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The influence of investment decisions and stock prices on company value with profitability as a moderating variable

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ABSTRACT

This study aims to analyze the effect of investment decisions and stock prices on the company value in the infrastructure sector, moderated by profitability. The study uses multiple linear regression to examine the relationships between variables, with secondary data obtained from the financial statements of infrastructure companies listed on the Indonesia Stock Exchange (IDX) for the period of 2018-2021. The independent variables used in this study are investment decisions, measured by the Price Earnings Ratio (PER), stock price, measured by closing share price, and profitability, measured by Return on Equity (ROE). The dependent variable is company value, measured by Price to Book Value (PBV). The results of the study show that investment decisions and stock prices have a positive and significant effect on company value. However, profitability does not moderate the relationship between investment decisions and stock prices on company value. The implications of this study's findings suggest that infrastructure companies should pay attention to investment decisions and strategies that can influence stock prices, as both have a significant impact on increasing company value. Additionally, although profitability does not moderate the relationship, companies should still maintain profitable performance to ensure the sustainability of healthy operations.

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Introduction

The infrastructure sector plays a strategic role as the backbone of economic development, particularly in developing countries like Indonesia (Husnah et al., 2023; Verico et al., 2024). Adequate infrastructure can accelerate industrialization processes, enhance interregional connectivity, and promote societal welfare. The Indonesian government has designated infrastructure as one of the priorities in its national development plan, given its significant contribution to achieving sustainable economic growth (Arifin et al., 2024; Nawir et al., 2023).

The demand for investment in Indonesia's infrastructure sector continues to rise in line with ambitions to expand transportation, energy, and telecommunication networks. Substantial funding is required to meet these targets, whether through state budget allocations, foreign investments, or public-private partnerships. In this context, investment decisions in the infrastructure sector are critical, as they not only support macroeconomic

growth but also impact the competitiveness of companies involved in the sector (Khyareh & Rostami, 2022; Välilä, 2020).

Effective investment decisions play a vital role in driving the growth of companies in the infrastructure sector, ultimately contributing to increased corporate value (Awan et al., 2022; Suteja et al., 2023). Companies that successfully manage investments are more likely to enhance operational capacity and market competitiveness. Conversely, poor investment decisions can lead to financial risks and erode market confidence in the company.

Fluctuations in the stock prices of companies in the infrastructure sector reflect market sentiment toward their business prospects and risk management (Ofodile et al., 2024). Stock price changes are often influenced by external factors such as global economic conditions, government policies, and shifts in market demand (Siegel, 2021). These fluctuations have a direct impact on corporate value, making them a key concern for investors and management (Sukesti et al., 2021).

Profitability is a crucial financial performance indicator that evaluates a company's ability to generate profits (Almagtome & Abbas, 2020). In this context, profitability can serve as a moderating variable that strengthens or weakens the relationship between investment decisions, stock prices, and corporate value. Therefore, understanding the role of profitability as a moderating factor can provide strategic insights for management decision-making to enhance corporate value in the infrastructure sector.

In recent years, there has been a growing trend in infrastructure investment, both from the government and private sectors. According to Dwijayakarya.com, the Indonesian government, through the National Strategic Projects (PSN), has outlined 14 infrastructure projects, including toll roads, ports, airports, and energy facilities. These initiatives aim to accelerate economic development, enhance interregional connectivity, and support investment growth. Interestingly, the financing for these latest PSN projects does not rely on the state budget (APBN) but instead comes from private investment, as stated by the Coordinating Minister for Economic Affairs (Dwijaya Karya, 2024).

However, stock price volatility of companies in the infrastructure sector poses a significant challenge affecting investor interest. Stock price changes often reflect market sentiment regarding company prospects, global economic risks, and government policies (Tiwari et al., 2022). These fluctuations can create uncertainty for investors, especially those who rely on the infrastructure sector as part of a long-term investment portfolio (Griffith et al., 2020). This phenomenon underscores the importance of effective risk management and communication to maintain corporate value stability in the eyes of the market.

Profitability can be a challenge for the infrastructure sector due to rising operational costs and intense competition. Increasing costs for materials, labor, and project financing can reduce corporate profit margins. Additionally, competition among companies to secure strategic projects often compels them to offer competitive pricing, which can ultimately impact profitability levels. Amid these challenges, the ability of companies to manage operational efficiency and leverage technology becomes a key factor in maintaining competitiveness and business sustainability.

The signaling theory explains that information conveyed by a company to external parties, such as investors, plays a crucial role in influencing the market's perception of the company's value. Investment decisions announced by companies in the infrastructure sector, for instance, can be seen as positive signals indicating long-term growth prospects and business sustainability. Similarly, stock price fluctuations reflect the market's response to this information, which in turn affects the perception of the company's value. In the context of this study, profitability acts as an additional signal that strengthens the relationship between investment decisions and stock prices with company value. High profitability indicates operational efficiency and the company's ability to generate returns from investments, thereby boosting investor confidence in the value of companies in the infrastructure sector (Connelly et al., 2024; Komara et al., 2020).

The infrastructure sector was chosen as the focus of this research due to its vital role in the economy, particularly in developing countries like Indonesia. Quality infrastructure serves as the foundation for economic activities, enhances interregional connectivity, and accelerates industrialization. Moreover, this sector has a broad impact on national economic growth, job creation, and attracting foreign investment. In this context, investment decisions in the infrastructure sector not only affect the sustainability of strategic projects but also determine the performance of companies involved, ultimately influencing their market value in the capital market.

Previous studies by (Agustin & Anwar, 2022; Mumpuni & Indrastuti, 2021; Suardana et al., 2020; Syamsudin et al., 2021) revealed that investment decisions influence firm value. However, conflicting findings were reported

by (Amaliyah & Herwiyanti, 2020; Sari & Gunawan, 2023). Another study by Patiku et al., (2023) found that stock prices affect firm value, while the findings of Novita et al., (2022) suggested otherwise.

Although numerous studies have explored the relationship between investment decisions, stock prices, and firm value, there is a gap in understanding the role of profitability as a moderating variable in this relationship. Most previous research tends to focus on the direct effects of investment decisions or stock prices on firm value without delving deeper into how profitability may influence these dynamics. This study aims to fill that gap by exploring how profitability can strengthen or weaken the relationship between investment decisions, stock prices, and firm value, thereby offering new insights relevant to academics and practitioners in this sector.

The objectives of this study are to identify the effect of investment decisions on firm value in the infrastructure sector, assess the relationship between stock prices and firm value, and analyze the role of profitability as a moderating variable in this relationship. This research is expected to provide both practical and academic benefits, such as offering insights for infrastructure sector managers in making strategic investment decisions, assisting investors in evaluating the attractiveness of company stocks based on profitability levels, and providing input for regulators to better understand the factors influencing firm value in the infrastructure sector. Thus, the findings of this study can support better corporate management, encourage increased investment interest, and aid in the development of policies that support the growth of the infrastructure sector.

Literature Review

Signalling Theory

Signal theory is information that can provide a signal to other parties so that in uncertain conditions other parties are still willing to invest in a company. If the information is a good signal (good news), it can be interpreted that the issuer can be trusted so that positive information can increase investor confidence in the issuer and attract money, while negative information can lead to negative investor assessments and prevent them from investing in the issuer (Jebran & Chen, 2022; Liu & Zhang, 2020). A signal is a company's step that aims to inform investors about management's assessment of the company's financial performance, compliance, or non-compliance. Signal theory suggests a knowledge gap between managers and stakeholders (Huang, 2022). Data, especially company performance data, is very important because of its influence on investor responses and market decisions. Most investors use the latest company information as a basis for predicting future potential.

Investment Decisions

Investment decisions greatly affect company performance. Every organization tries to increase its investment but deviates from investment efficiency resulting in over-investment or under-investment (Munir et al., 2023). The literature identifies several reasons for investment inefficiency, including limited information and asymmetric financing which are the subject of debate in corporate finance. Develop a theoretical model to show that the existence of asymmetric information among fund providers causes the problem of under-investment. Jensen & Meckling (2019) presents the theory of free cash flow and highlights the problem of over-investment due to asymmetric information between managers and shareholders. The value of investment decisions is presented in PER (Price Earning Ratio), where the PER ratio is widely used to compare each issuer in the same industry or issuer to the market as a whole or can also be used to compare current PER with PER in the past. PER is widely used by financial analysts, and is more widely used than the dividend discount model. Of course, all valuation methods aim to achieve the same thing, namely assessing the economic value of a company's shares.

Stock Price

The stock trading mechanism on the IDX uses an open auction system, meaning that the highest price offer will be prioritized to obtain the shares desired by investors and vice versa. The perspective of investors or potential investors on an issuer can be seen from its stock price and this event is in accordance with the theory of supply and demand. The stock price used in this study is the stock price at closing. The ratio of stock price to book value has been proven in several studies (Suteja et al., 2023); (Alghifari et al., 2022). An et al., (2017) found that stocks with a low stock price to book value ratio are significantly superior to average stocks.

Company Value

Company value is the amount1 of the price that prospective buyers are willing to pay if the company is sold. In this study, the analysis of the company's value uses book value or also known as PBV. Book value is the value of shares based on the bookkeeping of the issuer company (Dewi & Vijaya, 2018). Book value can be presented with net assets owned by shareholders per share. Book value per share is total equity divided by the number of shares outstanding. Company value can be assessed using book value per share commonly called PBV (Price Book Value), because the PBV ratio is used to assess the value of the company. A higher PBV score indicates

that the company is using its assets more effectively and efficiently to increase its overall value (Rohmawati & Rachman, 2023).

Profitability

Profitability is a profit obtained by a company related to investment or sales (Tao, Q., Zahid, Z., Mughal, A., & Shahzad, 2022). It also shows the capacity of the issuer's management in generating profits and serves as a measure of the effectiveness of the issuer's management (Mohamad et al., 2019). High profitability indicates a promising future potential for the company. (Handayati et al., 2022; Yondrichs et al., 2021), which is a positive signal for investors to invest their capital. Profitability has a major impact on the level of financial liquidity and financial health. Therefore, when analyzing a company's profitability, investors must also pay attention to the level of financial liquidity. In terms of long-term investment, investors are increasingly analyzing financial health in addition to the level of profitability. The calculation of profitability in this study is ROE (Return on Equity). ROE is used to measure the amount of income obtained from each investment money of common shareholders in the company, to calculate ROE, the amount of common shareholder equity is required at the beginning and end of the closing period.

Company Size

Company size or called firm size in this study is calculated on the total assets of the company. Companies that have a lot of assets use as much resource availability as possible to maximize operating profit, but companies that have small assets also get benefits that are commensurate with resources. Company size is generally described by the amount of balance sheets, sales and market value. The calculation of company size uses the book value of the amount of balance sheets (Gunardi et al., 2020). Because the value of the company's assets is high, it is calculated in millions of rupiah and converted to the natural logarithm.

Capital Borrowing

Capital borrowing or also called leverage1 is the level of the company's ability to use capital that has fixed costs (debt or shares) to achieve company goals. In the financial statements, leverage can be presented in the solvency ratio or also called the debt equity ratio. 'The solvency ratio describes the company's ability to pay its long-term obligations if the company is liquidated. Relationship Between Variables and Hypothesis Development

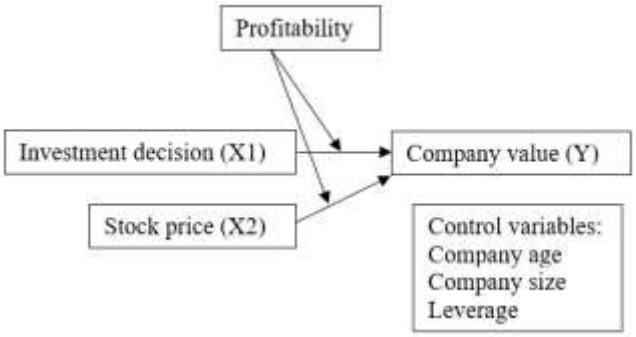

Figure 1. Conceptual framework

Relationship Between Variables

Investment Decisions Can Affect Company Value

Investment decisions play a crucial role in a company's ability to achieve its objectives by guiding investment operations and influencing asset allocation (Tan & Luo, 2021). The decision to invest capital in a company must be assessed and adjusted based on the risk profile and anticipated returns (Liu & Zhang, 2020). By aligning the level of return with risk characteristics that can be mitigated or managed, investment decisions are expected to enhance firm value, thereby benefiting shareholders. This assertion is supported by numerous studies, such as those by (Al Daas et al., 2020; Karaçayır & Afşar, 2020), which found that investment choices significantly impact firm value. Based on this understanding, it can be hypothesized that: H1. Investment decisions have a positive effect on firm value.

Stock Prices Can Affect Firm Value

The perception of investors or potential investors towards a company is often reflected in its stock price (Dang et al., 2021; Malahim et al., 2022). The stock price used in this study is the stock price at closing. Firm value is greatly influenced by the company's equity, debt and total assets, other variables such as leverage and age of the

company do not significantly affect the company's value (Gharaibeh & Qader, 2017). The calculation of the Company's value can be calculated using the Tobins Q formula and the stock price affects the calculation of the company's value. From this explanation, a hypothesis can be made that: H2. Stock Price has a positive effect on company value.

Profitability Can Moderate the Effect of Investment Decisions and Stock Prices on Company Value

Profitability is the profit obtained by a company related to investment or sales (Tao, Q., Zahid, Z., Mughal, A., & Shahzad, 2022). It also shows the capacity of company management in generating profits and serves as a measure of the effectiveness of company management (Mohamad et al., 2019). High profitability indicates a promising future potential for the company. (Handayati et al., 2022; Yondrichs et al., 2021), which is a positive signal for investors to invest their capital. Profitability has a major impact on the level of financial liquidity and financial health. Therefore, when analyzing a company's profitability, investors must also pay attention to the level of financial liquidity. In terms of long-term investment, investors are increasingly analyzing financial health in addition to the level of profitability. Investment decisions, supported by high profitability, strengthen the company's reputation in the eyes of investors, attracting investors in order to increase the company's value (Alghifari et al., 2022). From this explanation, it can be hypothesized that: 1) H3. Profitability moderates' the influence of investment decisions on firm value; 2) H4. Profitability moderates' the influence of stock prices on firm value.

Method

The research employs a quantitative method with a causal or explanatory approach, aiming to test the cause-and-effect relationship between the independent variables (investment decisions and stock prices), the moderating variable (profitability), and the dependent variable (firm value).

Data Collection Technique

The data used in this study consists of secondary data obtained from existing sources that have been previously collected and made available for research purposes. This includes financial reports published by infrastructure companies listed on the Indonesia Stock Exchange (BEI) for the 2018–2021 period. These reports were accessed and summarized from the official BEI website to ensure reliability and authenticity. Additionally, supporting data such as theories and prior research findings were sourced from books, scientific journals, and articles available on platforms like Google Scholar and international journal databases. The data collection process involved manual compilation and cross-verification to ensure accuracy and consistency. Financial data was cross-checked with BEI's official disclosures, and supporting literature was selected based on relevance and credibility, adhering to rigorous academic standards. The collection and verification processes aimed to minimize errors and enhance the validity of the data used for analysis in this study.

Population and Sample

Table 1 <Selection of Research Samples>

No	Criteria	Total
1	Infrastructure issuers listed on the Indonesia Stock Exchange (IDX) for the period 2018 – 2021	52
2	Infrastructure companies that did not publish financial reports consecutively during the period 2018 – 2021	16
3	Infrastructure companies that experienced losses consecutively during the period 2018 – 2021	16
Number of companies used		20
Observation year 2018 - 2021		4
Number of samples		80

This study focuses on a population comprising all infrastructure sector companies listed on the Indonesia Stock Exchange (BEI) for the 2018–2021 period. The selection of the infrastructure sector is based on its strategic role in supporting economic development and its capital-intensive nature, which makes investment decisions and profitability particularly critical. The sample was determined using purposive sampling, which selects companies that meet specific criteria, such as consistently publishing annual financial reports and avoiding consecutive losses during the study period. These criteria aim to ensure data reliability and represent companies with stable operational performance, as justified by prior literature emphasizing the importance of financial stability in evaluating firm value. Out of 52 infrastructure companies identified, 16 were excluded for failing to publish annual reports consistently, and 14 for reporting losses during the study period, resulting in a final sample of 20 companies, yielding a total of 80 observations across the four-year period. While purposive sampling offers

the advantage of focusing on relevant and consistent data, it may introduce selection bias, limiting the generalizability of the findings to the entire sector. However, this approach aligns with the study's objective of analyzing well-performing companies to evaluate the influence of investment decisions, stock prices, and profitability on firm value. Based on the sampling technique using purposive sampling with three criteria, the number of samples is obtained in Table 1. List of companies that passed the sample selection and were used as described in Table 2.

Table 2 <Companies Used>

Code	Issuer Name'
ADHI	Adhi Karya (Persero) Tbk
BALI	Bali Towerindo Sentra Tbk
BUKK	Bukaka Teknik Utama Tbk
CMNP	Citra Marga Nusaphala Persada Tbk
IBST	Inti Bangun Sejahtera Tbk
LINK	Link Net Tbk
META	Nusantara Infrastructure Tbk
NRCA	Nusa Raya Cipta Tbk
PTPP	PP (Persero) Tbk
TBIG	Tower Bersama Infrastructure Tbk
TLKM	Telkom Indonesia (Persero) Tbk
TOWR	Sarana Menara Nusantara Tbk
TOTL	Total Bangun Persada Tbk
WIKA	Wijaya Karya (Persero) Tbk
POWR	Cikarang Listrindo Tbk
PBSA	Paramita Bangun Sarana Tbk
PPRE	PP Presisi Tbk
WEGE	Wijaya Karya Bangunan Gedung Tbk
LCKM	LCK Global Kedaton Tbk
GHON	Gihon Telekomunikasi Indonesia Tbk

Source: Indonesia Stock Exchange

Operationalization of Variables

Operationalization of variables are: 1) Company Value (Y): Price-to-Book Value (PBV). The dependent variable, company value, is measured using the Price-to-Book Value (PBV) formula: PBV = Market Price Per Share / Book Value Per Share. PBV is chosen because it reflects the market's perception of the company's value relative to its book value, a widely used metric to evaluate the financial health and growth potential of companies in the infrastructure sector. PBV offers insights into how effectively a company is utilizing its assets to generate shareholder value, making it suitable for this study; 2) Investment Decision (X1): Price-to-Earnings Ratio (PER). Investment decisions are represented by the Price-to-Earnings Ratio (PER): PER = Market Price Per Share / Earnings Per Share. PER is used because it captures how much investors are willing to pay for each dollar of earnings, reflecting the attractiveness of a company's stock. This measure aligns with the study's focus on the infrastructure sector, where investment decisions play a critical role in assessing future growth and profitability potential; 3) Stock Price (X2): Closing Share Price. Stock price is measured using the company's closing share price. The closing price is chosen as it represents the last traded value of a stock in a given period, reflecting market participants' consensus on the company's worth. It is a key indicator of investor sentiment and market valuation; 4) Profitability (Z): Return on Equity (ROE). Profitability, the moderating variable, is measured using Return on Equity (ROE): ROE = Net Income / Shareholders' Equity. ROE is selected because it demonstrates a company's ability to generate profits from its equity. This metric is particularly relevant for infrastructure companies, where high capital requirements necessitate efficient equity utilization. ROE is commonly used in financial performance analysis to assess a firm's profitability and its impact on firm value; 5) Capital Structure: Debt-to-Equity Ratio (DER). The Debt-to-Equity Ratio (DER) is calculated as: DER = Total Debt / Total Equity. DER is used as a control variable to understand the extent of financial leverage in the company. It reflects the balance between debt and equity financing, which can influence investment decisions and company valuation; 6) Company Size. Company size is measured using the natural logarithm of total assets. This transformation reduces data skewness and provides a normalized scale, making it easier to analyze. Company size is considered a control variable because it impacts economies of scale, market position, and resource availability; 7) Company Age. Company age is calculated as the difference between the year of research and the year of establishment. It is used to assess the maturity of the company, which may influence operational stability, market reputation, and firm value.

The selection of these indicators is based on their relevance to financial performance analysis and their extensive use in prior research. PBV, PER, ROE, and closing share price are standard metrics widely recognized in financial literature and provide a robust framework to evaluate the interrelation between investment decisions, stock prices, profitability, and firm value in the infrastructure sector. These measures allow for comprehensive analysis while maintaining alignment with the study's objectives.

Measurement

Table 3 <Variable Calculation>

Variables	Formula	Reference
Company Value (Y)	$PBV = \frac{Market\ Price\ Per\ Share}{Book\ Value\ Per\ Share}$	(Yanti & Darmayanti, 2019)
Investment Decision (X1)	$PER = \frac{Market\ Price\ Per\ Share}{Earnings\ Per\ Share}$	(Dang et al., 2021; Malahim et al., 2022)
Stock Price (X2)	**Closing Share Price**	(Rohmawati & Rachman, 2023)
Profitability (Z)	$ROE = \frac{Net\ Income}{Shareholders'\ Equity}$	(Alghifari et al., 2022)**;**
Capital Borrowing	$DER = \frac{Total\ Debt}{Total\ Equity}$	(Nadhilah et al., 2022)
Company Size	Total assets from natural logarithm calculation	(Hafsyah & Choiriah, 2023)
Company Age	Year of Research – Year of Establishment	(Charviena & Tjhoa, 2016)

Data Analysis Method

The data analysis method employed in this study is multiple linear regression, which examines the relationship between a dependent variable and two or more independent variables (Osborne & Waters, 2019). This approach includes several stages: descriptive statistical analysis, classical assumption tests, multiple linear regression tests, and hypothesis testing. However, the methodology is expanded to address specific requirements, such as moderation effects and data reliability.

Descriptive Statistical Analysis

Descriptive statistical analysis is utilized to summarize the characteristics of the data. Key measures include minimum, maximum, mean, and standard deviation values, which provide an overview of the distribution and variability of each variable used in the study (P. D. Sugiyono, 2018). This step ensures a clear understanding of the sample data before advancing to deeper analyses.

Classical Assumption Tests

The validity of the regression results depends on meeting classical assumptions, which include: 1) Normality Test: Determines whether the residuals of the variables are normally distributed; 2) Multicollinearity Test: Ensures no significant correlation exists between independent variables, as multicollinearity can distort regression coefficients: 1) Heteroscedasticity Test: Examines whether the residual variance is consistent across observations; 2) Autocorrelation Test: Assesses if residuals from different periods are correlated, which may violate regression assumptions (D. Sugiyono, 2013).

Multiple Linear Regression and Moderation Analysis

Multiple linear regression is applied to evaluate the causal relationships between the independent variables (investment decisions and stock prices) and the dependent variable (firm value). To test the moderation effect of profitability, an interaction term is added to the regression model. For instance, a moderation analysis involves adding a term that multiplies the moderating variable (profitability) with the independent variable to observe changes in the relationship. This technique helps determine whether profitability strengthens or weakens the relationship between investment decisions and firm value.

Hypothesis Testing

To validate the results, several tests are conducted: 1) Kolmogorov-Smirnov Test: Ensures the normality of data distribution; 2) t-Test (Significance Test): Assesses the influence of each independent variable on the dependent variable individually; 3) Coefficient of Determination (R^2): Explains the proportion of variance in the dependent variable explained by the independent variables; 4) Moderation Effect Test: Utilizes interaction terms to measure the strength and significance of the moderating variable's impact.

The study acknowledges potential constraints, such as the relatively small sample size, which might affect the generalizability of the findings. The use of secondary data requires careful validation and reliability checks. These steps include cross-verifying data sources, such as financial reports, and ensuring consistency across periods. Analytical tools SPSS are used to minimize manual errors and enhance the robustness of statistical outputs.

By combining these steps, the study ensures that both the primary hypotheses and moderating effects are thoroughly tested, offering valid and reliable insights into the influence of investment decisions and stock prices on firm value within the infrastructure sector.

Results And Discussion

Descriptive Statistical Analysis Test

The first test result in this study is the descriptive analysis test. Descriptive Statistical Analysis is used to describe the description of the numeric variables of the samples used such as minimum, maximum, average and standard deviation values (Gunawan, 2018). The results of the descriptive statistical analysis test are as follows:

Table 4 <Descriptive Analysis>

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
X1 : PER	80	5,17	230,60	31,4999	41,25583
Y : PBV	80	0,43	8,68	1,8784	1,48582
X2 : Harga Saham	80	114	8300	1577,00	1671,689
Z : ROE	80	0,01	0,37	0,1433	0,09593
DER	80	0,09	6,91	1,5041	1,41050
Size	80	23,53	33,26	29,6411	1,85504
Age	80	0	26	10,10	7,722
Valid N (listwise)	80				

Source: Indonesia Stock Exchange

Table 4 shows a summary of the average, minimum and maximum statistics for the variables calculated from 80 samples of infrastructure issuers. The average PER value is 31.499, the lowest PER value is 5.17 for WEGE shares in 2018 and the highest PER value is 230.60 for ADHI shares in 2020. The stock price in this study is determined from the closing price at the end of the period, namely on December 31, presented in thousands of rupiah, the average stock price in this study is 1,577 rupiah, the lowest stock price is for META shares in 2021 worth 144, and the highest stock price is for IBST shares in 2018, which is worth 8,300 rupiah. The average PBV value is 1.87, the lowest PBV value occurred in PTPP shares in 2021 at 0.43, and the highest PBV value was 8.68 in CNMP shares in 2020. ROE has an average value of 0.1433, the lowest ROE value is 0.01 in IBST shares in 2020 and 2021, and WIKA shares in 2021 and the highest ROE occurred at 0.37 in TOWR shares in 2018. Furthermore, the average DER shows a value of 1.5041, while the lowest DER is 0.09 in LCKM shares in 2020 and 2021, and the highest DER is 6.91 in TBIG shares in 2018. Furthermore, the average company size value (i.e. the natural logarithm of total assets) in the infrastructure sector is 29.6411. The smallest company size is 23.53 in CMNP shares in 2020, and the largest company size is 33.26 in TLKM shares in 2021. Finally, the average company age is 10.10 years, where the oldest company listed on the IDX is 26 years old, namely in BUKK, CMNP and TLKM shares.

Correlation Matrix

The results of the correlation matrix analysis show the relationships among the research variables, namely Company Age (Age), Stock Price (X2), Debt-to-Equity Ratio (DER), Price-to-Earnings Ratio (PER, X1), Return on Equity (ROE, Z), and Company Size (Size). Company age has a moderately negative correlation with PER (-0.4446) and company size (-0.4666), indicating that older companies tend to have lower PER and smaller size, possibly due to their focus on stability rather than expansion. However, the relationships between company age and ROE (-0.0295) and stock price (0.0866) are very weak, suggesting that age has little significant influence on profitability or stock prices.

Stock price (X2) has a moderately positive correlation with DER (0.3058) and PER (0.2057), indicating that higher stock prices are generally found in companies with higher leverage and P/E ratios. Conversely, the negative correlation between stock price and company size (-0.4115) suggests that companies with higher stock prices tend to be smaller. DER's negative correlation with company size (-0.5983) and PER (-0.2777) indicates that highly leveraged companies are often smaller and have lower PER. The relationship between ROE and

other variables is generally weak, except for company size (-0.3117), which indicates that profitability tends to decrease in larger companies. Overall, the relationships among these variables reflect complex interactions that influence firm value.

Table 5 <Correlation Matrix Results>

Model		Age	X2 : Harga Saham	DER	X1 : PER	Z : ROE	Size
correlatios	Age	1,000000	0,086628	0,1891	-0,444610	-0,029490	-0,466595
	X2 : Harga Saham	0,086628	1,000000	0,3058	0,205701	0,079636	-0,411495
	DER	0,189124	0,305791	1,0000	-0,277743	0,077638	-0,598324
	X1 : PER	-0,444610	0,205701	-0,2777	1,000000	-0,046879	0,548609
	Z : ROE	-0,029490	0,079636	0,0776	-0,046879	1,000000	-0,311668
	Size	-0,466595	-0,411495	-0,5983	0,548609	-0,311668	1,000000

Source: Indonesia Stock Exchange

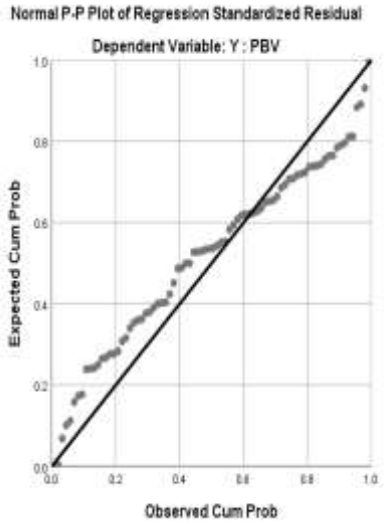

Figure 2 <P-Plot Graph (Source: Processed Data (2024)) >

In this study, the data was also tested for normality using a probability plot or called P-Plot. The P-Plot test is used to test whether the distribution of the data obtained follows a normal distribution or not. The results show that all points are not far from the diagonal line, which means that the data is normally distributed. The data was also found similarly in his research.

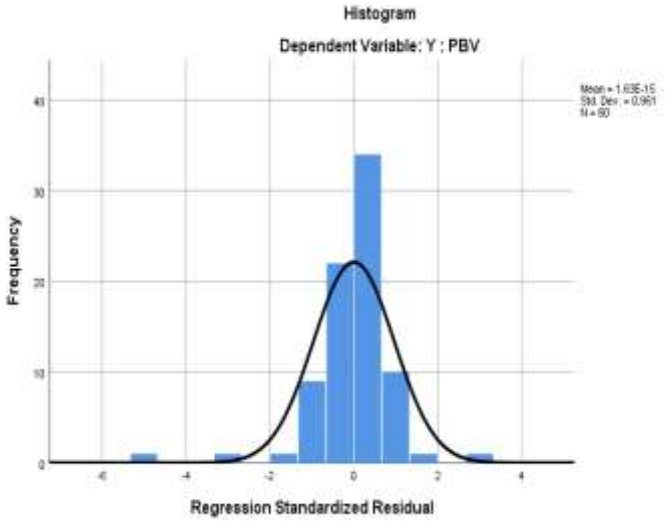

Figure 3 <Histogram Test Graph (Source: Processed Data (2024)) >

The results of the histogram analysis test show that the curved line curves upwards to form a perfect mountain and symmetrical legs (Figure 3). This means that the data to be processed in this study can be concluded that the data is normally distributed (Ismiyar & Sitorus, 2024). The data was also found similarly in the study.

Residual Normality Test

The residual normality test in this regression model is used to determine whether a regression is normal or not. This study uses the One Sample Kolmogorov-Smirnov test method. A regression can be said to be normal if the significance is more than 0.05. The following are the results of the residual normality test in this study.

Table 6. One Sample Kolmogorov-Smirnov Test>

One-Sample Kolmogorov-Smirnov Test		
		Unstandardized Residual
N		80
Normal Parameters[a,b]	Mean	0.000
	Std, Deviation	517.123
Most Extreme Differences	Absolute	0.092
	Positive	0.092
	Negative	-0.070
Test Statistic		0,092
Asymp. Sig. (2-tailed)		,088[c]
a. Test distribution is Normal.		
b. Calculated from data.		
c. Lilliefors Significance Correction.		

Source: Processed Data (2024)

Asymptotic significance 2-tailed or commonly abbreviated as Asymp. Sig is a probability value test to ensure that the distribution of observed variables does not deviate (Yu et al., 2006). From the results of the image above, it can be seen that the Asymp. Sig is 0.088 where the value is greater than 0.05. The Asymp. Sig value above 0.05 can be concluded that this residual value is normally distributed and there is no bias between independent variables.

Multicollinearity Test

The multicollinearity test is used to test a regression model whether there is a correlation between independent variables, a good regression model should not have multicollinearity. The Colinearity tolerance value for the PBV, stock price, DER, size, age variables respectively is not less than 0.10. The VIF values on the PBV, stock price, DER, size, and age variables also consecutively have no values greater than 10. The colinearity tolerance value is more than 0.10 and the statistics VIF value is less than 10, which means that the data does not have multicollinearity. From the data produced, it can be concluded that there is no multicollinearity here.

Table 7 <Multicollinearity Test>

	Collinearity Statistics	
Model	**Tolerance**	**VIF**
(Constant)		
X1 : PER	0,643	1,555
X2 : Harga Saham	0,808	1,237
Z : ROE	0,821	1,218
DER	0,608	1,644
SIze	0,333	3,006
Age	0,682	1,467

Source: Processed Data (2024)

From the table shown in table 7, it is known that the model in this study does not have issues with multicollinearity assumptions. This is evidenced by the Tolerance values of each variable being greater than 0.10 and the VIF values being less than 10.

Table 8 <F Test Result>

Model	**Sum of Squares**	**df**	**Mean Square**	**F**	**Sig.**
Regression	715008,579	7	102144,083	93365,733	,000[b]
Residual	78,770	72	1,094		
Total	715087,349	79			

a. Dependent Variable: Y : PBV
b. Predictors: (Constant), X2_Z, X1_Z, DER, Age, X2 : Harga Saham, Z : ROE, SIze
Source: Processed Data (2024)

The F-test results in the table 8 show that the regression model used in this study is statistically significant at a significance level of 0.000 (Sig. < 0.05). The F-value of 93,365.733, with degrees of freedom (df) of 7 for regression and 72 for residuals, indicates that the model overall can explain the variability of firm value (PBV) influenced by independent variables, namely company age (Age), stock price (X2), leverage (DER), profitability (ROE), company size (Size), and the interaction of moderating variables (X1_Z and X2_Z). Therefore, these results indicate that the combination of all independent and moderating variables has a significant effect on firm value.

Hypothesis Test and Control Variables

Table 9 <Hypothesis Test and Control Variables>

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	72,345	15,278		4,744	0,000
X1 : PBV	29,416	1,044	1,124	28,176	0,000
X2 : Harga Saham	0,014	0,003	0,009	4,522	0,000
Z : ROE	35,468	35,286	-0,138	4,289	0,000
DER	32,923	6,329	0,019	5,202	0,000
SIze	-26,560	5,699	-0,020	-4,660	0,000
Age	2,092	1,102	0,006	1,898	0,062
X1_Z	-68,691	20,964	-0,131	-3,277	0,002
X2_Z	-0,065	0,021	-0,008	-3,085	0,003
DER_Z	-131,274	30,420	-0,017	-4,315	0,000
Size_Z	127,189	30,878	0,155	4,119	0,000
Age_Z	-8,455	6,029	-0,007	-1,403	0,165

a. Dependent Variable: Y : PBV
Source: Processed Data (2024)

The results of hypothesis testing and control variable analysis reveal the influence of independent, moderating, and control variables on the dependent variable, represented by company value (PBV). The constant value of 72.345 with a significance level of 0.000 indicates that if all other variables are zero, the company value remains at a certain baseline level. This highlights the importance of fundamental company factors in influencing PBV.

Independent variables such as PBV (X1) have a coefficient of 29.416 with a significance of 0.000, indicating that PBV has a positive and significant impact on company value. Stock price (X2) also positively impacts company value with a coefficient of 0.014 and significance of 0.000, though its influence is relatively small. Additionally, profitability (ROE, Z), with a coefficient of 35.468 and significance of 0.000, demonstrates a substantial and significant contribution to increasing company value. Leverage (DER) also has a positive and significant influence with a coefficient of 32.923 and significance of 0.000. Conversely, company size (Size) shows a negative impact on company value with a coefficient of -26.560 and significance of 0.000. Meanwhile, company age (Age) has a coefficient of 2.092 but a significance of 0.062, indicating no significant influence on company value.

The moderation analysis results show that the interaction of PBV with the moderator (X1_Z) has a significant negative impact on company value, with a coefficient of -68.691 and significance of 0.002. Similarly, the interaction of stock price with the moderator (X2_Z) has a coefficient of -0.065 and significance of 0.003, and leverage with the moderator (DER_Z) has a coefficient of -131.274 and significance of 0.000. Conversely, the interaction of company size with the moderator (Size_Z) shows a positive and significant influence on company value, with a coefficient of 127.189 and significance of 0.000. Meanwhile, the interaction of company age with the moderator (Age_Z) is not significant, with a coefficient of -8.455 and significance of 0.165.

Overall, the research results show that most independent and moderating variables have a significant influence on company value. Factors such as profitability, leverage, stock price, and certain interactions significantly contribute to explaining the variation in company value. However, company age and some

moderating effects do not have a significant impact, indicating their limited influence on company value in this research context. This suggests the need to focus more on key factors that directly affect company value.

The Effect of Investment Decisions on Company Value

The first hypothesis (H1) in this study assumes that investment decisions have a positive effect on company value. 'Based on the results of the linear regression analysis in table 9, investment decisions have a positive and significant effect on company value in the infrastructure sector. This indicates that any increase in investment decisions, measured through the Price to Earnings Ratio (PER), can enhance the company's value reflected in the Price to Book Value (PBV). Investment decisions reflect management's confidence in seizing opportunities to generate future profits, which ultimately increases the company's attractiveness in the eyes of investors. This result is in line with his research (Juwinta et al., 2021).

In the infrastructure sector, sound investment decisions often involve the allocation of funds to strategic projects such as toll roads, ports, or energy facilities. These investments not only provide long-term profits but also demonstrate the company's commitment to expanding its operational capacity. This increases investor perception of the company's ability to create added value, leading to a significant increase in the company's market value.

This positive and significant correlation also reflects market confidence in the infrastructure sector as one with high growth potential. Moreover, effective investments can improve operational efficiency, strengthen competitive positioning, and ensure business sustainability. Therefore, well-made investment decisions not only bring financial gains to the company but also strengthen its reputation in the capital market, attracting more investors to invest.

The Effect of Stock Price on Company Value

The second hypothesis (H2) in this study assumes that stock prices have a positive effect on company value. Based on the results of the linear regression analysis in table 9, Stock price has a significant impact on the value of a company because stock price is one of the main indicators used by investors to assess the company's performance and prospects. A high stock price often reflects positive investor perception of the company's performance, indicating that the company has good prospects, high potential profits, and financial stability. Conversely, a low stock price may indicate uncertainty or declining performance, which can affect investors' view of the company's value. This result is in line with his research (Mulyono, 2015).

In the infrastructure sector, stock prices are often influenced by external factors such as government policies, interest rates, and macroeconomic conditions. Strong infrastructure and successful projects can increase the attractiveness of a company to investors, thus driving up stock prices. This increase in stock price will, in turn, raise the company's value, as higher stock prices reflect a larger market value, which is a common assessment of the company's strength and potential.

However, the impact of stock prices on company value can also be influenced by other factors such as the company's internal policies, financial report transparency, and managerial performance. Although stock prices reflect market expectations, they do not always reflect the true internal performance. Therefore, while stock prices play a role in enhancing the company's value, effective strategic decisions and company policies remain crucial in ensuring long-term growth and sustainability of the company's value in the market.

The Effect of Investment Decisions on Company Value Moderated by Profitability

The third hypothesis (H3) in this study assumes that profitability, which moderates the effect of investment decisions on company value, has a positive effect. Based on the results of the linear regression analysis in table 9, the moderation of the effect of investment decisions on company value actually weakens this effect significantly, this can be seen from the negative B and t values. The results of this study are in line with his research (Suteja et al., 2023).

Profitability, as measured by indicators such as Return on Equity (ROE), is often expected to have an impact on moderating the relationship between investment decisions and company value. However, in this study, profitability was not found to significantly moderate the effect of investment decisions on company value. This finding suggests that while profitability is important in assessing a company's financial health and performance, it may not necessarily enhance the impact of investment decisions on increasing company value, especially in the infrastructure sector.

One reason for this could be that the value of a company, especially in the infrastructure sector, is heavily influenced by long-term investments and external factors such as government policies, macroeconomic conditions, and the scale of projects. Therefore, even if a company is highly profitable, it does not automatically mean that its investment decisions will directly lead to higher company value, especially when those investments

involve significant capital expenditures or are subject to regulatory challenges that may not immediately translate into higher profits.

Additionally, profitability can be a reflection of past performance but does not always indicate future success. In the context of investment decisions, companies may make strategic moves that, while profitable in the short term, may not result in sustainable value creation in the long run. Therefore, the absence of a moderating effect of profitability on investment decisions may indicate that investors and stakeholders value other factors, such as the company's strategy, innovation, and market conditions, more than its past profitability when evaluating its potential to increase company value.

The Effect of Stock Price on Company Value Moderated by Profitability

The fourth hypothesis (H4) in this study has the assumption that profitability which moderates the influence of stock prices on company value has a positive effect. Based on the results of the linear regression analysis in table 9, the moderation of the influence of stock prices on company value actually weakens this influence, this can be seen from the negative B and t values. This indicates that although profitability is important as an indicator of financial performance, its impact on stock prices is not significant enough to directly influence the company's value. In many cases, stock prices are more influenced by external factors such as market perception, investor sentiment, and overall economic conditions, which may not always be directly affected by the company's profitability itself.

One reason why profitability cannot moderate this relationship is because stock prices are often more influenced by speculative factors and future expectations than by visible financial performance. Investors tend to evaluate a company's growth prospects, innovation potential, and market stability more in determining stock prices. While profitability reflects past success, it is not always a sufficient indicator to predict future stock performance, especially in sectors affected by market fluctuations and macroeconomic policies.

Furthermore, stock prices are also influenced by market liquidity, dividend policies, and larger corporate policies in the short term. Therefore, even if a company is highly profitable, if investors are not confident that the company will continue to grow or faces certain challenges, stock prices may remain stagnant or even decline. As a result, the relationship between stock prices and company value may depend more on macroeconomic factors and market perception rather than internal factors such as profitability, which explains why profitability cannot moderate stock prices in influencing company value.

Conclusion

Based on the results of this study, it can be concluded that investment decisions and stock prices have a positive and significant effect on the company's value in the infrastructure sector. Better investment decisions, reflected in the increase in the PER ratio, can drive the company's value growth. Additionally, stock prices also play an important role in increasing the company's value, with a significant relationship between stock prices and the company's PBV. However, profitability, as measured by ROE, does not moderate the relationship between investment decisions and stock prices on the company's value. While profitability can enhance company performance, in the context of this study, the profitability variable does not show a significant moderating role in these relationships. This indicates that other factors, such as sound investment decisions and stock price performance, are more dominant in influencing the company's value than profitability.

The implications of this study are the importance for companies in the infrastructure sector to focus on making careful investment decisions and strategies that can increase stock prices, as both have a significant impact on the company's value. Proper investment decisions can optimize the company's resource use and maximize returns for shareholders. Moreover, companies should also maintain stock price performance as an important indicator influencing investor perception of the company's value. Although profitability does not significantly moderate this relationship, companies still need to pay attention to profitability to ensure sustainable operational health.

However, this study has some limitations. One of them is the use of secondary data limited to the 2018-2021 period and certain infrastructure sectors, which may not fully represent the conditions of the entire infrastructure sector. Furthermore, there are limitations in the variables used to measure investment decisions and stock prices, which could be expanded by adding other variables such as managerial policies or external factors affecting the market. Moving forward, this research can be extended by expanding the research period, sector, and variables used, as well as considering broader external and internal factors that might influence the relationship between investment decisions, stock prices, and company value. Future research could also explore other factors that

may moderate these relationships, providing a more comprehensive understanding of the factors influencing the performance of companies in the infrastructure sector.

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