THE EFFECT OF DEBT-TO-ASSET RATIO, STOCK PRICE, AND RETURN OF EQUITY ON FIRM VALUE WITH SIZE AS VARIABLE MODERATION (STUDY ON FOOD AND BEVERAGES COMPANIES 2017-2021)

Linda Ayu Oktoriza[1] and Diana Puspitasari[2]

AFFILIATION:
Dian Nuswantoro University[1][2]

CORRESPONDENCE:
dianapuspitasari718@dinus.ac.id[2]

THIS ARTICLE IS AVAILABLE IN:
http://ejournal.stiepena.ac.id/index.php/fe

Abstract: This research aims to explain the effect of debt-to-asset ratio, stock price, and return of equity on firm value with size as variable moderation. The object study is a company food and beverages sector, that has been registered on the IDX for the 2017-2021 period. This study wearing Multiple Regression Analysis and Moderated Regression Analysis using the SPSS program for processing the data. The results of the study prove that DER, Stock Price, ROE, and Size have an effect on Firm Value. Variables Stock price, ROE, and firm size have a positive effect on firm value. While DER has a negative influence on firm value. Firm size can moderate the DER relationship to Firm Value but cannot moderate the Share Price to Firm Value relationship.

Keywords: DER, Stock Price, ROE, Size, PBV

INTRODUCTION

Firm value is generally related to the level of asset ownership and the potential of the company to attract investors. Firm value is believed to be able to determine the direction and strength of capital for a company's operations in the future. Almost every business entity or company has what is called corporate value. Firm value is generally related to the level of asset ownership and the potential of the company to attract investors. This is believed to be able to determine the direction and strength of capital for a company's operations in the future. Firm value is an indicator of the success managerial to manage his company and optimizing firm value is the main goal of management to give shareholder economics wealth (Jihadi *et al.*, 2021); (Surasmi, Putra, and Yasa, 2022); (Suteja *et al.*, 2023). Having a high stock price will make the company's value also high, and can increase market confidence. Not only on the performance but also on the company's growth in the future. Firm value can be influenced by several factors, related to leverage, profitability, and firm size (Rachmat *et al.*, 2019).

Managers could manage to maximize firm value with external funds called leverage (Zamzamir, Haron, and Othman, 2021). It was explained that if the level of a company's leverage ratio is high, it means that the company will withhold the company's operating profit so that it can be used to pay off the company's debts. Leverage has an impact on the value of the company (Laguir *et al.*, 2018). Leverage can be a proxy for debt ratio, it is a ratio that measures how much the company assets are financed by a creditor (Mukhtasyam, Pagalung, and Arifuddin, 2020).

Stock prices can have an impact on the company's financial performance. Interaction between seller and buyer to form the best price for the stock (Luckieta, Amran, and Alamsyah, 2020). The high stock price indicates that the company can run the company optimally so that it can increase company profits. The stock prices can change up or down in a matter of time so fast linear with profitability (Rusdiyanto *et al.*, 2020). Shareholders get maximum wealth if stock prices rise (Pascareno, 2016).

Profitability can be measured by Return On Equity (Fekadu Agmas, 2020). It is the ratio to find out the amount of return given by the company for every rupiah of capital from the owner. This ratio shows management's success in maximizing the rate of return to shareholders and indicated that performance improvements increase the stock price (Kalash, 2021).

Firm size is one of the variables that can be considered the firm value (Ispriyahadi and Abdulah, 2021). Company size is also considered a reflection of the total assets of the company. Firm size can be explained by the size of a company based on total assets (Pohan, 2020). Size is one of the variables that can determine the value of a company. Company size is also considered a display of the total assets owned by the company.

Literature Review and Hypothesis Development
Trade Off Theory
The most important thing is that the higher the debt, the higher the possibility of a company going bankrupt. Where the high debt will have an impact on the higher interest that must be paid so the possibility of not paying the interest is also getting bigger. In this theory, the value of companies with debt will be higher by increasing debt. However, the value starts to fall at a certain level, or in other words, the company will have debt up to a certain debt level, at that level the company's debt will be at an optimal level. This theory explains that companies tend to use external funding or debt to meet the adequacy of their company's operational funding. Companies that do not use debt in their capital will pay more taxes than companies that use debt (Wiagustini *et al.*, 2017).

Signaling Theory
Signaling theory is the development of a model where the use of debt is used as a signal given by managers to the market. Debt is to serve as a more credible signal. Companies that dare to increase their debt can be recognized as companies that believe in the company's prospects. Managers hope that investors can catch signals indicating that the company has good prospects, so that debt becomes a signal for future performance (Ispriyahadi and Abdulah, 2021).

Debt to Equity Ratio (DER) to Firm Value (PBV)
Companies do not always have sufficient internal funds to meet operational needs and budgets so alternative external funding through debt is the most frequently used by companies. The higher the DER, the greater the company's dependence on external parties and the greater the debt burden and interest costs that must be paid by the company. With large interest costs, the profitability decreases, so the rights of the shareholders also decrease. The Hypothesis can be formulated as follows:

H₁: DER has a negative effect on firm value (PBV)

Stock Price (SP) to Firm Value (PBV)
The stock price is an indicator that affects the value of the company. If the stock price is high, the value of the company will also be higher. High stock prices reflect that the company's performance is in good condition, and creates good corporate value as well so that it can affect investors' interest in investing in the company. The hypothesis can be formulated as follows:

H₂: DER has a positive effect on firm value (PBV)

Return on Equity (ROE) to Firm Value (PBV)
The higher the ROE, the company will experience an increase in profits. High profits cause the company's share price to rise. An increase in the company's stock price can increase the value of the company. The hypothesis can be formulated as follows:

H₃: ROE has a positive effect on firm value (PBV)

Firm Size Moderates the Relationship between Debt Equity Ratio (DER) and Firm Value (PBV).

Large companies find it easier to get external funding with debt because creditors see that large companies have sufficient assets as debt guarantees. The hypothesis can be formulated as follows:

H₄: Firm size moderates the DER relationship to firm value (PBV)

Firm Size Moderates the Relationship between Stock Price (SP) and Firm Value (PBV)

Large companies have good and high stock prices. Large companies have good and high stock prices. The higher the stock price, the higher the profit for shareholders because with increased demand for shares, the value of the company also increases. So that it can affect the increase in company value. The hypothesis can be formulated as follows:

H₅: Firm size moderates the Stock Price relationship to firm value (PBV)

Firm Size Moderates the Relationship between Return on Equity (ROE) and Firm Value (PBV).

The larger the size of the company, the easier it is for the company to enter the capital market and obtain high investment from investors, which can affect the rate of return that the company will receive. The increase in investment results in an increase in the value of the company. The hypothesis can be formulated as follows :

H₆: Firm size moderates ROE relationship to firm value (PBV)

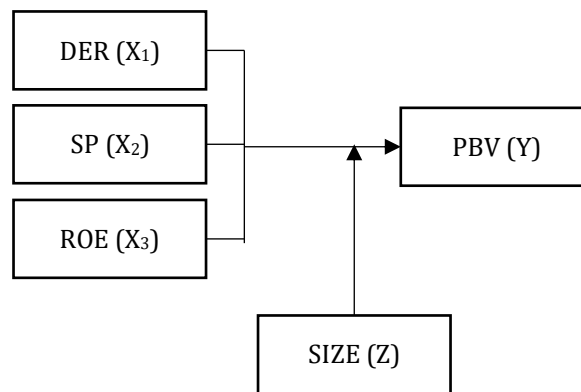Based on the description above, the theoretical framework can be arranged as follows :

Figure 1. Theoretical Framework

Research Method
Dependent Variable
Firm Value (Y)

Firm value is an indicator of the success managerial to manage his company. Firm value can be proxy with Price Book to Value (PBV), which is a ratio of the market value of a share, is compare the market price per share to the book value per share (Jihadi *et al.*, 2021). Measurement of this ratio is :

$$PBV = \frac{Market\ price\ per\ share}{Book\ Value}$$

Independent Variable
Leverage (X₁)

Maximize firm value with external funding called leverage (Zamzamir, Haron, and Othman, 2021). Leverage can be proxy with Debt to Equity Ratio (DER), which is a measure to show how many companies are financed (Sukma, Nurtina and MH Nainggolan, 2022). Measurement of this ratio is :

$$DER = \frac{Total\ liabilities}{Total\ Equity}$$

Stock Price (X₂)

Stock Price is about the price of a stock. Interaction between seller and buyer to form the best price for a stock (Luckieta, Amran, and Alamsyah, 2020). Shareholders get maximum wealth if stock prices rise (Pascareno, 2016). Measurement of this ratio is :

$$SP = \text{Ln } Closing\ Price$$

Profitability (X₃)

Profitability can be measured by Return On Equity (Fekadu Agmas, 2020). It is determined as the ratio of earnings after tax to average total equity (Rahman and Howlader, 2022). ROE is the independent variable (X_3) for this research. Measurement of this ratio is :

$$ROE = \frac{EAT}{Total\ Equity}$$

Moderate Variable

Firm Size (Z)

Firm size is one of the variables that can be considered the firm value (Ispriyahadi and Abdulah, 2021). It takes the natural logarithm of the book value of total assets (Rahman and Howlader, 2022). Firm Size is a moderate variable (Z) for this research. Measurement of this ratio is :

$$SIZE = \text{Ln } Total\ Assets$$

Population and Sample

The population in this study is 20 Food and Beverages that have been registered on the IDX for the 2017-2021 period. By using the purposive sampling method obtained from the website official IDX. Criteria samples are companies that provide complete financial reports according to the required variables. So obtained 20 companies that match the criteria.

Findings And Discussion

Table 1. Multiple Regression Analysis

		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig
1	(Constant)	-1.671	.945		-1.791	.078
	DER	-.014	.002	-.612	-6.347	.000
	STOCKPRICE	.000	.003	-.009	-.107	.915
	ROE	.201	.025	.803	8.312	.000
	Ln_SIZE	.455	.135	.298	3.377	.001

Coefficients[a]

a. Dependent Variable: PBV

Based on Table 1. explained that :
1) Constant (score absolute Y) as big -1.671. If the variable is independent and permanent or nothing is changed so firm value is worth -1.671
2) DER regression coefficient has a value of -0.014. If the other independent variables are fixed and the DER increase of 1 unit means that the value of the firm will decrease as much as 0.014
3) STOCKPRICE regression coefficient is 0.000. If the other independent variables are fixed and DER finds an increase of 1 unit the value of the firm will find an of as much as 0.000
4) The regression coefficient ROE is 0.201 which means that if the other independent variables are fixed and the ROE finds an increase of 1 unit means the firm value will find an increase of as much 0.201
5) The regression coefficient of Size is 0.455 if the other independent variables are constant and Size gets an increase of 1 unit, meaning the firm value will get increase as much as 0.455

Table 2. Moderation Regression Analysis 1

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig
1	(Constant)	-.944	1.397		-.676	.502
	DER	-.049	.026	-2,429	-1,899	062
	Ln_SIZE	.497	.199	.325	2,492	.015
	MODERATION1	.005	003	2,192	1,70477	093

a. Dependent Variables: PBV

Based on Table 2. explained that Moderation regression coefficient 1 has a value of 0.005 if the other independent variables are fixed and Moderation 1 gets an increase of 1 unit, meaning the firm value will get increase as much as 0.005

Table 3. Moderation Regression Analysis 2

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig
1	(Constant)	-.135	2.163		-.066	.948
	DER	-.005	.021	-.135	-.146	.884
	Ln_SIZE	.381	.219	.257	1,313	.194
	MODERATION2	-.001	.003	-.128	-.153	.812

a. Dependent Variables: PBV

Based on Table 3. explained that Moderation regression coefficient 2 has a value of -0.001 means if the other independent variables are fixed and Moderation 2 gets an increase of 1 unit, meaning the firm value will get decline as much as 0.001

Table 4. Moderation Regression Analysis 3

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig
1	(Constant)	1.174	1.229		.956	..343
	DER	-.156	.195	-.602	-.800	.427
	Ln_SIZE	-.023	.177	-.015	-.129	.898
	MODERATION3	.035	.027	1,219	1,583	.118

a. Dependent Variables: PBV

Based on table 4 explained that Moderation regression coefficient 3 has a value of 0.035, meaning that if the other independent variables are fixed and Moderation 3 finds an increase of 1 unit, meaning that the firm value also increases increase as much as 0.035.

Table 5. Coefficient Determination DER, Stock Price, ROE, SIZE

Summary models

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.782[a]	.612	.674	1.04899

a. Predictors: (Constant), Ln_Size, DER, STOCKPRICE, ROE

Based on Table 5., the determination is shown in *Adjusted R Square* worth 0.674 So it can be interpreted that all the independent variables consisting of DER, ROA, and stock prices can explain the company value of 67.4%

Table 6. Moderation Coefficient Determination 1

		Summary models		
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.383a	.146	.393	1.54402

a. Predictors: (Constant), MODERATION1, Ln_SIZE, DER

Based on Table 6 explained the moderation Determination Coefficient of 1 is shown in *Adjusted R Square* worth 0.393. This means that the variables DER, SIZE, and Moderation 1 can explain firm value as 39.3

Table 7. Moderation Coefficient Determination 2

		Summary models		
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.359a	.129	.169	1.55956

a. Predictors: (Constant), MODERATION2, Ln_SIZE, STOCKPRICE

Based on Table 7 explained that Moderation Coefficient Determination 2 showed an *adjusted R Square* with a score of 0.169. So it can be interpreted that the variables STOCKPRICE, SIZE, and Moderation 2 can explain Firm Value as 16.9 %.

Table 8. Moderation Coefficient Determination 3

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.623a	.389	.433	1.30680

a. Predictors: (Constant), MODERATION3, Ln_SIZE, ROE

Based on Table 8 explained the moderation Determination Coefficient of 3 is shown in *Adjusted R Square* worth 0.433. Meaning variable ROE, SIZE, and Moderation 3 are capable explain Company Values as big 43.3 %.

Table 9. Test Q

		Coefficients a				
		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig
1	(Constant)	-1.692	.945		-1.791	.078
	DER	-.021	.002	-.612	-6.347	.000
	STOCK PRICE	.000	.003	-.009	-.107	. 002
	ROE	.000	.025	.803	8,312	.000
	ln _ SIZE	.455	.135	.298	3,377	.001

a. Dependent Variables: PBV

Based on the T-Test table, the results are intended to see the impact of individual variable independent as well as moderation in the explained variation variable bound. Following explanation regarding with results of Test Q in the study :

1) DER to Firm Value

From the calculation, a significant value is obtained with a value of 0.000 <0.05 and Unstandardized B has a value of -0.021 so the conclusion is that DER has a significant negative effect on the value of the company, meaning the first hypothesis is rejected.

2) Stock Price to Firm Value

From the calculation, it is obtained that the significant value is 0.002 <0.05 and Unstandardized B is worth 0.000 so the conclusion Stock Price has a significant positive impact on a company, which means the second hypothesis is received.

THE EFFECT OF DEBT-TO-ASSET RATIO, STOCK PRICE, AND RETURN OF EQUITY ON FIRM VALUE WITH SIZE AS VARIABLE MODERATION (STUDY ON FOOD AND BEVERAGES COMPANIES 2017-2021)
Linda Ayu Oktoriza and Diana Puspitasari

Page 134

3) ROE to Firm Value

From the calculation, the significant value is 0.000 <0.05 and Unstandardized B is worth 0.000 so in conclusion, ROE has a significant positive impact on the value of the Firm, which means the third hypothesis received.

4) Size to Firm Value

From the calculation, it is obtained that the significant value is 0.001 <0.05 and Unstandardized B has a value of 0.455 so it can be concluded that Size has a significant positive impact value on the firm, which means the fourth hypothesis is received.

Table 10. T-test Moderation 1

		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig
1	(Constant)	-.944	1.397		-.676	.502
	DER	-.049	.026	-2.429	-1.899	.062
	Ln_SIZE	.497	.199	.325	2.492	.015
	MODERATION1	.001	.003	2.192	1.704	.004

a. dependent Variables: PBV

Based on Table 10 explained that a significant value is obtained with a value of 0.004 <0.05 and Unstandardized B has a value of 0.001 so it can be concluded that Size can moderate the effect of DER on the value of the firm, meaning the fifth hypothesis is received

Table 11. T-test Moderation 2

		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig
1	(Constant)	-.144	2.177		-.066	.948
	STOCK PRICE	-.005	.033	-.121	-.135	.876
	Ln_SIZE	.351	.176	.257	1.212	.182
	MODERATION2	-.001	.002	-.127	-.138	.771

a. Dependent Variables: PBV

Based on Table 11 explained the significant value is 0.771 > 0.05 and the Unstandardized B value is -0.001 so the conclusion Size cannot moderate influence Stock Price to Firm Value, meaning the sixth hypothesis is rejected.

Table 12. T-test Moderation 3

		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig
1	(Constant)	1.162	1.213		.742	.132
	ROE	-.156	.195	-.602	-.800	.427
	Ln_SIZE	-.023	.177	-.015	-.129	.898
	MODERATION3	.034	.027	1.219	1.583	.118

a. Dependent Variables: PBV

Based on Table 12 explained the significant value is 0.118 > 0.05 and the Unstandardized B value of 0.034 so in conclusion, the stock price cannot moderate the effect of ROE on Firm Value, which means the seventh hypothesis is rejected.

CONCLUSION

The results of the study prove that DER, Stock Price, ROE, and Size affect Firm Value.

Variables Stock price, ROE, and firm size have a positive effect on firm value. While DER has a negative influence on firm value. Firm size can moderate the DER relationship to Firm Value but cannot moderate the Share Price to Firm Value relationship.

Limitation

This research also has several useful limitations that can be developed by further researchers, the small number of samples and this research acquisition of data is secondary so it is very dependent on reports of company finances listed on the IDX. In this study, stock prices do not consider the economic indicator variables that will affect stock prices such as currency exchange rates, interest rates, and inflation. So that the financial information is still general in nature.

Suggestion.

Based on the results of the research, the researchers provide suggestions for companies and investors should pay more attention to the value of ROE, Stock Price, and Size as if gets higher ROE, Stocks Price, and Firm Size, the Firm Value is also high. The next researcher should use other variables as moderating variables in moderating DER, Stock Price, and ROE to Firm Value. Besides that, for researcher which interested take a theme should increase the number of samples, extend the observation period, add other independent variables such as NPM, ROA, PER, MBV, and EPS, and research other research objects such as sector manufacturing, tourism, transportation, and another sector.

REFERENCES

Fekadu Agmas, W. (2020) 'Impacts of capital structure: profitability of construction companies in Ethiopia', *Journal of Financial Management of Property and Construction*, 25(3), pp. 371–386. Doi: 10.1108/JFMPC-08-2019-0072.

Ispriyahadi, H. and Abdulah, B. (2021) 'Analysis of The Effect of Profitability, Leverage and Firm Size on Firm Value', *Journal of Business, Management, and Accounting*, 3(2), pp. 64–80.

Jihadi, M. *et al.* (2021) 'The Effect of Liquidity, Leverage, and Profitability on Firm Value: Empirical Evidence from Indonesia', *Journal of Asian Finance, Economics, and Business*, 8(3), pp. 423–431. doi: 10.13106/jafeb.2021.vol8.no3.0423.

Kalash, I. (2021) 'The impact of environmental performance on capital structure and firm performance: the case of Turkey, *Society and Business Review*, 16(2), pp. 255–277. Doi: 10.1108/SBR-11-2020-0138.

Laguir, I. *et al.* (2018) 'Reversing the business rationale for environmental commitment in banking: Does financial performance lead to higher environmental performance?', *Management Decision*, 56(2), pp. 358–375. Doi: 10.1108/MD-12-2016-0890.

Luckieta, M., Amran, A. and Alamsyah, D. P. (2020) 'The Fundamental Analysis of Stock Prices', *TEST : Engineering & Management*, 83(September), pp. 28720–28729. Available at: https://www.researchgate.net/publication/344237173.

Mukhtasyam, N. U. Z., Pagalung, G. and Arifuddin (2020) 'Effect of Profitability, Liquidity, and Solvability on Share Prices with Earning Per Share (EPS) As a Moderating Variables', *International Journal of Innovative Science and Research Technology*, 5(8), pp. 1571–1577. Available at: www.ijisrt.com.

Pascareno, B. E. (2016) 'Effect of Financial Performance on Company'S Value Moderated By Dividend Policy (Case Study: Insurance Company and Banking Company That Listed in Indonesia Stock Exchange)', *Jurnal Ekonomi Bisnis*, 21(1), pp. 9–20.

Pohan, S. H. (2020) 'Effect of Firm Size and Debt To Asset Ratio on Earning Per Share With Profitability As a Moderating Variables in Property and Real Estate Companies Listen on the Idx', *Accounting and Business Journal*, 2(1), pp. 76–89.

Rachmat, R. A. H. *et al.* (2019) 'Capital structure, profitability, and firm value: An empirical analysis', *International Journal of Innovation, Creativity and, Change*, 6(6), pp. 182–192.

Rahman, M. M. and Howlader, M. S. (2022) 'The impact of research and development expenditure on firm performance and firm value: evidence from a South Asian emerging economy', *Journal of Applied Accounting Research*, 23(4), pp. 825–845. doi: 10.1108/JAAR-07-2021-0196.

Rusdiyanto *et al.* (2020) 'The effect of earning per share, debt to equity ratio and return on assets on stock prices: Case study Indonesian', *Academy of Entrepreneurship Journal*, 26(2), pp. 1–10.

Sukma, R. P., Nurtina, A. R. and MH Nainggolan, B. (2022) 'Effect of Debt Ratio, Long-Term Debt To Equity, and Firm Size on Profitability', *Journal of Management and Leadership*, 5(1), pp. 27–37. doi: 10.47970/jml.v5i1.302.

Surasmi, I. A., Putra, I. B. U. and Yasa, I. M. J. (2022) 'Moderating Effect of Capital Structure on the Effect of Sales Growth on the Value of Manufacturing Companies Listed on the Indonesia Stock Exchange', *Jurnal Ekonomi & Bisnis JAGADITHA*, 9(1), pp. 1–6. doi: 10.22225/jj.9.1.2022.1-6.

Suteja, J. *et al.* (2023) 'Investment Decision and Firm Value: Moderating Effects of Corporate Social Responsibility and Profitability of Non-Financial Sector Companies on the Indonesia Stock Exchange', *Journal of Risk and Financial Management*, 16(1), p. 40. doi: 10.3390/jrfm16010040.

Wiagustini, N. L. P. *et al.* (2017) 'Indonesia's capital structure: Pecking order theory or trade-off theory', *International Journal of Applied Business and Economic Research*, 15(16), pp. 119–131.

Zamzamir, Z., Haron, R. and Othman, A. H. A. (2021) 'Hedging, managerial ownership, and firm value', *Journal of Asian Business and Economic Studies*, 28(4), pp. 263–280. doi: 10.1108/JABES-08-2020-0101.