches. The results of this study indicate
Accepted	that profitability, firm age, non-debt tax shield, growth opportunities, and earnings volatility have a negative and insignificant effect on capital structure (DER), while firm size has a positive and significant effect on capital structure (DER). The results of the robustness check with the Debt to Assets Ratio as a proxy for capital structure show that profitability, firm size, firm age, and growth opportunities have robust results, while non- debt tax shields, tangibility, and earnings volatility have not robust results. Therefore this research supports the trade-off theory, pecking order theory, and signaling theory.
Kata Kunci	capital structure, profitability, firm size, firm age, non-debt tax shield, tangibility,

Keywords

growth opportunities, earnings volatility, and institutional ownership.

# **INTRODUCTION**

In carrying out business activities, capital acts as a driving force for asset financing, business operational activities, and also business expansion. The capital required for each stage of the business is based on the importance of capital structure decisions that determine the combination of sources of obtaining funds obtained as financing for company assets, either from within the company

(Internal Financing) or from outside the company (External Financing). Capital structure is the way a company finances its assets through a combination of debt and equity. Financial managers have a role in making capital structure decisions so they need to be careful and thorough in comparing various sources of funding to create an optimal mix of capital or one that can minimize the overall cost of capital and maximize firm value. According to Alipour et al. (2015), making wrong decisions regarding capital structure can lead to financial difficulties or even bankruptcy. The optimal capital structure reflects the balance between risk and return, which describes how the financial condition of a company. The nonoptimal capital structure becomes an obstacle in the company's business activities that can affect the development of the company. The property sector has a major role in Indonesia's national economic growth. This sector has a multiplier effect on 175 sectors and 350 MSMEs, so the increase in the growth of the property and real estate sectors will have a major influence on increasing demand for other sectors to encourage Indonesia's national economic growth. However, since 2015 this sector has experienced a decline and slowed growth which is as follows:







Apart from its unstable growth rate, the contribution of the property and real estate sectors to Indonesia's Gross Domestic Product (GDP) is still low compared to other ASEAN countries, which was only 2.77% in 2019 (Republika.co.id, 2020). Even the very small GDP contribution of the property and real estate sector has a large impact on the related sectors. With the role of the multiplier effect, the property and real estate sectors have a strategic position in Indonesia's national economic growth, increasing property sector growth will have a major influence

on increasing demand for other sectors to encourage Indonesia's national economic growth. The property and real estate sector requires special attention given its close relationship with economic and population growth. The company needs to read and study the situation to be able to manage the company management properly, especially in terms of managing company funding. The company certainly expects the company's sustainable growth, so it needs the right policy regarding capital related to the problem of the number of funding needs that can be met by the company. Policies that lead to a balance between risk and return are what the company expects. Therefore, the determinants of the capital structure can provide an indication that needs to be considered in determining the optimal company capital structure.

In creating an optimal capital structure, there are some theories have been developed in the financial literature. This study adopts three theories, the first is the trade-off theory which states that the optimal capital structure can be realized by a trade-off between tax benefits on debt and the costs of financial difficulties that arise from bankruptcy risk and agency costs. second, the pecking order theory states that in financial decisions the company has a sequence in using funding sources to minimize information asymmetry problems and the company prioritizes internal funding. The three signaling theories state that companies with favorable prospects will emit positive signals that indicate a good management view of the company's development and tend to avoid issuing shares and trying to obtain new capital with other funding sources, including issuing debt and when companies have low-profit prospects will emit a negative signal indicating that the management's view is not good on the development of the company and the company will tend to issue shares which means bringing new investors to share the losses they earn.

This research uses several factors that are thought to be determinants of capital structure, namely profitability, firm size, firm age, non-debt tax shield, tangibility, growth opportunities, and earnings volatility. The selection of these variables was based on the existence of a research gap in previous studies. The study used the same variables in determining the capital structure but had not obtained consistent research results.

Profitability is a measure of the company's ability to generate profits from the company's operational activities which is a representation of the effectiveness of company management. According to Sofat & Sing (2017), companies with more profits show the availability of a lot of retained earnings so they tend to be less dependent on external funds. Firm size plays an important role in capital

structure decisions that reflects the size of a company in terms of total sales, total assets, or market capitalization owned by the company. According to Gharaibeh & AL-Tahat (2020), large companies have greater capacity, are more diversified, can meet creditor commitments, and are less prone to corporate bankruptcy, so they tend to have high debt levels. Firm age is the number of years from the establishment of a company which became the beginning of the company's operations. The length of the establishment of a company affects the decision to use debt. Older firm age has a longer track record which makes the reputation value higher so that a company in this condition can easily access debt financers and obtain more debt (Khan et al., 2020; Sbeti & Moosa, 2012).

Non-debt tax shield is a substitute for tax benefits as obtained from other than interest such as depreciation, amortization, or research and development expenditures. Companies with high non-debt tax shields in the form of depreciation indicate the need for tax protection from interest on debt financing is lower and the more items included in addition to depreciation, the lower motivation of managers to use debt in its capital structure (Bajaj et al., 2018; Kumar et al., 2017). Tangibility assets owned by the company become a determining factor that can be considered in capital structure decisions that can be used as collateral for the use of debt. According to Yousef (2019), tangibility assets are easier to pledge and cause fewer losses if the company experiences financial difficulties. According to Nguyen et al. (2019), companies with high growth opportunities will use more debt than companies with lower opportunities. Earnings volatility is an increase or decrease in the company's operating income and its risks quickly which shows the uncertainty of the company's earnings flow in the future. Zarebski & Dimovski (2012) argue that if the company's income is uncertain then so is its ability to pay debts so companies must reduce debt as a priority to avoid mandatory interest obligations that can trigger financial difficulties.

In addition, based on a review of the literature on capital structure research that has been widely carried out but there are no consensus results regarding the determinants of capital structure. Moradi & Paulet (2019) and Yousef (2019) find that profitability negatively and significantly affects the capital structure, while Sofat & Singh (2017) and Dhita et al. (2018) show profitability has a positive and significant effect on capital structure. Yousef (2019) shows that growth opportunities have a negative and significant effect on capital structure, while Nguyen et al. (2019) and Chakrabarti (2019) find profitability has a significant positive effect on capital structure.

The novelty in this research from previous studies in Indonesia related to the determinants of the capital structure of the property and real estate sector companies, namely adding the non-debt tax shield and earnings volatility variables in the research, and the signaling theory is added which previous studies not much to explain in depth related to the relationship of variables in determining capital structure. With empirical findings that provided inconclusive results, there is a need to continuously evaluate the validity of capital structure theory by re-examining the determinants of capital structure to bridge the gap between theoretical and practical explanations of finance involving capital structure. Begin the Introduction by providing a concise background account of the problem studied. This study attempts to address this gap by focusing on understanding the determinants of the capital structure of property and real estate companies listed on the Indonesia Stock Exchange for the 2015-2020 period.

# **RESEARCH METHODE**

# Data and Samples

In this study, the population used is the property and real estate sector companies listed on the IDX for the period 2015-2020. The purposive sampling method was used in determining the determination of the research sample. The following are the criteria used in determining the research sample:

- 1. Property and real estate companies listed on the IDX during the 2015-2020 period.
- 2. Property and real estate companies that publish financial reports successively during the 2015-2020 period.
- 3. Property and real estate companies that present financial statements in rupiah.
- 4. Property and real estate companies that display in full the financial data needed in this research related to the variables in the study.

Based on the criteria used in determining the sample, there are 43 property and real estate sector companies listed on the Indonesia Stock Exchange for the 2015-2020 period that have met these criteria, so the number of observations in this study is 258 data. The analytical method used in this research is panel data regression and the data is processed using E-views 12.

# The Regression Model

The regression equation model in this study is as follows:

# DERit = $\beta 0 + \beta 1$ ROAit + $\beta 2$ SIZEit + $\beta 3$ AGEit + $\beta 4$ NDTSit + $\beta 5$ TANGit + $\beta 6$ GROWTHit + $\beta 7$ EVOLit + $\beta 8$ KIit + *e*it

# DARit = $\beta 0 + \beta 1$ ROAit + $\beta 2$ SIZEit + $\beta 3$ AGEit + $\beta 4$ NDTSit + $\beta 5$ TANGit + $\beta 6$ GROWTHit + $\beta 7$ EVOLit + $\beta 8$ KIit + eit

In which Debt to Equity Ratio (DER<sub>it</sub>) and Debt to Assets Ratio (DAR<sub>it</sub>) are the dependent variables; ROA<sub>it</sub> – Profitability; SIZE<sub>it</sub> – firm size; AGE<sub>it</sub> – firm age; NDTS<sub>it</sub> – non-debt tax shield; TANG<sub>it</sub> – tangibility; GROWTH<sub>it</sub> – growth opportunities; EVOL<sub>it</sub> – earnings volatility; KI<sub>it</sub> – institutional ownership;  $\beta 0$  – constant; *e* – error; it – i- companies and t-time;  $\beta_{1-8}$  – regression coefficient.

### **Research Variables**

# **Dependent Variables**

The dependent variable is capital structure. This research employed two measures of capital structure (DER and DAR). Debt to Equity Ratio (DER) is a financial ratio that compares the proportion of equity and debt in financing company assets. Meanwhile, Debt to Asset Ratio (DAR) is a financial ratio that measures the ratio of assets and debt, and how much the company's assets are financed with debt (Chadha & Sharma, 2016).

# **Independent Variables**

The main independent variables considered in this study are profitability, firm size, firm age, non-debt tax shield, tangibility, growth opportunities, and earnings volatility.

Variables		Measures	References		
Dependent	Debt to Equity Ratio	Total Debt/Total Equity	(Ahmad et al., 2017; Moradi & Paulet, 2019; Sofat & Singh, 2017)		
Variables	Debt to Assets Ratio	Total Debt/Total Assets	(Chakrabarti, 2019; Gharaibeh & AL- Tahat, 2020; Yousef, 2019)		
	Profitability (Return on Assets)	Net Income/Total Assets	(Chandra et al., 2019; Kahya et al., 2020; Wang et al., 2019)		
	Firm Size	Ln (Total Assets)	(Gharaibeh & AL-Tahat, 2020; Neves et al., 2020; Yousef, 2019)		
	Firm Age	Year of research-year of establishment	(Chakrabarti, 2019; Chadha & Sharma, 2015; Rahman & Yilun, 2021)		
Independent Variables	Non-Debt Tax Shield	Depreciation/Total Assets	(Rao et al., 2019; Gharaibeh & AL- Tahat, 2020; Khémiri & Noubbigh, 2018)		
	Tangibility	Fixed Assets/Total Assets	(Chaklader & Chawla, 2016; Gharaibeh & AL-Tahat, 2020; Yousef, 2019)		
	Growth Opportunities	(Total Assetst-Total Assetst-1)/Total Assetst-1	(Alipour et al., 2015; Khémiri & Noubbigh, 2018; Saif-Alyousfi et al., 2020)		
	Earnings Volatility	σEBIT/Total Assets	(Khémiri & Noubbigh, 2018; Moradi &		

### Table 1. Operational Variables

			Paulet, 2019; Saif-Alyousfi et al., 2020)
Control Variable	Institutional Ownership	Number of Institutional Ownership/Number of Shares Outstanding	(Cahyani & Isbanah, 2019; Khafid et al., 2020; Puspita & Suherman, 2018)

Source: Data processed by the researcher

### **Control Variable**

This study includes a control variable to avoid biased estimations. The control variable in this study is institutional ownership which is a part of the company's shares owned by institutions such as insurance companies, investments, and others who have a role as a party that monitors the company and has a strong position in influencing the company decisions.

### **RESULT AND DISCUSSION**

#### **Descriptive Statistics**

Descriptive statistics provide an overview of several data information in a clearer, simpler, and easier-to-understand form which is indicated by the average value (mean), maximum value, minimum value, and standard deviation of the capital structure (DER and DAR) as the dependent variable, profitability, firm size, firm age, non-debt tax shield, tangibility, growth opportunities, and earnings volatility as independent variables, and institutional ownership as the control variable. The descriptive statistics are shown in table 2, as follows:

	DER	DAR	ROA	SIZE	USIA	NDTS	TANG	GROWTH	EVOL	KI
Mean	0,651	0,356	0,030	28,956	29	0,070	0,092	0,105	0,049	0,693
Median	0,508	0,352	0,028	29,275	30	0,022	0,033	0,043	0,033	0,791
Max	3,701	1,108	0,359	31,740	65	0,874	0,704	3,565	0,349	0,999
Min	-10,255	0,035	-0,375	23,660	2	0,0003	0,0001	-0,259	0,005	0,0000012
Std.Dev	0,929	0,190	0,072	1,623	11,115	0,144	0,132	0,307	0,052	0,276
Obs.	258	258	258	258	258	258	258	258	258	258

#### **Table 2. Descriptive Statistics**

Source: Data processed by the researcher using E-views 12

#### **1.1.Multicollinierity Test**

Based on table 3 regarding the results of the multicollinearity test, it can be seen that there is no correlation coefficient between the independent variables with a value of 0.8. So it can be concluded that there is no multicollinearity problem in this study.

### Table 3. Multicollinierity Test

	ROA	SIZE	USIA	NDTS	TANG	GROWTH	EVOL	KI
ROA	1.000000							
SIZE	0,106	1.000000						
USIA	-0,021**	-0,145	1.000000					
NDTS	-0,153***	-0,187***	0,219	1.000000				
TANG	0,053*	-0,131***	0,187	0,438	1.000000			
GROWTH	0,165	0,061*	-0,108***	-0,019***	0,094*	1.000000		
EVOL	0,050**	-0,113***	0,089*	0,060*	0,026***	0,007***	1.000000	
KI	0,193	0,081*	0,097*	-0,020***	-0,062***	0,030**	0,051*	1.000000
	-		-					

Source: Data processed by the researcher using E-views 12

Notes : \*\*\*, \*\*, and \* shows statistical significance at the 1%, 5%, and 10% levels, respectively.

### **Heteroscedasticity Test**

Based on table 3 in model 1 with the capital structure proxy is DER, it can be seen that the Prob value. F-statistic of 0.2654. These results indicate the Prob value. F-statistic > 0.05 which means there is no heteroscedasticity. Meanwhile, in model 2 where the capital structure proxy is DAR, it can be seen that the value of Prob. F-statistic of 0.2945. These results indicate that the value of Prob. F-statistic > 0.05 which means there is no heteroscedasticity.

#### **Table 4. Heterocedasticity Test**

	Test Breusch-Pagan-Godfrey				
	Dependent Variable	Prob. F			
	Proxy				
Model 1	DER	0,2654			
Model 2	DAR	0,2945			

Source: Data processed by the researcher using E-views 12

### **Regression Result**

The result of lagrange multiple test shows that the model common effect is the most appropriate model in model 1 to be used in this research. The result of the panel data regression equation, is as follows:

	Y = DER		
	Coefficient	Prob.	
С	-2,515	0,0221	
ROA	-0,885	0,2919	
SIZE	0,109	0,0030***	
USIA	-0,0004	0,9354	

### Table 5. Panel Data Regression Test Results Model 1

-0,519	0,2574	
0,799	0,1066	
-0,205	0,2831	
-1,170	0,2905	
0,114	0,5929	
0,060		
0,029		
1,955546		
0,052620		
43		
258		
Common Effect Model		
	-0,519 0,799 -0,205 -1,170 0,114 0,0 0,0 1,95 0,05 4 2 Common E	

Source: Data processed by the researcher using E-views 12 Notes: \*\*\*, \*\*, dan \* shows statistical significance at the 1%, 5%, and 10% levels, respectively.

Based on table 5 shows that the coefficient value generated from the profitability variable is -0.885 with the resulting probability value showing a value of 0.2919 > 0.1. This value means that profitability has a negative and insignificant effect on capital structure, so the first hypothesis (H<sub>1</sub>) which states that profitability has a negative and insignificant effect is rejected. The coefficient value resulting from the firm size variable is 0.109 with a probability value of 0.0030 < 0.1. This means that firm size has a positive and significant effect on capital structure, therefore the second hypothesis (H<sub>2</sub>) is accepted. While the coefficient value was generated from the variable firm size of -0.0004 with a probability value showing a value of 0.9354. The value is greater than 0.1 which means that the age of the company has a negative and insignificant effect on the capital structure, so the third hypothesis  $(H_3)$  states that the age of the company has a positive and significant effect on the capital structure is rejected. the coefficient value generated from the firm size variable is -0.519 and the probability value generated shows a value of 0.2574 which is greater than 0.1. This value means that the non-debt tax shield has a negative and insignificant effect on the capital structure, so the fourth hypothesis  $(H_4)$  which states that the non-debt tax shield has a negative and significant effect on the capital structure is rejected. The coefficient value resulting from the tangibility variable is 0.799 and the probability value shows the result is 0.1066. This value is greater than 0.1 which means that the effect of tangibility on the capital structure of property and real estate companies has a positive and insignificant effect on capital structure, so the fifth hypothesis (H<sub>5</sub>) states that tangibility has a positive and significant effect is rejected. the coefficient value generated from the growth opportunities variable is -0.205 and the probability value generated shows a value of 0.2831 > 0.2831

0.1. This value indicates that growth opportunities have a negative and insignificant effect on capital structure, so the sixth hypothesis (H<sub>6</sub>) which states that growth opportunities have a positive and significant effect on capital structure is rejected. the coefficient value resulting from the earnings volatility variable is -1.1170 and the probability value generated is 0.2905, > 0.01. This means that earnings volatility has a negative and insignificant effect on capital structure, so the seventh hypothesis (H<sub>7</sub>) which states that earnings volatility has a negative and significant effect on capital structure is rejected.

#### Discussion

### The Influence of Profitability on Capital Structure

Profitability has a negative and insignificant effect on capital structure. The direction of the relationship is in accordance with the pecking order theory in which the company will prioritize the use of internal funds first as a source of funding and will use external funds if internal funding is insufficient. This result is in line with research conducted by Aloysius (2017) which states that profitability has a negative and insignificant effect which indicates that the profitability of the company is not intended to increase the capital structure where there is a possibility that profitability is used to add to the company's operational activities and distributed to shareholders. When viewed from the average ROA of property and real estate companies produced is very small at 3%, it is possible that the net profit obtained from the total assets owned is not a consideration in determining the capital structure.

#### The Influence of Firm Size on Capital Structure

Firm size has a positive and significant effect on capital structure. This result is in line with research conducted by Gharaibeh & AL-Tahat (2020) and Yousef (2019) which states that firm size has a positive and significant effect because it has a larger capacity, and is more diversified, can meet creditor commitments, and is less prone to bankruptcy. The size of a company can be used as collateral, so companies with larger sizes have better borrowing capacity because they have collateral in the form of larger assets than small companies. This relationship is in accordance with signaling theory which states that when a company has good business prospects, the company will fund its investment opportunities by issuing debt which is a positive signal that the company is in good condition.

#### The Influence of Firm Age on Capital Structure

Firm age has a negative and insignificant effect on capital structure. The direction of this relationship is not in line with the signaling theory but is in line with the pecking order theory which states that relatively old companies tend to

have good cash flows so they do not use debt financing sources. These results are in line with research conducted by Bernawati & Batara (2019) which state that firm age has a negative and insignificant effect because experience in managing companies, especially related to finance, is the main factor and long firm age does not always indicate that the company can to manage its business properly.

### The Influence of Non-Debt Tax Shield on Capital Structure

Non-debt tax shield has a negative and insignificant effect on capital structure. The direction of this relationship is in line with the trade-off theory which states that if the tax benefits of borrowing interest encourage companies to use more debt, then those with more non-debt tax shield benefits will use less debt in their capital structure. These results are in line with research conducted by Chaklader & Chawla (2016), Febriani & Kristanti (2020), and Prasetya & Asandimitri (2014) which state that the non-debt tax shield has no significant effect on the capital structure because the acquisition of additional funds from the depreciation value is not significant. including real funds, so it cannot fund the company's operational activities directly.

### The Influence of Tangibility on Capital Structure

Tangibility to the capital structure of property and real estate companies has a positive and insignificant effect on the capital structure. The direction of this positive influence is in accordance with the signaling theory which argues that the positive signal given by the company indicates that the management views the company's prospects in good condition and can fulfill its obligations with the guarantee of its fixed assets. The insignificant relationship between tangibility and capital structure means that property and real estate companies listed on the Indonesia Stock Exchange for the 2015-2020 period are more likely not to use their fixed assets as collateral to obtain debt but instead use them for their operational activities. This result is in line with research conducted by Ratuloly et al. (2020) which states that tangibility has a positive and insignificant effect because a company with high tangibility reflects an adequate number of assets so that the company can meet its operational needs with internal funds compared to external.

# The Influence of Growth Opportunities on Capital Structure

Growth opportunities have a negative and insignificant effect on capital structure. The direction of this influence is not in accordance with the signaling theory but is in line with the trade-off theory which links growth opportunities with the costs of financial difficulties because higher company growth means greater costs of financial difficulties which in this theory the optimal capital structure creates a trade-off between tax benefits and costs of financial distress. These results are in line with research conducted by Yunita & Aji (2018) and Prasetya & Asandimitri (2014) which state that growth opportunities have a negative and insignificant effect on the capital structure because growth opportunities are high and low, they will continue to use internal funds because high opportunities often face greater uncertainty.

### The Influence of Earnings Volatility on Capital Structure

Earnings volatility has a negative and insignificant effect on the capital structure. This is in line with the signaling theory which states that when the company's condition is not good, the company will hesitate to issue debt because of the company's concerns regarding difficulties in meeting its debt obligations and increasing the possibility of bankruptcy, in this bad condition the company will use other external funding in the form of share issuance. This result is in line with the research conducted by Hidayati & Septiana (2021) which revealed that earnings volatility has a negative and insignificant effect on the capital structure which is because most of the company's earnings are in a stable condition. Therefore, the level of earnings volatility is not a determinant in preparing the capital structure.

#### **Robustness Test**

Table 6 presents a robustness test which uses the Debt to Assets Ratio as a proxy for the capital structure which is the dependent variable. The results of the regression analysis presented in table 9 show that several variables do not support the main analysis with the Debt to Equity Ratio as a proxy for capital structure, including non-debt tax shield, tangibility, and earnings volatility, while other independent variables such as profitability, firm size, age companies, and growth opportunities support the main analysis results.

Variable	Ŷ	′= DAR
variable	Coefficient	Prob.
С	-0,763	0,0700
ROA	-0,108	0,3055
SIZE	0,041	0,0046***
USIA	-0,0009	0,6114
NDTS	0,032	0,5242
TANG	0,193	0,0149**
GROWTH	-0,032	0,1176

**Table 6. Robustness test Results** 

EVOL	0,259	0,3403		
KI	-0,080	0,0508*		
R-Squared	0,076			
Adj. R-Squared	0,046			
F-Statistic	2,550725			
Prob (F-Statistic)	0,010932			
Sample	43			
Periods	6			
Observations	258			
Regression Model	REM			

Source: Data processed by the researcher using E-views 12 Notes : \*\*\*, \*\*, dan \* shows statistical significance at the 1%, 5%, and 10% levels, respectively.

### CONCLUSION

Based on the results and discussions that have been carried out in this research regarding the effect of profitability, firm size, firm age, non-debt tax shield, tangibility, growth opportunities, and earnings volatility on the capital structure of the property and real estate sector companies listed on the Indonesia Stock Exchange in the period 2015 -2020, it can be concluded as follows:

- 1. Profitability has a negative and insignificant effect on capital structure with DER proxy. The results of the main analysis remain consistent after the robustness test with DAR as a proxy for capital structure confirms that profitability has a negative and insignificant effect on capital structure.
- 2. Firm size has a positive and significant effect on capital structure with DER proxy. The results of this main analysis remain consistent after the robustness test with DAR as a proxy for capital structure confirms that firm size has a positive and significant effect on capital structure.
- 3. Firm age has a negative and insignificant effect on DER. The results of this main analysis also remain consistent after the robustness test with DAR as a proxy for capital structure confirms that firm age has a negative and insignificant effect on capital structure.
- 4. Non-Debt Tax Shield has a negative and insignificant effect on DER. The results of this main analysis are not in harmony after the robustness test with DAR as a proxy for capital structure shows that the Non-Debt Tax Shield has a positive but not significant effect on capital structure.
- 5. Tangibility has a positive and insignificant effect on capital structure. The results of this main analysis are not in harmony after the robustness test with DAR as a proxy for capital structure shows that tangibility has a positive and significant effect on capital structure.

- 6. Growth Opportunities have a negative and insignificant effect on DER. The results of the main analysis remain consistent after the robustness test with DAR as a proxy for capital structure confirms that Growth Opportunities have a negative and insignificant effect on capital structure.
- 7. Earnings volatility has a negative and insignificant effect on DER. The results of this main analysis are not consistent after the robustness test with DAR as a proxy for capital structure shows that earnings volatility has a positive and insignificant effect on capital structure.

### ACKNOWLEDGEMENT

Based on the research results that have been obtained, the managerial implication for property and real estate companies listed on the Indonesia Stock Exchange for the 2015-2020 period is that company managers need to pay attention to the size of the company in terms of total assets and also the level of fixed assets owned in determining its capital structure. These variables can be taken into consideration by company managers in making decisions on the combination of funding sources, whether using their capital or foreign capital in the form of debt. The funding is expected to create an optimal capital structure for the company's sustainability.

### REFERENCES

- Ahmad, G. N., Lestari, R., & Dalimunthe, S. (2017). Analysis Of Effect Of Profitability, Assets Structure, Size Of Companies, And Liquidity To Capital Structures In Mining Companies Listed In Indonesia Stock Exchange Period 2012 - 2015. JRMSI - Jurnal Riset Manajemen Sains Indonesia, 8(2), 339–354. Https://Doi.Org/10.21009/Jrmsi.008.2.09
- Ahmed Sheikh, N., & Wang, Z. (2011). Determinants Of Capital Structure: An Empirical Study Of Firms In Manufacturing Industry Of Pakistan. *Managerial Finance*, 37(2), 117–133. Https://Doi.Org/10.1108/03074351111103668
- Alipour, M., Mohammadi, M. F. S., & Derakshan, H. (2015). Article Information : Determinants Of Capital Structure : An Empirical Study Of Firms In Iran. International Journal Of Law And Management, 57(1), 53–83.
- Aloysius, J. Dan. (2017). Faktor Faktor Yang Mempengaruhi Struktur Modal (Studi Empiris Pada Perusahaan Property Dan Real Estate Yang Terdaftar Di Bursa Efek Indonesia Tahun 2010-2014). PROFITA, 10(3), 373–387.
- Bajaj, Y., Kashiramka, S., & Singh, S. (2018). Dynamics Of Capital Structure: Evidence From Indian Manufacturing Firms. *Journal For Global Business* Advancement, 11(6), 667–686. Https://Doi.Org/10.1504/JGBA.2018.097774

Bernawati, Y., & Batara, G. R. (2019). Good Corporate Governance, Firm Age,

And Capital Structure (Studies On Property And Real Estate Companies Listed On The IDX). *Sustainable Business Accounting And Management Review* (SBAMR), 1(3), 101–111.

- Cahyani, I. D., & Isbanah, Y. (2019). Pengaruh Struktur Kepemilikan, Tangibility, Firm Age, Business Risk, Kebijakan Dividen, Dan Sales Growth Terhadap Struktur Modal Perusahaan Sektor Properti Real Estate Yang Terdaftar Di BEI Tahun 2012-2016. Jurnal Ilmu Manajemen, 7(1), 124–132.
- Chadha, S., & Sharma, A. K. (2015). Determinants Of Capital Structure: An Empirical Evaluation From India. *Journal Of Advances In Management Research*, 12(1), 3–14. Https://Doi.Org/10.1108/JAMR-08-2014-0051
- Chadha, S., & Sharma, A. K. (2016). An Empirical Study On Capital Structure In Indian Manufacturing Sector. *Global Business Review*, 17(2), 411–424. Https://Doi.Org/10.1177/0972150915619817
- Chaklader, B., & Chawla, D. (2016). A Study Of Determinants Of Capital Structure Through Panel Data Analysis Of Firms Listed In NSE CNX 500. *Vision*, 20(4), 267–277. Https://Doi.Org/10.1177/0972262916668700
- Chakrabarti, A. (2019). The Capital Structure Puzzle Evidence From Indian Energy Sector. *International Journal Of Energy Sector Management*, 13(1), 2–23. Https://Doi.Org/10.1108/IJESM-03-2018-0001
- Chandra, T., Junaedi, A. T., Wijaya, E., Suharti, S., Mimelientesa, I., & Ng, M. (2019). The Effect Of Capital Structure On Profitability And Stock Returns. *Journal Of Chinese Economic And Foreign Trade Studies*, 12(2), 74–89. Https://Doi.Org/10.1108/Jcefts-11-2018-0042
- Dakua, S. (2018). Effect Of Determinants On Financial Leverage In Indian Steel Industry : A Study On Capital Structure. *International Journal Of Finance And Economics, July,* 1–10. Https://Doi.Org/10.1002/Ijfe.1671
- Dhita, S., Achsani, N. A., Sembel, R., & Purwanto, S. (2018). Determinants Of Capital Structure: Empirical Evidence From Slovakia. *European Journal Of Business And Management*, 10(17), 36–45.
- Febriani, A. D., & Kristanti, F. T. (2020). Determinan Struktur Modal Perusahaan Infrastruktur, Utilitas, Dan Transportasi. *E-Jurnal Ekonomi Dan Bisnis* Universitas Udayana, 3, 275–302.
- Gharaibeh, O. K., & AL-Tahat, S. (2020). Determinants Of Capital Structure: Evidence From Jordanian Service Companies. Investment Management And Financial Innovations, 17(2), 364–376. Https://Doi.Org/10.21511/Imfi.17(2).2020.28

Hidayati, H., & Septiana, G. (2021). Pengaruh Likuiditas, Ukuran Perusahaan

Dan Volatilitas Laba Terhadap Leverage Pada Perusahaan Terdaftar Di Bursa Efek Indonesia. *Ekonomi, Keuangan, Investasi Dan Syariah (EKUITAS)*, 3(2), 156–162. Https://Doi.Org/10.47065/Ekuitas.V3i2.1081

- Indah Puspita, R. P., & Suherman, S. (2018). The Impact Of Dividend Policy, Managerial Ownership, Institutional Ownership To Capital Structure On Manufacturing Company In Indonesia Stock Exchange (Idx) Period 2012-2016. Journal Of Business And Behavioural Entrepreneurship, 2(1), 28–39. Https://Doi.Org/10.21009/Jobbe.002.1.04
- Kahya, E. H., Ersen, H. Y., Ekinci, C., Taş, O., & Simsek, K. D. (2020). Determinants Of Capital Structure For Firms In An Islamic Equity Index: Comparing Developed And Developing Countries. *Journal Of Capital Markets Studies*, 4(2), 167–191. Https://Doi.Org/10.1108/Jcms-07-2020-0023
- Khafid, M., Prihatni, R., & Safitri, I. E. (2020). The Effects Of Managerial Ownership, Institutional Ownership, And Profitability On Capital Structure: Firm Size As The Moderating Variable. *International Journal Of Financial Research*, 11(4), 493–501. Https://Doi.Org/10.5430/Ijfr.V11n4p493
- Khan, K., Qu, J., Shah, M. H., Bah, K., & Khan, I. U. (2020). Do Firm Characteristics Determine Capital Structure Of Pakistan Listed Firms? A Quantile Regression Approach. *Journal Of Asian Finance, Economics And Business*, 7(5), 61–72. Https://Doi.Org/10.13106/JAFEB.2020.VOL7.NO5.061
- Khémiri, W., & Noubbigh, H. (2018). Determinants Of Capital Structure: Evidence From Sub-Saharan African Firms. *Quarterly Review Of Economics* And Finance, 70, 150–159. Https://Doi.Org/10.1016/J.Qref.2018.04.010
- Kumar, S., Colombage, S., & Rao, P. (2017). Research On Capital Structure Determinants: A Review And Future Directions. *International Journal Of Managerial Finance*, 13(2), 106–132. Https://Doi.Org/10.1108/IJMF-09-2014-0135
- Moradi, A., & Paulet, E. (2019). The Firm-Specific Determinants Of Capital Structure – An Empirical Analysis Of Firms Before And During The Euro Crisis. Research In International Business And Finance, 47, 150–161. Https://Doi.Org/10.1016/J.Ribaf.2018.07.007
- Nguyen, C. T., Bui, C. M., & Pham, T. D. (2019). Corporate Capital Structure Adjustments : Evidence From Vietnam Stock Exchange Market. *Journal Of Asian Finance, Economics And Business, 6*(3), 41–53. Https://Doi.Org/10.13106/Jafeb.2019.Vol6.No3.41
- Panda, A. K. (2020). Determinants Of Capital Structure ; A Sector-Level Analysis For Indian Manufacturing Firms. International Journal Of Productivity And Performance Management, 69(5), 1033–1060. Https://Doi.Org/10.1108/IJPPM-12-2018-0451

- Raghibi, A., & Oubdi, L. (2021). Capital Structure Determinants Of Shari'ah-Compliant Firms: Evidence From The MENA Region. *Journal Of Islamic Economics*, 5(1), 16–28. Https://Doi.Org/10.26740/Al-Uqud.V5n1.P16-28
- Rahman, M. J., & Yilun, L. (2021). Firm Size, Firm Age, And Firm Profitability: Evidence From China. Journal Of Accounting, Business And Management (JABM), 28(1), 101. Https://Doi.Org/10.31966/Jabminternational.V28i1.829
- Ratuloly, M., Wijayanti, A., & Siddi, P. (2020). Pengaruh Kebijakan Dividen, Likuiditas, Tangibility, Asset Turnover, Dan Company Growth Terhadap Struktur Modal. OIKOS Jurnal Kajian Pendidikan Ekonomi Dan Ilmu Ekonomi, IV(1), 12–24. Https://Doi.Org/10.23969/Oikos.V4i1.2161
- Republika.Co.Id. (2020, May 14). *Kontribusi Sektor Properti Terhadap PDB Perlu Ditingkatkan* | *Republika* Online. Https://Www.Republika.Co.Id/Berita/Qabvv5380/Network
- Saif-Alyousfi, A. Y. H., Md-Rus, R., Taufil-Mohd, K. N., Mohd Taib, H., & Shahar, H. K. (2020). Determinants Of Capital Structure: Evidence From Malaysian Firms. *Asia-Pacific Journal Of Business Administration*, 12(3–4), 283–326. Https://Doi.Org/10.1108/APJBA-09-2019-0202
- Sbeti, W. M., & Moosa, I. (2012). Firm-Specific Factors As Determinants Of Capital Structure In The Absence Of Taxes. *Applied Financial Economics*, 22(3), 209–213. Https://Doi.Org/10.1080/09603107.2011.610738
- Sofat, R., & Singh, S. (2017). Determinants Of Capital Structure: An Empirical Study Of Manufacturing Firms In India. International Journal Of Law And Management, 59(6), 1029–1045. Https://Doi.Org/10.1108/Ijlma-05-2016-0051
- Tri Prasetya, B., & Asandimitri, N. (2014). Pengaruh Profitabilitas, Ukuran Perusahaan, Growth Opportunity, Likuiditas, Struktur Aset, Resiko Bisnis Dan Non Debt Tax Shield Terhadap Struktur Modal Pada Perusahaan Sub-Sektor Barang Konsumsi. Jurnal Ilmu Manajemen (JIM), 2(4), 1341–1353.
- Umer, U. M. (2014). Determinants Of Capital Structure: Empirical Evidence From Large Taxpayer Share Companies In Ethiopia. International Journal Of Economics And Finance, 6(1), 53–65. Https://Doi.Org/10.5539/Ijef.V6n1p53
- Wang, X., Manry, D., & Rosa, G. (2019). Ownership Structure, Economic Fluctuation, And Capital Structure: Evidence From China. International Journal Of Finance And Economics, 24(2), 841–854. Https://Doi.Org/10.1002/Ijfe.1694
- Yousef, I. (2019). The Determinants Of Capital Structure: Evidence From GCC And UK Real Estate Sectors. *Real Estate Management And Valuation*, 27(2), 108–125. Https://Doi.Org/10.2478/Remav-2019-0019

- Yunita, S., & Aji, T. S. (2018). Pengaruh Likuiditas, Tangibility, Growth Opportunity, Risiko Bisnis, Dan Ukuran Perusahaan Terhadap Struktur Modal. Jurnal Ilmu Manajemen, 6(4), 409–416.
- Zarebski, P., & Dimovski, B. (2012). Determinants Of Capital Structure Of A-Reits And The Global Financial Crisis. *Pacific Rim Property Research Journal*, 18(1), 3–19. Https://Doi.Org/10.1080/14445921.2012.11104347