Justification Of The Common Effects Model In Panel Data For Explaining Firm Value

Dwi Eko Waluyo[1], Dian Prawita Sari[2]
[1,2] Department of Management, Faculty of Economics and Business, Dian Nuswantoro University, Semarang, Central Java, Indonesia

Abstract

This research aims to analyze combined cross-sectional and time series data on companies listed on the Indonesia Stock Exchange in the food, beverage, and tobacco industry. The observation period is from 2017 to 2021. The observed variables include profitability, dividend policy, and asset growth, which will be examined to justify their impact on firm value. This study compares the results of the analysis, justifying the panel data as a common effect model, and tests for the most appropriate model for the panel data. It was found that the appropriate model is the random effect model. However, the results of the regression analysis for both models yielded similar results. Firm value is affected by profitability and asset growth. Note that panel data analysis results in better and more in-depth insights compared to merely assuming it is a common effect model.

Keywords: data pooled, common effect, firm value.
JEL Classification: G32, C23, G35

Received: March 6,2024 Accepted: March 25,2024
DOI : 10.54204/TAJI/Vol132024003

Introduction

Firm Value is reflected in its stock price on the stock market and indicates the value of the firm's assets. A higher firm value typically signifies sound financial management. Effective financial management can enhance the prosperity of shareholders (Brigham & Houston, 2019). A firm value tends to improve or increase when it is managed well. Effective management can be demonstrated by increasing profits, asset growth, and the amount of dividends distributed to shareholders.

Firm value can be measured by the Price to Book Value (PBV) ratio, which compares the company's stock price to its book value. On average, the PBV of companies in the food, beverage, and tobacco industry listed on the Jakarta Stock Exchange that distribute dividends has tended to decrease when observed from 2017 to 2021. The average PBV has declined from approximately 3.12 to 2.11, with a decrease of more than a quarter each year. As seen in Figure 1, the linear trend slope is negative, declining from left to right. This phenomenon warrants further investigation to determine if the factors that typically influence firm value also exhibit a similar trend.

PBV, as explained by Benjamin Graham in his book is a financial ratio used to assess a company's stock price in relation to its book value per share (Graham, 1973). This ratio is

calculated by dividing the stock price by the book value per share. Graham, a renowned practitioner and known as the father of value investing, initially introduced this concept as a strategy to purchase stocks that were cheaper than their book value. Today, PBV is used as a part of fundamental analysis to assess a company. The actual value of a company typically differs from its book value and market stock price. A higher market stock price doesn't automatically reflect dividend distribution, asset growth, or profit increase. However, investors generally have a higher appreciation for companies that exhibit all three of these indicators.

This study aims to analyze whether three variables reflecting company performance, namely profitability, dividend distribution, and asset growth, have an impact on firm value. The analysis will be conducted on companies listed on the Indonesia Stock Exchange, specifically within the food, beverage, and tobacco industry group, during the period from 2017 to 2021.

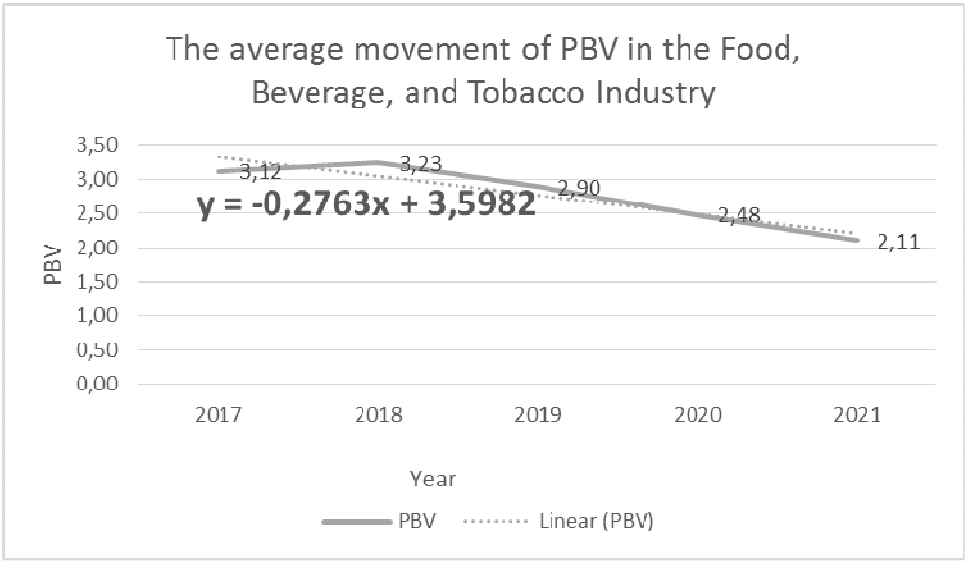

Figure 1. The average movement of PBV in the Food, Beverage, and Tobacco Industry

The emphasis of this research is not only on identifying the variables that influence firm value but also on how the researchers analyze the research data. The data in this study represent a combination of cross-sectional and time-series data, although they are not treated as panel data. Pustika et al. (2022) observes firm values using cross-sectional and time-series data but analyzes them directly in a multivariate fashion using a common effects model or Ordinary Least Squares. conducted a factor analysis influencing firm value using panel data but directly employed regression analysis, with the specific type of regression left unspecified. The study on Firm Value by Nurazi et al. (2020) analyzed panel data but directly employed multiple regression analysis.

The study on dividend policy conducted by Hartono et al. (2021) utilized time-series data from 2013 to 2019 for 19 companies, employing panel data analysis. The research identified that the appropriate model for the panel data was the Fixed Effect Model. Additionally, the study on firm value, proxied using Tobin's Q from 2017 to 2022 for companies listed in the LQ45 index by Appah et al. (2023), analyzed its data using panel data regression. The identified data model for

this study was the Fixed Effect Model. Yadav et al., (2022) utilized a fixed-effect model in analyzing Asia-Pacific market data to explore the relationship between the nexus of firm size, growth, and profitability.

The phenomenon of the varying consideration in panel data analysis, where some treat panel data appropriately while others overlook it by assuming it as a common effect model, becomes the focus of discussion to be elucidated in our research. The research aims to employ a bivariate analysis approach first before comparing it with multivariate analysis. Additionally, it seeks to assess the use of common effects model assumptions to determine their appropriateness in panel data analysis.

Literature Review

Firm Value

The signaling theory emphasizes that the message conveyed by the sender influences the receiver (Przepiorka & Berger, 2017). The perceived value of a company in financial statements is expected to impact investment decisions. The fundamental aspect in determining firm value lies in the intrinsic value, manifested through the company's performance and growth potential. The concept of firm value is encapsulated in a book chapter, one of which is authored by Lonkani (2018) highlighting that awareness of the significance of firm value, particularly among investors, has been recognized since the early 19th century. As perspectives on firm value can vary from different angles, including financial, ownership, and ecological aspects, as well as other stakeholder considerations, the focus of this research is solely on the financial aspect, particularly from the perspective of investor interests.

The foundational concept in the theory of firm value has been developed by renowned financial experts such as Benjamin Graham (Graham, 1973). Graham emphasized the importance of measuring stock value using the PBV ratio and how a substantial difference between the market value and the book value of a company could be an indication of attractive investment opportunities. However, Graham also acknowledged that finding companies that meet these criteria is not an easy task and cannot be easily accomplished by amateur investors. Understanding the value of a company becomes crucial, not only by knowing its magnitude but also by recognizing the fundamental factors known to influence the intrinsic value of the company. Intrinsic value, as stated by Brigham & Houston (2019), can be estimated through dividends, sales performance, and incurred costs, expressed as the profitability of the company, as well as the amount of free funds represented by the growth of the company's assets.

The conceptual framework guiding this research utilizes a simple model where firm value, as a dependent variable, is examined to determine whether it is affected by three independent variables: profitability, dividend policy, and asset growth. This conceptual framework is illustrated in Figure 2. There are three hypotheses that will be tested in the example model we are analyzing. The first hypothesis posits that Profitability has an impact on Firm Value (Tui et al., 2017) (Jihadi et al., 2021). The second hypothesis suggests that Dividend Policy influences Firm Value (Rehman, 2016, Nwamaka & Ezeabasili, 2017, Dang et al., 2020). Lastly, the third

hypothesis proposes that Asset Growth affects Firm Value (Moghadas et al., 2013,Herciu & Serban, 2018).

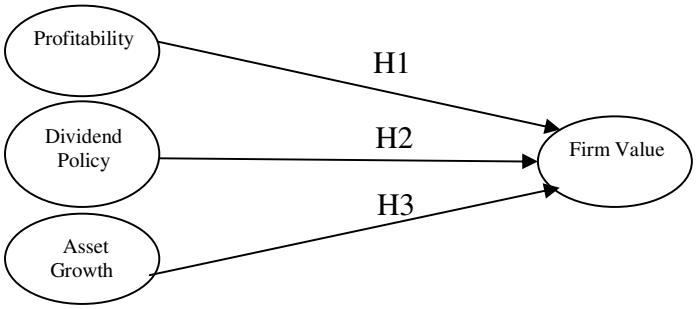

Figure 2. Conceptual Framework

Profitability

Profitability is the net result of a company's activities as a consequence of decisions and policies implemented by the company (Lubis et al., 2017). Suwardika & Mustanda (2017) state that profitability plays a crucial role in all aspects of business as it can demonstrate the effectiveness of the company and portray its performance, indicating that larger returns will be distributed by the company to investors. Ramdhonah et al. (2019) suggests that there is a positive and significant influence of profitability on firm value. This aligns with the findings of Dewi & Suryono (2019) who state that profitability has a positive and significant impact on firm value.

Dividend Policy

The dividend policy is a financial decision made by a company when it generates profits (Martha et al., 2018). Modigliani and Miller are key thinkers on dividend policy, asserting that the dividend-to-stock price ratio is crucial for investment decision-makers and stock market participants (Miller & Modigliani, 1961). Nanda Perwira & Wiksuana (2018) found that the dividend policy has a significantly positive impact on the value of a company. Bayu Ganar et al. (2018) also stated that the dividend policy has a positive and significant impact on the value of the company.

Asset Growth

The growth of a company is a primary objective for many organizations. Financially, a company's growth can be observed through the expansion of its assets, profits, cash flow, and stock prices in the capital market. This description emphasizes that asset growth serves as an indication of a company's overall expansion (Nanda Perwira & Wiksuana, 2018). A well-developing company is characterized by a high growth rate, as growth provides advantages for investors (Ramdhonah et al. 2019). Suwardika & Mustanda (2017) also demonstrated in their research that asset growth positively and significantly influences the firm's value. This implies that information about company growth is positively responded to by investors, as evidenced by an increase in stock prices.

Research Methods

This study focuses on companies listed on the Indonesia Stock Exchange in the food, beverage, and tobacco industry. The observation period spans from 2017 to 2021. The sample consists of companies that consistently distributed dividends throughout the research period, totaling 17 companies. This results in 17 sets of data over the 5-year period, amounting to a total of 85 data sets. The available data constitute a panel dataset, combining time series data from 2017 to 2021 with cross-sectional data from 17 companies. Since the research focuses on the magnitude of the variable values that are cross-sectional in nature and outnumber the time series data, we treat this panel data using a common effects model by merging the cross-sectional and time series dimensions.

The treatment of panel data assumed as a common effects model is commonly employed by researchers. Some studies related to firm value have also been conducted without performing panel data analysis (Pustika et al., 2022; Putra & Lestari, 2016), while others have analyzed using a panel data approach (Badruzaman et al., 2022). This paper will explore the proximity of analysis results using a panel data approach compared to directly assuming adherence to the common effects model. The analysis is conducted descriptively and bivariately. Descriptive analysis is applied partially to three independent variables, namely profitability, dividend policy, and asset growth, as well as the dependent variable, firm value. Bivariate analysis is performed to observe the partial relationships between the three independent variables and the dependent variable.

Multivariate analysis is conducted to illustrate that the outcomes obtained from bivariate analysis align with those derived from multivariate analysis. When a robust correlation exists between the dependent and independent variables, it will be mirrored in the multivariate analysis, producing coherent results. The panel data analysis is conducted by performing the Chow Test, Hausman Test, and Lagrange Multiplier Test (Badruzaman et al., 2022). These three tests will determine the appropriate model recommendation for the research data under analysis. Based on the suggested model, a multivariate analysis is conducted accordingly.

The measurement of the firm value variable utilizes the Price to Book Value (PBV) ratio, which compares stock price to book value. Profitability is measured using Return on Equity (ROE), calculated as the net profit divided by equity. Dividend policy is measured using the Dividend Payout Ratio (DPR), which compares the dividend amount per share to the net profit per ordinary share. Asset growth is measured by dividing the difference in current-year assets and previous-year assets by the previous-year assets.

Result

Descriptive Analysis

The available data consists of 85 data sets, spanning 5 years of observations from 17 companies. Upon examination through the histogram data distribution, it is evident that the data appears scattered randomly. The analysis of the normal distribution indicates that none of them follows a normal distribution. To address this, the researcher trimmed the data within a range considered too extreme or as outliers, resulting in the identification of 74 new data sets. The remaining data

provides results from the descriptive analysis as seen in Table 1. One variable, profitability, is observed to follow a normal distribution.The results of the Kolmogorov-Smirnov test show a significance value greater than 0.05, specifically 0.086, indicating that the profitability variable is normally distributed (Table 2). There is consistency observed in the profitability variable in Table 1, where the small coefficient of variation indicates that the data is clustered around the mean. This is confirmed by the normal distribution in Table 2. Additionally, it's worth noting that the normality test on the residuals of the regression analysis also indicates a normal distribution.

Table 1. Descriptive Analysis

Variables	N	Minimum	Maximum	Average	Std. Deviation	Coef. of Var
Firm Value	74	,36	5,79	2,07	1,25	0,60
Profitability	74	1,14	30,78	13,87	7,07	0,51
Dividend Policy	74	-16,06	167,61	9,50	22,62	2,38
Asset Growth	74	0,09	2,52	,50	,41	0,83

Table 2. Normal Distribution

	Kolmogorov-Smirnov		
Variables	Statistic	df	Sig.
Firm Value	,145	74	,001
Profitability	,096	74	,086
Dividend Policy	,275	74	,000
Asset Growth	,191	74	,000

Bivariate Analysis

The bivariate analysis conducted involves correlation analysis, using Pearson Correlation for variables related to profitability and Non-Parametric Spearman's Rho Correlation for others. The analysis results are presented in Table 3. It is evident from the table that the relationship between firm value and dividend policy is not significant, only proving the relationship between firm value, profitability, and asset growth. Each provides a positive correlation value of 0.590 and 0.400, respectively. Profitability exhibits a stronger correlation with firm value compared to asset growth.

Table 3. Correlation Analysis

Variables		Firm Value
Profitability	Pearson Correlation	,590
	Sig. (2-tailed)	,000
Dividend Policy	Spearman's Rho Correlation	,030
	Sig. (2-tailed)	,797
Asset Growth	Spearman's Rho Correlation	,400
	Sig. (2-tailed)	,000

Multivariate Analysis

After undergoing a series of classic assumption tests, (normality tests, heteroscedasticity tests and multicollinearity tests), we will demonstrate that the results of the multiple regression analysis, as a multivariate analysis, align with the bivariate test. The results of the multiple linear regression analysis are presented in Tables 4 and 5.

Table 4. Regression Model Analysis

	Sum of Squares	df	Mean Square	F	Sig.
Regression	51,711	3	17,237	19,606	0,000
Residual	61,540	70	0,879		
Total	113,252	73			
R Square = 0,457		Adjusted R Square = 0,433			
a. Dependent Variable: Firm Value					
b. Predictors: (Constant), Asset Growth, Profitability, Dividend Policy					

Table 5. Partial Effect Analysis on Firm Value

Variables	Standardized Coefficients Beta	t	Sig.
(Constant)		0,839	0,244
Profitability	0,526	5,812	0,000
Dividend Policy	0,095	1,046	0,133
Asset Growth	0,339	3,724	0,000

The simultaneous test results on the multiple linear regression model for firm value influenced by asset growth, dividend policy, and asset growth indicate a well-fitting model with a significance level of 0.000, which is smaller than 0.05. Note the results of the multiple linear regression analysis above, indicating that only two independent variables influence the dependent variable. This result is consistent with the earlier correlation test. Also, observe that the influence of the profitability variable has a larger coefficient compared to the coefficient of the asset growth variable. This aligns with the magnitude of the correlation coefficients of both variables with firm value.

Panel Data Analysis

Table 6 provides a summary of the panel data model test results using the Chow Test, Hausman Test, and Lagrange Multiplier Test. It is evident that the results lead to the conclusion that the appropriate model is the Random Effects Model.

The multivariate analysis method used is Error-Corrected Generalized Least Squares (EGLS) panel method. The regression analysis in Table 7 yields different results compared to the Ordinary Least Squares (OLS) method, with the impact of asset growth being greater than the impact of profitability. This result automatically differs from the bivariate analysis, which is

actually also conducted using the OLS method. Nevertheless, the identification of variables influencing the Firm Value variable yields consistent results for Profitability and Asset Growth variables.

Table 6. Data Panel Analysis

Analysis	Test	Statisitic Value	Probability	Conclusion
Chow	Cross-section Chi-square	161.020	0.000	Fixed Effect Model
Hausman	Chi-Squares Statistic	2.737	0.434	Random Effect Model
Lagrange Multiplier, Breusch-Pagan	Both Cross Sectional and Time Series Chi-Squares	106.281	0.000	Random Effect Model

Table 7. Regression Analysis of Firm Value with Random Effect Model

Variabel	Standardized Coefficients Beta	t	Sig.
(Constant)		1,174	0,244
Profitability	0,169	6,687	0,000
Dividend Policy	-0,007	-1,518	0,299
Asset Growth	0,941	2,914	0,000
R Square = 0,414		Adjusted R Square = 0,372	
F-statistic = 10,585		Sig. (F-statistic) = **0,000**	

Discussion

The average Firm Value is 2.07 with a standard deviation of 1.25, indicating a fairly concentrated distribution around the mean. The standard deviation is less than 0.96 times the mean, and the distribution is clustered below the normal curve. This suggests that the stock performance of firms in the food, beverage, and tobacco industry in Indonesia is relatively even. However, some firms have less favorable performance, even lower than their book value, such as the issuer with the code BUDI. PT Budi Starch & Sweetener Tbk is a firm engaged in the manufacture of chemicals and food products, including derivatives produced from cassava, sweet potatoes, palm, copra, and other agricultural products, and other industries, especially the plastic industry.

The firm with the highest firm value is HMSP, with stock prices more than 5 times its book value. PT Hanjaya Mandala Sampoerna Tbk operates in the manufacturing and trading of cigarettes and investments in other companies. The profitability of firms in the food, beverage, and tobacco industries is relatively good and uniform, with profits ranging around 13.87 times their capital. HMSP has the highest profitability among these firms. BUDI remains at the lowest position despite providing a profit performance four times its capital. Referring to the

consistency of maximum and minimum data for firm value and profitability, it becomes highly relevant that there is a positive relationship between the movement of profitability and firm value. Using the analysis of two variables between the dependent variable and the independent variable as listed in Table 3, there are two pairs that show a significant correlation: the relationship between firm value and profitability and asset growth. The dominance of profitability affecting firm value is also evident from the magnitude of the coefficient of the impact of profitability on firm value in the formed regression model. The impact of profitability is 0.526 compared to the impact of asset growth, which is only 0.339.

Many researchers have found a positive relationship between profitability and firm value, such as Aladwan et al. (2023), Ramdhonah et al. (2019) dan Husna & Satria (2019). Aladwan observed this in the energy industry in Jordan, Ramdhonah in the mining sector in Indonesia, and Husna found the relationship in the manufacturing sector in Indonesia. The phenomenon of profitability affecting firm value applies to various business sectors. Sukma (2021) identified a similar relationship in the telecommunications sector in Indonesia. Support for research findings stating that asset growth influences firm value is asserted by Naelly & Mustafa (2020) and Ramdhonah et al. (2019). Naelly examined the food industry sector from 2015 to 2018. Budi Artha (2023) conducted a journal review and found many other researchers who concluded that asset growth influences firm value. In Vietnam, Dang et al. (2020) found that firm value is affected by asset growth, although at a significance level less than 95% but above 90%. It is noteworthy that the 90% significance level is still considered by researchers abroad. In contrast to the study conducted by Handriani & Robiyanto (2018) dividend policy is actually affected by firm value. This study, on the contrary, indicates that dividend policy does not affect firm value. According to several other researchers, firm value is affected by dividend policy (Nanda Perwira & Wiksuana, 2018) (Bayu Ganar et al., 2018).

A minor note that we need to consider together is that not all correlation measurements use Pearson because of the issue of non-normal distribution between the two variables. Spearman's Rho correlation is used for data that is not normally distributed. Considering the magnitude of the correlation coefficients obtained, the values are not too large, but statistically, there are two meaningful relationships. As known, correlation relationships can be interpreted by squaring the correlation coefficient values into the coefficient of determination. The magnitude of the correlation coefficient is more commonly used as a determinant of the direction of the relationship, whether it is positively correlated or negatively correlated. When squared, two significant relationships each yield a value less than 0.5, namely 0.59^2 = 0.348 and 0.4^2 = 0.16. Individually, the movement of the firm value variable is still more affected by other variables. Profitability only accounts for 34.8%, and 65.2% is still affected by other variables. The effect of asset growth is only 16%, and 84% is still affected by other variables.

The models generated by both analyses, through panel data analysis and direct regression, provide equally significant F Statistic values statistically, with significance levels approaching 100%. The selected variables also provide relatively close determinants in the range of 40%. Referring to the panel data analysis conducted, it shows that the assumption that the data follows the common effect model is not appropriate. The correct model for this research data is the Random Effect Model. The results of the analysis of variables affecting the dependent variable show the same results, but due to the difference in analysis based on OLS and GLS, the

magnitude of the impact turns out to be different. This result reinforces that data analysis in the form of a combination of cross-section and time series should be analyzed as panel data first so that the model selection can be determined correctly. These findings are reinforced by recommendations proposed by several leading researchers in the field of panel data analysis. According to sources such as "Panel Data Analysis" by (Badi H. Baltagi, 2021) and "Econometric Analysis of Cross Section and Panel Data" by (Wooldridge, 2010), the appropriate approach to handling combined cross-sectional and time series data is through panel analysis. This approach allows researchers to address issues arising from time and individual variations in the data. It is emphasized that in the analysis of data with mixed cross-sectional and time-series characteristics, the panel approach should be used to select the most appropriate model. This approach will help minimize bias and uncertainty in the analysis results, producing more consistent and reliable findings. Research on panel data analyzed as panel data can provide a deeper understanding of the relationship between variables and their impact on the dependent variable in a panel analysis context.

Conclusion

The findings of this research indicate that, partially, the identified variables affecting stock value are profitability and asset growth. This relationship is well observed through both bivariate and multivariate analyses. Simultaneously, both variables collectively contribute to around 40% of the firm's value. An important discovery in this study is that the researcher's justification for treating combined cross-sectional and time-series data directly as a common effect model ultimately yields similar results when analyzed as a panel data. This research has a limitation in using a small dataset, which necessitated the correction of data by excluding some extreme values. Utilizing a larger dataset could reduce the risk of non-normal data. Nevertheless, the objective of demonstrating that OLS regression analysis without prior panel data analysis can be shown in this study has been achieved. The suggestion from this research is to continue conducting panel data analysis for datasets that are a combination of cross-sectional and time series. Panel data analysis provides better and more in-depth insights compared to merely assuming it as a common effect model, as it incorporates fixed effects that account for individual-specific characteristics.

Acknowledgment

Thank to LPPM Dian Nuswantoro University for the supporting this research in 2023. Thanks to all of friends in Management Departement, Faculty of Bussines and Economic, Universitas Dian Nuswantoro for supporting this research. High appreciation is expressed for the assistance in data collection and processing to Akhmad Khoirul Anam and Kharisma Wahyu Widia Putri. With your help, the comparison of the two regression analyses could be realized.

References

Aladwan, M., Alsinglawi, O., Alhawtmeh, O. M., & Almaharmeh, M. (2023). Corporate Financial Performance and the Intervening Role of Energy Operating Costs: The Case of Jordanian Electricity Sector. *International Journal of Energy Economics and Policy* |, *13*, 2023. https://doi.org/10.32479/ijeep.14591

Appah, T. R., Yuniarti, S., Sisharini, N., Sunarjo, S., & Yahya, N. (2023). Does Profitability Matter in the Relationship between Intellectual Capital and Firm Value? *Media Ekonomi Dan Manajemen*, *38*(1). https://doi.org/10.56444/mem.v38i1.3255

Badi H. Baltagi. (2021). *Econometric Analysis of Panel Data* (6th ed.). Springer Cham.

Badruzaman, J., Fadilah, A. R., & Abdurrahman, F. (2022). Determining the Effect of Return on Equity (ROE) on Price Earnings Ratio (PER) and Price to Book Value (PBV) in LQ45 companies, Indonesia. *WSEAS Transactions on Business and Economics*, *19*, 1564–1575. https://doi.org/10.37394/23207.2022.19.141

Bayu Ganar, Y., Sekuritas, J., MANAJEMEN UNPAM JLSurya Kencana No, P., & Tangerang Selatan -Banten, P. (2018). Pengaruh Kebijakan Dividen Dan Profitabilitas Terhadap Nilai Perusahaan Pada Perusahaan Yang Terdaftar Di Bursa Efek Indonesia Periode 2013-2017 Articles Information Abstract. *Jurnal Sekuritas*, *2*(1).

Brigham, E. F., & Houston, J. F. (2019). Fundamentals of Financial Management. In *Cencage Learning* (15th ed.). Cengage Learning. https://doi.org/10.2307/2327254

Budi Artha, I. W. (2023). Determination of Sales Growth Factors and Growth of Total Assets to Price to Book Value. *Journal of Accounting and Finance Management*, *4*(1). https://doi.org/10.38035/jafm.v4i1.187

Dang, H. N., Nguyen, T. T. C., & Tran, D. M. (2020). The impact of earnings quality on firm value: The case of Vietnam. *Journal of Asian Finance, Economics and Business*, *7*(3). https://doi.org/10.13106/jafeb.2020.vol7.no3.63

Dewi, D. S., & Suryono, B. (2019). Pengaruh kebijakan dividen, kebijakan hutang, dan profitabilitas terhadap nilai perusahaan. *Jurnal Ilmu Dan Riset Akuntansi*, *8*(1).

Graham, B. (1973). *THE INTELLIGENT INVESTOR* (Fourth Rev).

Handriani, E., & Robiyanto, R. (2018). Corporate Finance and Firm Value in The Indonesian Manufacturing Companies. *International Research Journal of Business Studies |*, *02*. https://doi.org/10.21632/irjbs

Hartono, P. G., Sari, W. R., Tinungki, G. M., Jakaria, J., & Hartono, A. B. (2021). The Determinants of Dividend Policy: An Empirical Study of Inconsistent Distribution of Dividends Using Balanced Panel Data Analysis. *Media Ekonomi Dan Manajemen*, *36*(2). https://doi.org/10.24856/mem.v36i2.2023

Herciu, M., & Serban, R. A. (2018). Measuring firm performance: Testing a proposed model. *Studies in Business and Economics*, *13*(2). https://doi.org/10.2478/sbe-2018-0023

Husna, A., & Satria, I. (2019). EFFECTS OF RETURN ON ASSET, DEBT TO ASSET RATIO, CURRENT RATIO, FIRM SIZE, AND DIVIDEND PAYOUT RATIO ON FIRM VALUE. *International Journal of Economics and Financial Issues*, *9*(5). https://doi.org/10.32479/ijefi.8595

Jihadi, M., Vilantika, E., Hashemi, S. M., Arifin, Z., Bachtiar, Y., & Sholichah, F. (2021). The Effect of Liquidity, Leverage, and Profitability on Firm Value: Empirical Evidence from Indonesia. *Journal of Asian Finance, Economics and Business*, *8*(3). https://doi.org/10.13106/jafeb.2021.vol8.no3.0423

Lonkani, R. (2018). Firm Value. In P. S. Hoffmann (Ed.), *Firm Value - Theory and Empirical Evidence*. IntechOpen. https://doi.org/10.5772/intechopen.77342

Lubis, I. L., Sinaga, B. M., & Sasongko, H. (2017). *Pengaruh profitabilitas, sruktur modal, dan likuiditas terhadap nilai perusahaan*. *3*(3), 458–465.

Martha, L., Sogiroh, N. U., Magdalena, M., Susanti, F., & Sekolah, Y. S. (2018). PROFITABILITAS DAN KEBIJAKAN DIVIDEN TERHADAP NILAI PERUSAHAAN. *Jurnal Benefita*, *3*(2), 227–238.

Miller, M. H., & Modigliani, F. (1961). Dividend Policy, Growth, and the Valuation of Shares. *The Journal of Business*, *34*(4), 411–433. http://www.jstor.org/stable/2351143

Moghadas, A., Pouraghajan, A. A., & Bazugir, V. (2013). Impact of capital structure on firm value: Evidence from Tehran Stock Exchange. *Management Science Letters*, *3*(6). https://doi.org/10.5267/j.msl.2013.05.040

Naelly., & Mustafa, M. (2020). The Effect of Leverage, Profitability, Liquidity, and Asset Growth on Corporate Value of Consumption Goods Sectors Listed in Idonesia Stock Exchange in 2015-2018. *International Journal of Innovative Science and Research Technology*, *5*(8). https://doi.org/10.38124/ijisrt20aug014

Nanda Perwira, A. A. G. A., & Wiksuana, I. G. B. (2018). PENGARUH PROFITABILITAS DAN PERTUMBUHAN ASET TERHADAP KEBIJAKAN DIVIDEN DAN NILAI PERUSAHAAN. *E-Jurnal Manajemen Universitas Udayana*, *7*(7). https://doi.org/10.24843/ejmunud.2018.v07.i07.p12

Nurazi, R., Zoraya, I., & Wiardi, A. H. (2020). The Influence of Good Corporate Governance and Capital Structure on Firm Value: The Mediation Role of Financial Performance. *Media Ekonomi Dan Manajemen*, *35*(2). https://doi.org/10.24856/mem.v35i2.1554

Nwamaka, O. C., & Ezeabasili, P. (2017). Effect of Dividend Policies on Firm Value: Evidence from quoted firms in Nigeria. *International Journal of Management Excellence*, *8*(2). https://doi.org/10.17722/ijme.v8i2.892

Przepiorka, W., & Berger, J. (2017). Signaling Theory Evolving: Signals and Signs of Trustworthiness in Social Exchange. In B. Jann & W. Przepiorka (Eds.), *Social dilemmas, institutions, and the evolution of cooperation* (pp. 373–392). De Gruyter Oldenbourg. https://doi.org/doi:10.1515/9783110472974-018

Pustika, T. H., Hariyanto, D., & Safitri, H. (2022). The Effect of DER, Firm Size, and CR on PBV with ROE as an Intervening Variable. *Jurnal Manajemen Bisnis*, *13*(2), 289–305. https://doi.org/10.18196/mb.v13i2.13922

Putra, A. A. N. A., & Lestari, P. (2016). PENGARUH KEBIJAKAN DIVIDEN, LIKUIDITAS, PROFITABILITAS DAN UKURAN PERUSAHAAN TERHADAP NILAI PERUSAHAAN. *E-Jurnal Manajemen*, *5*(7). https://ojs.unud.ac.id/index.php/manajemen/article/view/20373

Ramdhonah, Z., Solikin, I., & Sari, M. (2019a). *Pengaruh Struktur Modal , Ukuran Perusahaan , Pertumbuhan Perusahaan , Dan Profitabilitas Terhadap Nilai Perusahaan (Studi Empiris Pada Perusahaan Sektor Pertambangan Yang Terdaftar Di Bursa Efek Indonesia Tahun 2011-2017)*. *7*(1), 67–82. https://doi.org/10.17509/jrak.v7i1.15117

Ramdhonah, Z., Solikin, I., & Sari, M. (2019b). Pengaruh Struktur Modal, Ukuran Perusahaan, Pertumbuhan Perusahaan, Dan Profitabilitas Terhadap Nilai Perusahaan (Studi Empiris Pada Perusahaan Sektor …. *Jurnal Riset Akuntansi Dan …*, *7*(1), 67–82.

Rehman, O. U. (2016). Impact of Capital Structure and Dividend Policy on Firm Value. *Journal of Poverty, Investment and Development*, *21*(0).

Sukma, F. M. (2021). Peran Firm Size, Current Ratio, Debt To Asset Ratio, dan Return On Equity Terhadap Price To Book Value Pada Perusahaan Telekomunikasi Yang Terdaftar di Bursa Efek Indonesia Periode 2014-2020. *Improvement: Jurnal Manajemen Dan Bisnis*, *1*(1). https://doi.org/10.30651/imp.v1i1.9528

Suwardika, I. N. A., & Mustanda, I. K. (2017). PENGARUH LEVERAGE, UKURAN PERUSAHAAN, PERTUMBUHAN PERUSAHAAN, DAN PROFITABILITAS TERHADAP NILAI PERUSAHAAN PADA PERUSAHAAN PROPERTI. *E-Jurnal Manajemen Unud*, *6*(3), 1248–1277.

Tui, S., Nurnajamuddin, M., Sufri, M., & Nirwana, A. (2017). Determinants of Profitability and Firm Value: Evidence from Indonesian Banks. *IRA-International Journal of Management & Social Sciences (ISSN 2455-2267)*, *7*(1). https://doi.org/10.21013/jmss.v7.n1.p10

Wooldridge, J. M. (2010). *Econometric Analysis of Cross Section and Panel Data*.

Yadav, I. S., Pahi, D., & Gangakhedkar, R. (2022). The nexus between firm size, growth and profitability: new panel data evidence from Asia–Pacific markets. *European Journal of Management and Business Economics*, *31*(1). https://doi.org/10.1108/EJMBE-03-2021-0077