Profitability as a Mediation Factor: A Test of The Relationship of Capital Structure to Company Value

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Abstract. This study investigates how profitability affects the link between capital structure and business value as a mediating factor. 38 companies participated in the study on real estate and property companies listed on the Indonesia Stock Exchange from 2013 to 2017. Path analysis from the multivariate regression was employed for data analysis. The findings of the study demonstrate how important and beneficial the capital structure is to value. Profitability does not, however, act as a mediating factor in the connection between capital structure and business value. Because of the restrictions of the research object and the proxies used for each observed variable, it is impossible to generalize the study's findings.

Keywords: Capital Structure, Firm Value, Profitability.

1. Introduction

A company's long-term objective is to maximize its value by enhancing the well-being of its owners or shareholders. The value of the company is a certain condition that the firm has attained, and it describes how investors perceive the management's success in running the business through various methods of putting management functions into place from the time the company was created to the present. By maximizing the present value of all shareholder earnings anticipated to be realized in the future, it is possible to maximize the company's worth by maximizing the prosperity of shareholders [1].

By maximizing the company's value, the objective of increasing shareholder wealth can be accomplished [1]. How well or poorly management handles the company's money is indicated by its worth [2]. Because rising share prices would benefit shareholders, it is possible to value a firm by looking at its share price or by calculating its book value, also referred to as Price book value (PVB).

The PBV ratio calculates the difference between the market price and the book value of a firm. The book value is the amount shareholders will receive upon the company's liquidation, hence the PBV ratio is used to determine how much the market price differs from the book value. The value of the company increases when the PBV ratio rises over 1 (one). However, what occurred in this study was a continuous drop in the company's worth from 2013 to 2017 as indicated by the PBVratio.

Profitability is a measure of a company's managerial effectiveness [3]. The rate at which a company's profitability is increasing is, in the eyes of an investor, one of the key indicators of the company's future possibilities. The goal of profitability is to maximize profits for the company so that the owner may fund additional investments in the business.

The property and real estate sub-sector is one of the sub-sectors that is currently very important to the Indonesian economy. The Central Statistics Agency (BPS) data, which is particularly evident in the realization of domestic investment by the economic sector, suggest that investment growth in property and real estate businesses on the Indonesia Stock Exchange

is increasing yearly. The first quarter of 2015 had a 5.26 percent increase in the performance of the property and real estate business sector, which is reflected in an increase in residential dwelling sales that are in accordance with residential needs. The property and real estate industry sector increased by 1.17 percent in the first quarter of 2015 compared to the fourth quarter of 2014.

Investors can evaluate the facts available about the state of property and real estate companies based on a report from BPS in order to improve decision-making and business strategies that will be employed. As a result, businesses must continuously enhance their performance in order to raise their worth. The following table details the evolution of capital structure, business value, and profitability in real estate and property companies between 2013 and 2017. These metrics include DER, PBV, and ROE.

Table 1. Shows the Growth of The DER, PBV, and ROE Property and Real Estate Companies from 2013 to 2017.

Year	DER	PBV	ROE
2013	0,83	1,57	12,35
2014	0,76	1,81	11,39
2015	0,70	1,58	8,46
2016	0,67	1,31	7,60
2017	0,72	1,23	5,97

Source: www.idx.co.id (data processed, 2019)

Between 2014 and 2017, the company's value as determined by PBV decreased. It decreased to 1.23 times in 2017 from 1.57 times in 2013, although rising to 1.81 times in 2014. While the capital structure of 2013 climbed in 2014 by 0.75 times, it continued to decline from 2014 to 2016 and then rose by 0.72 times in 2017. The impact of capital structure on business value has been covered in a number of earlier research. The capital structure has a positive and considerable impact on business value, according to research by [4], [5], [6], [7], and [8]. According to research by [9], [10], [11], [12], and [13], capital structure has a negative and significant impact on the value of the company. The findings of this study are in direct opposition to those studies.

Further research is required because there are conflicting findings about the impact of capital structure on firm value. By including Profitability as a supplemental variable, the author employs a different model. Profitability (ROE) was selected as the intermediary variable since it solely takes into account the debt ratio utilized to compare the company's operating borrowing rate to its equity value. This ratio is frequently used by investors to assess the proportion of a company's debt to its assets. The danger of the company's capacity to pay off its short-term debt increases with the DER value. A research issue, namely whether DER impacts PBV and is mediated by ROE, which is supported by a trade of theory as a big theory, develops based on phenomena and inconsistencies of the study findings. The following research inquiries were posed in response to the definition of the research problem:

1. Does the capital structure have an impact on the company's value?
2. Does profitability depend on the capital structure?
3. Can the impact of capital structure on firm value be mitigated by profitability??

2. Literature Review and Hypothesis Development

2.1 Trade Off Theory
The trade-off theory is a capital structure theory that has a relationship to company value. This idea shows how the advantages gained from using debt are balanced. It is acceptable for a corporation to employ debt in its operations if the advantages are substantial compared to the cost of the debt. On the other hand, debt accumulation is not allowed when duty does not offer substantial benefits. The risk will significantly increase if the corporation raises its debt level. [14]. According to [15], the value of enterprises with debt will rise as their debt burdens rise. However, eventually the weight starts to decrease. The debt level is at its ideal level at that point. The statement that the value of the company with debt will rise with growing debt is the relationship between the trade-off theory in this study. This suggests that the capital structure has a favorable effect on firm value.

2.2 Capital Structure
Businesses frequently assess the situation, decide the optimum capital structure, and select a goal capital structure, maybe one with a fixed amount like 45 percent debt, according to [16]. The company's overall worth is used to calculate the debt to capital ratio. Equity and debt are combined in the capital structure (preferred stock and common stock). Businesses must pay particular attention to the debt to capital ratio in order to get the necessary capital. In this case, the company must select the optimum capital allocation techniques to balance debt and equity in a way that will enable it to maximize profits, [17]. From the foregoing information, it can be inferred that the capital structure, which is a comparison of the company's permanent short-term debt, long-term debt, preferred stock, and common stock, is a component of the financial structure.

With the solvency ratio, capital structure or leverage can be assessed. Solvency ratio analysis, according to [18], is a study used to gauge a bank's capacity to fulfill long-term obligations or its capacity to do so in the case of bank collapse. This ratio is also used to assess the importance of investing these money in various categories of bank-owned assets by contrasting the volume (amount) of funds collected from various debts (short- and long-term) and other sources outside the bank's capital. The Capital Adequacy Ratio (CAR), Debt to Equity Ratio (DER), and Long Term Debt to Asset ratio are a few examples of solvency ratios.

The ratio is frequently used to determine how much money the borrower (the creditor) gives the business owner. The capital structure, specifically the Debt to Equity Ratio, shows the debt ratio. [19]. By contrasting all debt, including current debt, with all equity, this ratio is sought.

$$\textit{Debt to Equity Ratio} = \frac{TOTAL\ DEBT}{EKUITY}$$

2.3 Firm Value
According to [16], management must capitalize on the company's current strengths and address its deficiencies if it wants to increase its value. Financial analysis include 1) contrasting the performance of the company with that of other businesses, particularly those in the same industry, and 2) assessing trends in the business's financial status. According to [20], a company's performance is expressed by its stock price, which is determined by supply and demand on the capital market and reflects how the general public views the company's

performance. Price to book value is utilized as a proxy for this research because it can be used as a benchmark for a good company value, in accordance with Modigliani and Miller, who claim that it reflects investors' perceptions of the company.

The market price to book value ratio of a stock reveals how investors feel about the business. Businesses with profits and flows that are growing are sold at a greater book value ratio than businesses with poor returns because they are seen as fair by investors, [16].

$$Price\ Book\ Value\ (PBV) = \frac{Market\ Price\ per\ Share}{Book\ Value\ per\ Share}$$

2.4 Profitability

The profitability ratio reflects the outcome of all operational and financial actions [16]. While profitability can be understood as the amount of profitability, according to [20], it is the degree to which a company can turn a profit. [19], The Return On Equity (ROE) ratio, also known as own capital rentability, is one way to quantify profitability. It measures net profit after tax with own capital. This ratio illustrates how effectively own capital is used. A ratio known as return on equity (ROE) measures net profit after tax with own capital. Khanmir (2016).

$$ROE\ (Return\ On\ Equity) = \frac{Net\ income\ (Net\ Income)}{Total\ Equity}$$

2.5 The Effect of Capital Structure on Firm Value

In their research, [4] performed an empirical study to investigate the relationship between capital structure and business value. Their sample included 23 real estate and property companies from the IDX across a five-year period (2010–2014). The path analysis model is used in this study. According to the study's findings, the capital structure greatly increased firm value. Other relevant research findings, which demonstrate that capital structure significantly improves value company, are given by [21], [22], [23], and [24]. Based on these justifications, the first hypothesis put out is:

H1: The Capital Structure Enhances Firm Value

2.6 The Effect of Capital Structure on Profitability

[25], described empirical research on this topic, employing samples drawn from up to 35 of the top corporations in Indonesia over the course of three years, from 2010 to 2012, using the purposive sampling approach and multiple regression statistical methods. The study's findings demonstrate that borrowing more money can boost profits. Only to the degree that tax savings from interest on loans that are tax deductible are larger than or equal to the cost of financial distress will there be an increase in the usage of debt. Other relevant research findings, which demonstrate that capital structure significantly improves profitability, are given by [26], [27], and [28]. Based on these justifications, the first hypothesis put out is:

H2: Capital Structure Influences Profitability in a Positive Manner

2.7 The Effect of Profitability on Firm Value

Researchers have examined the connection between profitability and firm value, including [7], which demonstrates that the larger the profit, the greater the firm worth. [5] In order to

demonstrate that higher earnings are a sign of stronger business possibilities, their study examined 32 real estate and property companies that were listed on the Indonesia Stock Exchange between 2010 and 2014. Due to the good reaction from investors, there is a higher demand for shares, which raises the company's value. Other pertinent research suggests that businesses with consistent and higher profits are a good sign for investors, which will improve the company's worth [29]. Other relevant research findings, which demonstrate that profitability significantly improves value company, are given by [30], [31], and [32]. Based on these justifications, the first hypothesis put out is: Based on these justifications, the first hypothesis put out is:

H3: Profitability increases a company's value.

3. Research Method

3.1 Population and Sample
52 real estate and property businesses that were listed on the Indonesia Stock Exchange (IDX) between 2013 and 2017 made up the study's sample. Purposive sampling was used for the sampling technique, which involved choosing a sample of firm shares during the research period based on predetermined criteria. The 38 businesses chosen as research samples were determined using the sampling criteria.

3.2 Measurement Variable
Price to book value (PBV), the ratio between the book price per share and the book value per share, is used in this study to quantify firm value as the dependent variable [16]. The debt-to-equity ratio (DER), or the proportion of total debt to equity, is used to determine capital structure as an independent variable [19]. Return on equity (ROE), the ratio of net income to total equity, is used to quantify profitability as an auxiliary variable [19].

3.3 Method of Collecting Data
A literature review and a review of the supporting documentation served as the study's primary methods for gathering data. The primary purpose of literature study is to find some literature that is connected to the theories and concepts important to the investigation. In order to get information on firm performance in the Property and Real Estate Sub-Sector Listed on the Indonesia Stock Exchange for the 2013–2017 timeframe, documentation studies are primarily used.

3.4 Data Analysis Technique

3.5 Descriptif Statistics
The average value, standard deviation, variance, maximum, minimum, total, range, kurtosis, and skewness of the data are all provided by descriptive statistics [33]. The average value, standard deviation, maximum value, and minimum value of DER, PBV, and ROE are used in this study to determine the distribution of observation data.

3.6 Inferential Statistics
Inferential statistics are used to assess sample data, and the outcomes are then applied to a specific population, claims [34]. Classical assumption tests, route analysis from multivariate regression, and hypothesis testing are among the inferential statistics used in this work.

3.7 Classic Assumption Test.

To ensure that the results are objective, the multivariate regression equation must satisfy the conditions for a normal data distribution, free from multicollinearity, autocorrelation, heteroscedasticity, and linearity. The classical assumption test, which comprises the normalcy test, multicollinearity test, autocorrelation test, heteroscedasticity test, and linearity test, is used to assess any potential deviation from the classical assumption, [33].

3.8 Path Analysis

Path analysis is a multiple linear analysis extension, or path analysis is the use of regression analysis to estimate causality linkages between variables (causal models) that have already been established based on theory, according to [33]. The study will test the following regression equation:

$$PBV= \beta0+ \beta1DER+\varepsilon \qquad (1)$$
$$DER= \beta0+ \beta2ROE+ \varepsilon \qquad (2)$$
$$PBV= \beta0+ \beta1DER+ \beta2ROE+ \varepsilon \qquad (3)$$

Formula description:
β = beta
ε = epsilon
DER = *Debt to Equity Ratio*
ROE = *Return On Equity*
PBV = *Price Book Value*

3.9 Hypothesis Test

The significance of the direct and indirect relationships between capital structure and business value are determined by hypothesis testing. Using the t-test in the partial test While the Sobel test parameter is used in the profitability mediation test. The test in question employs the appropriate side test, df (n-2), and a significance threshold of 5%.

4. Result and Discussion

4.1 Descriptive Statistics

In this work, descriptive statistical analysis was used to describe the distribution of 190 observations. The minimum, maximum, average, and standard deviation values for the debt-to-equity ratio (DER), price-to-book ratio (PBV), and return on equity are included in the distribution of the data (ROE). Here is the slide show:

Table 3. Statistik Variabel Struktur Modal

	N	Minimum	Maximum	Mean	Std. Deviation
DER	190	.02	2.59	.7087	.55493
ROE	190	-15.22	52.43	9.25	10.626
PBV	190	.09	11.65	1.500	1.557

Source: data processed.

The smallest DER value of the 190 observational data observed is 0.02 and the maximum is 2.59, according to Table 3. The mean and standard deviation are currently 0.555 and 0.709, respectively. Even so, the standard deviation is still less than the average. The minimum and maximum ROE values are -15.22 and 52.43, respectively. Meanwhile, 0.709.25 and 10.626 are the mean and standard deviation, respectively. The mean value is substantially lower than the standard deviation. PBV ranges from a minimum of 0.09 to a maximum of 11.65. The mean and standard deviation are, respectively, 1,500 and 1,557. The value of the relative standard deviation is equal to the mean value.

4.2 Classic Assumption Test.
Normality Test
The purpose of the normality test is to determine whether the residual or confounding variables in the regression model have a normal distribution. The Kolmogorov-Smirnov test is used in the normalcy test, and the outcomes are as follows:

Table 4. Normality Test Result 1

		Unstandardized Residual
N		190
Normal Parameters[a,b]	Mean	0E-7
	Std. Deviation	1.53464364
Most Extreme Differences	Absolute	.187
	Positive	.187
	Negative	-.156
Kolmogorov-Smirnov Z		2.577
Asymp. Sig. (2-tailed)		.000

The regression model is not regularly distributed, as indicated by Table 5's significance value for the Kolmogorov-Smirnov test, which is 0.000, significant threshold = 5%. According to [33], the existence of extreme data (outliers) is the reason of abnormally distributed data, hence it is advised to delete the superfluous data in order to fix the issue. A box plot test can be used as one method of locating the superfluous data. 22 observational data were identified as outliers based on the test, including 6 data on the capital structure variable (DER), 3 data on the profitability variable (ROE), and 13 data on the firm value variable (PBV). The remaining 168 observation data from the prior data were then dropped against these data, making 190 observation data in total. The Kolmogorov-Smirnov test was then repeated using the smaller number of data rows. The outcomes are displayed as follows:

Table 5. Normality Test Result 2

		Unstandardized Residual
N		168
Normal Parameters[a,b]	Mean	0E-7
	Std. Deviation	.86926851
Most Extreme Differences	Absolute	.123
	Positive	.123

	Negative	-.097
Kolmogorov-Smirnov Z		1.588
Asymp. Sig. (2-tailed)		.013

After data reduction, the results of the normality test revealed that the significant value of the Kolmogorov-Smirnov test was 0.013. The data are still thought to not be normally distributed because this result is still below the 0.05 significance level. It is important to convert the data into a natural logarithm function on variables that are meant to still have values that are not normally distributed in order to get around this condition. A natural logarithm function was created from the input data. Thus, LnDER, LnPBV, and Ln ROE are created for each observed variable. These are the outcomes of the regression model's normality test following data transformation.

Table 6. Normality Test Result 3

		Unstandardized Residual
N		168
Normal Parameters[a,b]	Mean	0E-7
	Std. Deviation	.75285524
Most Extreme Differences	Absolute	.059
	Positive	.033
	Negative	-.059
Kolmogorov-Smirnov Z		.762
Asymp. Sig. (2-tailed)		.608

With a significance value of 0.608 > 0.05, the Kolmogorov-Smirnov test results demonstrated that the data on the regression model's residuals were regularly distributed. The residual regression model is often distributed as a result.

4.3 Multikolinierity Test

The tolerance and variance inflation factor (VIF) values for each independent variable are displayed in Table 7. Both tolerance levels for the LnDER and LnROE variables are 0.998, and the VIF is 1.002. There is no association between the two independent variables, as indicated by tolerance values of 0.998 > 0.1 and VIF 1.002 10. Consequently, there is no multicollinearity in the regression model.

Table 7. Multikoleniarity Test Result

Model		Collinearity Statistics	
		Tolerance	VIF
1	(Constant)		
	LnROE	.998	1.002
	LNDER	.998	1.002

a. Dependent Variable: LNPBV

4.4 Heterokedastisitas Test

The results of the Glesjer test are shown in Table 8, where the LnDER significance value is 0.090. LnROE's significance value is 0.498, meanwhile. There is a significance level > 0.05 for both variables. Thus, it may be said that there are no signs of heteroscedasticity in the final regression model.

Table 8. HeteroskedastisitasTest Result

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.588	.053		11.004	.000
	LnROE	-.002	.004	-.052	-.679	.498
	LnDER	-.062	.036	-.131	-1.705	.090

a. Dependent Variable: ABSRES

4.5 Autocorrelation Test

Based on the results of the autocorrelation test, it is known that the dL value is 1.7236, the dU value is 1.7718, and the 4-dU value is 2, 2282. The dW value is 2.144 with the predictor (k) = 2, and the number of observation data is 168 (n = 168). If the value of dU dW 4-dU is reached, the regression model does not experience autocorrelation, according to the Durbin-Watson test criterion section (c). In this investigation, the autocorrelation test produced the following results: dU = 1.7718; dW; 2.144; 4-dU; 2.228. These findings show that the regression model has no autocorrelation.

Table. 9 Autocorelation Test Result

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.404[a]	.163	.153	.75740	2.144

5. Discussion

5.1 The Effect of Capital Structure on Firm Value

The study hypothesis test was conducted using the t-test, which involved comparing the t-table value of 1.654 at a significance level of 5% (0.05) with df=168 to the t-count value that was obtained. A t-count value of 5.142 was obtained for the test of Hypothesis 1 with a significance level of 0.000 significant level = 0.05, t count = 5.142 > t table = 1.654, and the positive coefficient value is 0.366. These findings suggest that business value, as measured by price to book value, is positively and significantly influenced by the capital structure, as measured by the debt to equity ratio.

According to various research, including those by [6], [7], [8], and [35], the debt-to-equity ratio (DER) partially has a considerable beneficial effect on the price to book value (PBV). The study's findings suggest that the capital structure, as shown by the debt ratio, can

reveal details about the degree of risk, the rate of return, and the expected revenue for the organization. The company's use of debt is regarded as a positive development as long as it is kept below the optimal level because it can result in greater tax savings than the risk of financial hardship. Based on this, the company's current debt ratio level will be able to draw investors and raise stock prices, which will ultimately result in a higher company value.

5.2 The Effect of Capital Structure on Profitability

The test yields a positive coefficient value of 0.039 and t arithmetic = 0.508 t table = 1.654) with significance levels of 0.612 > significant levels = 0.05. Ho is confirmed by this finding, indicating that the capital structure, as indicated by the debt-to-equity ratio, has a negligible beneficial impact on profitability, as indicated by the return on equity.

The study's findings do not support the theory put forth. The findings also do not support earlier research that was utilized to develop the proposed theory, notably [36], which shown that profitability rises as debt ratio grows. According to this study, a company's capital structure expansion does not necessarily result in a material rise in profitability. As a result, the management of the company's additional efforts to boost profitability by raising the debt ratio do not appear to be successful. When tax savings still outweigh the danger of financial trouble as a result, the debt ratio can be pursued because it is thought to promote higher profitability.

5.3 The Effect of Profitability on Firm Value

A t count of 2.207 > t table = 1.654 and a significance level of 0.029 significant level = 0.05 were obtained from the hypothesis test. As a result, Ho is disproved, proving that return on equity, a metric of profitability, has a positive and large impact on firm value as measured by price to book value.

The study's findings correspond to what was anticipated by the researchers. The findings from earlier studies, including those by [5], [4], [37], [38], and [8], which demonstrate that profitability increases firm value, were also used as a guide in developing the hypothesis in this study. According to the research, a high degree of profitability will entice potential investors to invest in the firm since the management is thought to have a solid track record of managing the business, which is thought to have a positive effect on the welfare of shareholders. The future prospects of a firm are greater when it is profitable, which encourages current and potential investors to boost their share purchases in order to drive up the value of the company.

5.4 Mediation Test

Using the Sobel test parameter, the profitability mediation test on the relationship between capital structure and company value yields a t statistic of 0.038 t table value = 1.654. The p-value is currently 0.969 > significant level = 0.05. Ho is confirmed by the Sobel test results, proving that profitability cannot mediate the link between capital structure and business value.

Table 9. Sobel Test Result

Input:		Test statistic:	Std. Error:	p-value:
a 0.039	Sobel test:	0.03810453	0.16068958	0.96960434
b 0.157	Aroian test:	0.00661076	0.92621752	0.99472542
s_a 0.998	Goodman test:	NaN	NaN	NaN
s_b 0.914	Reset all		Calculate	

This outcome is consistent with [39] findings, which demonstrate that profitability does not act as a mediator between capital structure and business value. The findings of this study suggest that the company's management's inability to control debt is what prevents its policies from considerably increasing the company's profitability. It does not ensure a growth in the company's profitability at the current debt ratio level. Investors are consequently not motivated to adopt large investing strategies to enhance their capital expenditures on company shares.

6. Conclussion

As long as it is kept below the ideal level, the company's use of debt is seen as a positive development because it can lead to higher tax savings than the risk of financial difficulty. Based on this, the business's existing debt-to-equity ratio will be able to attract investors and drive up stock prices, which will ultimately lead to a higher corporate value. Additional efforts by the company's management to increase profitability by increasing the debt ratio don't seem to be working. The debt ratio can be pursued since it is believed to generate improved profitability when tax savings still outweigh the risk of financial difficulties as a result. Since the management is seen to have a strong track record of managing the business, which is thought to have a favorable effect on the welfare of shareholders, a high level of profitability will tempt future investors to invest in the company. When a company is profitable, its future prospects are better, which motivates both present and potential investors to increase their share purchases to increase the company's value. The results of this study point to the management of the company's incapacity to manage debt as the reason why its policies have not significantly increased the company's profitability. At the current debt ratio level, it does not guarantee an increase in the company's profitability. As a result, investors are unmotivated to use sophisticated investment techniques to increase their capital expenditures on stock in a company.

Because the research object is restricted to the Property and Real Estate sub-sector on the Indonesia Stock Exchange, the findings of this study cannot be generalized to all sub-sectors. The number of observed variables is still constrained, no additional proxies have been used, and no control variables have been incorporated into the research model. For improved study outcomes, some of these factors should be taken into account in the future

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