

## Article

# Investment Decision and Firm Value: Moderating Effects of Corporate Social Responsibility and Profitability of Non-Financial Sector Companies on the Indonesia Stock Exchange

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**Abstract:** This study focused on increasing firm value through CSR- and profitability-moderated investment decisions in emerging markets. A panel data analysis method was used for this study with a total of 215 observations of non-financial sector companies on the Indonesian Stock Exchange from 2018 to 2020. The results of the Chow test and the Hausman test showed that the fixed effect model with GLS was the most feasible. The model showed that there was a negative effect of investment decisions on firm value and the role of CSR and profitability strengthened this effect. Based on the results of the robustness check, the research model remained consistent with the results of previous studies. Investment decisions have a negative effect on firm value, and CSR and profitability moderate this effect, either when using other control variables or when using a different estimation model, which in this case was quantile regression. Our findings provide an understanding of the fact that investment decisions are important financial decisions for companies and that they can be controlled through good fund management and risk management.

**Keywords:** investment decision; corporate social responsibility; profitability; firm value; emerging market



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## 1. Introduction

Optimizing firm value is the main goal of a company (Jensen and Meckling 1976). Firm value describes the performance of management in carrying out the work entrusted to them by shareholders regarding the management of the company (Park and Byun 2022). Increasing the firm's value is what shareholders expect because the welfare of shareholders will increase with an increase in the firm's value. Maximizing firm value is a trade-off of the maximum firm value received by shareholders in the long run (Jensen 2001).

Investment decisions are one of the factors that can increase firm value (Fama 1978). Studies related to the effect of investment decisions on firm value have become a topic of much debate over the last few decades, both in countries with emerging markets and those with nonemerging markets. The pattern of research conducted in the 1990s showed that investment decisions can increase firm value (Bajo et al. 1998; Santos et al. 1993). Furthermore, the pattern of research conducted in the decade of the 2000s indicated that investment decisions tend to suppress increases in firm value (Brio et al. 2003; Lin and Kulatilaka 2007). In the 2010s, a pattern was found showing that increases in firm value were caused by investment decisions (Efni 2017; Soumaya 2015; Susanti et al. 2019). Based on these observed patterns, we concluded that a firm's value can be increased through investment decisions. Signaling theory is a theory that underlies investment decisions (Alghifari et al. 2022a). This theory explains that investment spending is a positive signal

that results in company growth in the future, which impacts profits (Sun and Chen 2017) and increases company value.

In this study, we re-examined the effect of investment decisions on firm value in a different region, particularly Indonesia, and investigated whether the results would be the same or different compared to other emerging market countries or nonemerging market countries. Moreover, empirical research on the effect of investment decisions on firm value that focuses on companies in Indonesia remains a research gap. This can be seen in the research results reported by Suartawan and Yasa (2016), Resti et al. (2019), Syamsudin et al. (2020), Suardana et al. (2020), Mumpuni and Indrastuti (2021), and Agustin and Anwar (2022), which indicate that investment decisions have a positive effect on firm value. On the contrary, the research results presented by Amaliyah and Herwiyanti (2020), Komala et al. (2019), and Attarie et al. (2018) indicate that investment decisions had no effect on firm value.

Based on the theoretical and empirical gaps, we aimed to build an empirical model to fill the gaps by adding a moderating variable. Many previous studies have used moderating variables to examine the effect of investment decisions on firm value, such as good corporate governance (Pramartha et al. 2020; Ardini et al. 2022) and dividend policy (Juwinta et al. 2021). We added the moderating variables of CSR and profitability as differentiators derived from previous research. The issues of environmental degradation, air pollution, flooding, and the use of preservatives that harm consumers and society have inspired the recognition of the growing importance of healthy living, as well as the need for environmentally friendly products and services. This phenomenon has encouraged the emergence of concepts such as green economy and green business. Green economy and green business are new paradigms in economics and business. They consist of a sustainable development strategy that prioritizes a balance between economic, social, and environmental values. This model is able to make up for a weakness of the old development strategy, which is that it only relies on growth. Based on this concept, the implementation of CSR is urgently necessary. In addition, we also included another moderating variable: profitability. High profitability indicates that a company's management has shown good performance; thus, it is a good signal for investors looking to invest in a company. The role of CSR and profitability was expected to strengthen the effect of investment decisions on firm value.

Our study focused on the Indonesian capital market. As seen from its development, the Indonesian capital market has exhibited an excellent trend where issuers that go public in the capital market each year experience a very significant increase. There were 619 issuers in 2018, 654 issuers in 2019, and 715 issuers in 2020 listed on the Indonesian Stock Exchange. Increases in the number of issuers that conduct initial public offerings (IPOs) trigger increases in the number of new investors investing in the Indonesian capital market. Investors, as shareholders, certainly expect the value of these companies to increase every year. Therefore, we conducted research on the non-financial sector because companies that are included in the non-financial sector represent the majority of public companies listed on the Indonesian Stock Exchange.

The research period was from 2018 to 2020, and between these years, especially at the end of the research period, the COVID-19 pandemic occurred. The COVID-19 pandemic has caused economic and health crises around the world (Guedhami et al. 2022). This was an unexpected event that caused stock market investors to panic, and the value of these markets dropped dramatically (Meliana et al. 2022). The market reaction to the occurrence of the COVID-19 pandemic provided a new understanding of how real shocks and financial policies drive company value (Ramelli and Wagner 2020) as it showed that companies must be able to ensure their financial security. This is evident from several research results showing that the financial performance of companies worsened due to the COVID-19 pandemic (Alsamhi et al. 2022; Hu and Zhang 2021; Shen et al. 2020). Similar to company performance, COVID-19 has also had an impact on decreasing company value (Yang et al. 2022; Ramelli and Wagner 2020).

Based on the background explained above, we expanded the scope of this study to explore several novel research topics, including (1) CSR and profitability as moderating variables and (2) research on emerging market countries, particularly Indonesia, in the context of capital markets in the non-financial sector. In addition, we aimed (3) to obtain a complete empirical model by including control variables, such as leverage, size, and age. In support of this novel research objective, a panel data regression analysis approach was used, and we replaced the control variables and applied an estimation of the quantile regression model to test the robustness of the model.

## 2. Hypothesis Development

Investment decisions are one of the important functions of a company as a company's goals can be achieved via company investment activities and the determination of the composition of assets (Tan and Luo 2021). The decision to invest capital in a proposed investment must be evaluated and adjusted to the level of risk and expected return (Liu and Zhang 2020). A rate of return that is adjusted to a level of risk that can be controlled or managed is expected to increase firm value. Based on signaling theory (Spence 1973), the involvement of two parties known as the signaler and the receiver of the signal plays a very significant role. In the context of this study, a company's management provides a signal in the form of information related to investment decisions that indicate the company has good growth prospects in the long term (Modigliani and Miller 1958) such that it will be able to increase the firm's value, which has an impact on the prosperity of shareholders. This statement is supported by several research studies, including Afşar and Karaçayır (2020), Al Daas et al. (2020), Pramarta et al. (2020), and Susanti et al. (2019), who found that investment decisions affect firm value. Therefore, we hypothesized the following:

**H1.** *Investment decisions affect firm value.*

Profitability shows the size of the profit earned associated with investment or sales (Tao et al. 2020). It also shows the ability of management to earn profits for the company or is a measure of the effectiveness of a company's management (Amarudin et al. 2019). High profitability indicates that the company has good future prospects (Yondrichs et al. 2021; Handayati et al. 2022), which is a positive signal for investors to invest their funds. Profitability has a large impact on the level of financial liquidity and financial security. Therefore, when analyzing a company's profitability, investors should also pay attention to the level of financial liquidity. In the case of long-term investments, investors increasingly analyze financial security in addition to profitability levels. Investment decisions, with the support of high profitability, strengthen a company's reputation in the eyes of investors so that investors are interested in investing, which has an impact on increasing the firm's value (Alghifari et al. 2022a). Based on this explanation, we hypothesized the following:

**H2.** *Profitability moderates the effect of investment decisions on firm value.*

Corporate social responsibility, or CSR, is an action that appears to promote some social good that is external to the interests of the company and is required by law (Chu 2021). CSR activities not only affect investment stakeholders, such as shareholders and debtholders, but also non-investment stakeholders, such as customers, communities, and social organizations (Gupta and Krishnamurti 2021; Gunardi et al. 2016). Given the broad range of stakeholders involved, it is yet to be determined whether corporate social responsibility behavior is consistent with the interests of value-maximizing investors. Based on the "conflict resolution hypothesis" or "reputation-building hypothesis" (Freeman 1984), it is expected that CSR has a positive effect on firm value. Stakeholder theory explains that companies can use CSR to reduce conflicts between managers and non-investment stakeholders. In addition, CSR engagement can be used as a mechanism to achieve better communication between insiders and outsiders and thereby reduce conflicts of interest between managers and various investment and non-investment stakeholders (Dewi et al. 2021; Ronald et al. 2019; Butt et al. 2020). Thus, investment decisions with good CSR prac-

tices will be able to increase a firm's value. Based on this understanding, we hypothesized the following:

**H3.** *CSR moderates the effect of investment decisions on firm value.*

### 3. Methods

The population in this study is non-financial sector companies listed on the Indonesia Stock Exchange from 2018 to 2020. We excluded companies in the non-financial sector that did not have complete financial data during the study period; thus, the sample size was 215 observations. The study was conducted over three years. Although the study period was very short, it did not affect our estimation model. This study consisted of four kinds of variables, including a dependent variable, an independent variable, a moderating variable, and a control variable. The dependent variable was the firm value, while the independent variable was the investment decision, the moderating variables were CSR and profitability, and the control variables were leverage, firm size, and firm age. A complete list of the variable definitions is presented in Table 1.

**Table 1.** Variable definitions.

Variable	Definition	Formula	Source
Firm Value	Firm value is an investor's perception of a company, which is often associated with stock prices.	$Tobin's Q = \frac{(\text{Market Value Equity} + \text{Total Debt})}{\text{Total Asset}}$	(Malahim et al. 2022; Sadiq et al. 2020; Dang et al. 2021)
Investment Decision	The price-to-earnings ratio is a valuation ratio that compares a company's current share price to its earnings per share.	$\text{Price to Earnings Ratio (PER)} = \frac{\text{Market Price per Share}}{\text{Earnings per Share}}$	(Turmauli et al. 2018; Kadim et al. 2020; Triani and Tarmidi 2020)
Profitability	Profitability is a ratio that measures a company's ability to generate profits by using resources owned by the company, such as assets, capital, or company sales.	$\text{Return on Equity (ROE)} = \frac{\text{Net Income}}{\text{Shareholder's Equity}}$	(Chabachib et al. 2019; Setiawanta et al. 2021; Alghifari et al. 2022b)
Corporate Social Responsibility	CSR is an important tool for an organization to uphold its image and reputation.	$\text{CSR Score} = \frac{\text{Number of Items Disclosed}}{\text{Items Based on GRI}}$	(Jeriji et al. 2022; Wirawan et al. 2020)
Leverage	Leverage is the use of debt to buy more assets and is employed to increase the return on equity.	$\text{Debt to Equity (DER)} = \frac{\text{Total Debt}}{\text{Total Equity}}$	(Setiawanta et al. 2021; Alzubi and Bani-Hani 2021; Alghifari et al. 2022c)
Size	The amount of total assets owned by a company.	Natural Logarithm of Total Assets	(Diantimala et al. 2021; Solikhah et al. 2022; Gunardi et al. 2020)
Age	The length of time a company is able to carry out its operational activities so that it can maintain an ongoing presence.	$\text{Age of Firms} = \text{Year } t - \text{year } 0 \text{ (Establishment)}$	(Nguyen and Nguyen 2020; Hossain 2021)

This study used a verification method; therefore, hypothesis testing needed to be carried out to test the effect of investment decisions on firm value by moderating the effects of CSR and profitability when controlling for leverage, firm size, and firm age. Panel data were used in this study. Panel data are a combination of time series and cross-sectional data in which the same cross-sectional unit is measured at multiple times. In other words, panel data are observations of the same individuals over a period of time. With panel data, if we have T time periods ( $t = 1, 2, \dots, T$ ) and N subjects ( $i = 1, 2, \dots, N$ ), we will have a total of NT units of observation. When each participant has the same number of time units, the data are referred to as a balanced panel. If, however, the number of units of time for each member fluctuates, the panel is considered uneven. In this investigation, an unbalanced

panel was utilized. The research model is depicted in the following equation for panel data regression:

$$\begin{aligned} \text{Firm Value} = & \beta_1 + \beta_2 \text{Investment Decision}_{it} + \beta_3 \text{CSR}_{it} + \beta_4 \text{Profitability}_{it} \\ & + \beta_5 \text{Investment Decision}_{it} * \text{CSR}_{it} \\ & + \beta_6 \text{Investment Decision}_{it} * \text{Profitability}_{it} + \beta_7 \text{Leverage}_{it} \\ & + \beta_8 \text{Size}_{it} + \beta_9 \text{Age}_{it} + u_{it} \end{aligned}$$

A common effect model (CEM), fixed effect model (FEM), and random effect model (REM) were used in the panel data regression analysis approach. To determine the best model, the Chow test, Hausman test, and Lagrange multiplier test were carried out. The Chow test was administered to determine whether a common effect or fixed effect model was more suitable for estimating the panel data. To conduct the Chow test, the data were first regressed using the common and fixed effect models and then tested for fixed or random effects using the redundant fixed effect likelihood ratio. The Hausman test was performed to determine whether fixed effect or random effect models were more suitable for estimating the panel data. For the Hausman test, the data were also regressed using the fixed effect and random effect models, and then fixed or random testing using the correlated random effect—or the Hausman test—was performed. The Lagrange multiplier test was conducted to compare the fixed effect model and the fixed coefficient model, or to create an inverse model. This test is based on a chi-square distribution with the same number of degrees of freedom (df) as independent variables. The next step was to test the classical assumptions through two classical assumption tests, including the multicollinearity test and the heteroscedasticity test. Normality and auto-correlation tests were not carried out because the number of samples used was more than 40 (Ghasemi and Zahediasl 2012) and the autocorrelation problem was solved using the generalized least squares model (Gujarati and Porter 2008).

#### 4. Results

Table 2 presents a summary of the average statistics for the variables in the estimation model for the non-financial sector. Focusing on the key variables, the average firm value (Tobin's Q) was 6.1545 times. The highest firm value occurred in 2020 at 11.812 times, and the lowest firm value was 2.0178 times in 2018. Additionally, the average value of investment decisions (PER) was 42.82381 times. The lowest PER occurred in 2018 at 38.4017 times, and the highest PER was in 2019 at 49.1896 times. CSR had an average value of 0.6374. The lowest CSR occurred in 2018 at 0.5736, and the highest CSR occurred in 2019 at 0.6698. The average profitability (ROE) was  $-0.0183$  or  $-1.83\%$ , while the highest ROE value occurred in 2019 at 0.0374 or 3.74%, and the lowest was in 2018 at  $-0.0485$  or  $-4.85\%$ . Furthermore, the average leverage (DER) showed a value of 6.8077, while the lowest DER occurred in 2019 at 1.344, and the highest DER was in 2020 at 17.3757. Next, the average value of firm size (i.e., the natural logarithm of total assets) in the non-financial sector was 14.4761. The smallest firm size occurred in 2020 at 7.6326, and the largest firm size was in 2018 at 28.0512. Finally, the average firm age was 13.18 years.

Table 3 presents the correlation matrix for the variables in the estimation model. The correlation between the explanatory variables and firm performance provides an initial view of their univariate relationship. The correlation coefficient between the explanatory variables and our firm value was weak, on average, except the profitability variable tended to be moderate. This can be seen from the value of each correlation, including investment decisions of 0.1145, CSR of  $-0.0032$ , leverage of  $-0.0964$ , firm size of  $-0.0592$ , firm age of 0.1919, and profitability of 0.4558.



**Table 2.** Descriptive statistics (mean values).

Variable	2018	2019	2020	Mean
1. Firm Value	2.0178	5.3644	11.0812	6.1545
2. Investment Decision	38.4017	49.1896	40.8800	42.8238
3. CSR	0.5736	0.6698	0.6687	0.6374
4. Profitability	−0.0485	0.0374	−0.0437	−0.0183
5. Leverage	17.3757	1.3444	1.7032	6.8077
6. Size	28.0512	7.7445	7.6326	14.4761
7. Age	12.3538	13.3870	13.7882	13.1763

**Table 3.** Correlation matrix.

Variable	Correlation Matrix						
	1	2	3	4	5	6	7
1. Firm Value	1.0000						
2. Investment Decision	0.1145	1.0000					
3. CSR	−0.0322	−0.0139	1.0000				
4. Profitability	0.4558	−0.0675	−0.0458	1.0000			
5. Leverage	−0.0964	−0.0385	−0.0587	0.0320	1.0000		
6. Size	−0.0592	−0.3272	−0.3272	0.1020	0.1638	1.0000	
7. Age	0.1919	−0.0204	−0.0204	0.2201	0.0828	0.0884	1.0000

The results of the panel data test are shown in Table 4. The model specification test was carried out first to determine which model was feasible to use. The results of the Chow test and the Hausman test showed that the fixed effect model with GLS was the most feasible. Next, we tested the classical assumptions on the selected model. This study used two classical assumption tests, including the multicollinearity test and the heteroscedasticity test (also known as the Glejser test). The results of the multicollinearity test showed that the correlation between the explanatory variables was lower than 0.8, indicating the absence of multicollinearity (Table 3). The Glejser test showed that there was no symptom of heteroscedasticity in the regression model. This can be seen based on the significance value of each independent variable to the absolute residual value, which was higher than 0.05.

Based on the results of the fixed effect model (FEM) with GLS, Table 4 shows that the model that formed the firm value had good predictive results (F-Test = 20.9450;  $p < 0.01$ ) which were supported by a relatively moderate R square value of 0.5191. In Hypothesis 1 (H1), we hypothesized that a significant effect would exist for investment decisions and firm value, and our results support this. The results of the FEM with GLS revealed a negative relationship between investment decisions (PER) and firm value (Tobin's Q) ( $\beta = -0.0192$ ; SE = 0.0097;  $p < 0.05$ ). This finding is not in accordance with the initial idea of signaling theory that investment decisions have a positive effect as this information was negative. This study is in line with research by Salama et al. (2019) who determined that investment decisions had a negative effect on firm value. For the moderating effect of CSR and profitability (H2 and H3), the interaction showed a significant effect on firm value. FEM results reported a significant positive moderating effect of CSR ( $\beta = 0.03171$ ; SE = 0.0160;  $p < 0.05$ ) and profitability ( $\beta = 0.2019$ ; SE = 0.0224;  $p < 0.01$ ) on the relationship between investment decisions (PER) and firm value (Tobin's Q).

We performed robustness checks to ensure the reliability of our statistical conclusions. Our first model of a robustness check replaced the company's internal control variables, such as leverage, firm size, and firm age, with the company's external control variables, including inflation and GDP. The results of the robustness check based on Table 5 show that the common effect model with GLS was the most feasible. The findings show that investment decisions had a significant effect on firm value ( $\beta = -0.0087$ ; SE = 0.0023;  $p < 0.01$ ), and the effect of CSR ( $\beta = 0.0141$ ; SE = 0.0037;  $p < 0.01$ ) and profitability moderated the effect of investment decisions on firm value. The robustness check of our second model

used a different estimation model, which was the quantile regression model. The results in Table 5 show that investment decisions, proxied by PER, still consistently affected firm value in a negative direction ( $\beta = -0.0105$ ;  $SE = 0.0027$ ;  $p < 0.01$ ), and CSR ( $\beta = 0.0152$ ;  $SE = 0.0045$ ;  $p < 0.01$ ) and profitability ( $\beta = 0.2167$ ;  $SE = 0.0128$ ;  $p < 0.01$ ) moderated the effect positively. The results of the robustness check imply that the model formed with the company's external control variables, particularly inflation and GDP, and the estimation model using the quantitative regression model showed that investment decisions consistently still had an effect on firm value, and CSR and profitability strengthened the relationship. This means that the model formed in our study has been tested for durability.

**Table 4.** Data panel results.

Tobin's Q Outcome Variables			
Variable	Common Effect Model (CEM)	Fixed Effect Model (FEM)	Random Effect Model (REM)
Constant	1.8945 *** (0.6186)	3.7329 *** (0.9360)	1.1993 *** (0.3574)
PER	−0.0189 ** (0.0094)	−0.0192 ** (0.0097)	−0.0013 (0.0051)
CSR	−1.0949 (0.8570)	−0.6796 (0.7865)	−0.1948 (0.4250)
ROE	1.0942 ** (0.5680)	0.9159 ** (0.4639)	1.4370 *** (0.2632)
PER * CSR	0.0308 *** (0.0155)	0.03171 ** (0.0160)	0.0029 (0.0081)
PER * ROE	0.1691 *** (0.0240)	0.2019 *** (0.0224)	0.0829 *** (0.0119)
DER	−0.0687 (0.0423)	−0.0329 (0.0343)	0.0159 (0.0358)
SIZE	−0.0075 *** (0.0095)	−0.1593 *** (0.0564)	−1.0038 *** (0.2058)
AGE	0.0039 (0.0079)	0.0092 (0.0075)	0.0012 (0.0038)
R <sup>2</sup>	0.4107	0.5191	0.3246
Adjusted R <sup>2</sup>	0.3867	0.4943	0.2970
F-Test	17.0794 ***	20.9450 ***	11.7769 ***
Chow Test for FEM	−	3.9272 ***	−
Hausman Test For REM	−	−	29.4976 ***
Multicollinearity Test	−	−	No
Heteroscedasticity Test	−	−	No

\*\*\*, \*\*, and \* indicate significance levels at 1%, 5%, and 10%, respectively. The figures stated represent the coefficient values of the variables, and the values in the parentheses stand for the values of the standard error. Fixed effect models were selected based on the Chow test and the Hausman test.

**Table 5.** Robustness check.

Tobin's Q Outcome Variables		
Variable	Common Effect Model (CEM)	Quantile Regression
Constant	2.9395 (0.4253)	1.1248 *** (0.1801)
PER	−0.0087 *** (0.0023)	−0.0105 *** (0.0027)
CSR	−0.0427 (0.1173)	−0.4135 * (0.2495)
ROE	0.3955 *** (0.1040)	0.1708 (0.1653)
PER * CSR	0.0141 *** (0.0037)	0.0152 *** (0.0045)

Table 5. Cont.

Tobin's Q Outcome Variables		
Variable	Common Effect Model (CEM)	Quantile Regression
PER * ROE	0.2167 *** (0.0128)	0.3558 *** (0.007)
INFLATION	−102.1448 *** (19.8968)	-
GDP	0.2339 *** (0.0398)	-
DER	-	−0.0105 (0.0123)
SIZE	-	−0.0059 ** (0.0027)
AGE	-	0.0002 (0.0023)
R <sup>2</sup>	0.8597	0.1878
Adjusted R <sup>2</sup>	0.8548	0.1546
F-Test	11.7826 ***	-
Quasi-LR Statistic	-	152.2016 ***
Quantile Slope Equality Test	-	3584.050 ***
Symmetric Quantiles Test	-	1073.062 ***

\*\*\*, \*\*, and \* indicate significance levels at 1%, 5%, and 10%, respectively. The figures stated represent the coefficient values of the variables, and the values in the parentheses stand for the values of the standard error.

## 5. Discussion

Our findings show that investment decisions affected firm value in a negative direction. This condition was caused by the distribution pattern of firm value data which tended to increase when investment decisions proxied by PER decreased. This can be seen in the results of the descriptive analysis as investment decisions in non-financial sector companies in the final period of the study decreased while firm value proxied by Tobin's Q experienced an increase. The decline occurred due to the COVID-19 pandemic because investment activity decreased by 16.89% in 2020 compared to the previous year. In this situation, the management of the company places a greater emphasis on its financial stability, and businesses with strong managerial qualities typically limit investment. Higher-ability managers also decreased short- and long-term debt financing of businesses, and in reaction to the crisis, these managers also decreased their cash holdings (Jebran and Chen 2022). The results of this study are different from the findings of Al Daas et al. (2020), Pramarttha et al. (2020), Susanti et al. (2019), Afşar and Karaçayır (2020), and Juwinta et al. (2021) who found that investment decisions had a positive effect on firm value. This situation implies that increased investment decisions can increase a firm's value.

By expanding the scope of the companies studied, particularly companies in the non-financial sector, our findings are different since investment decisions had a negative effect on firm value in developing countries. This is not in line with the initial idea of signaling theory in our research. The management of a company as a signaler provides information related to investment decisions and is captured by stock exchange players or signal recipients as positive information because of the strategic effect of investment decisions related to company growth and company prospects in the future. However, in this case, it tended to be responded to negatively by stock exchange players. Investment decisions must be considered by companies because funds financed by large amounts of debt can increase risk when managing investments (Bhat et al. 2020). This can reduce the confidence of stock exchange players, especially investors, in their investment, which has an impact on stock market prices and affects firm value.

Next, we confirmed the hypothesis that CSR moderates the effect of investment decisions on firm value. The results show that, under conditions of CSR disclosure, the strong influence of investment decisions on firm value was negative. CSR disclosure has become a common practice in business activities carried out by companies. In general,



companies only disclose activities that benefit stakeholders, or what is called positive CSR activities (Murashima 2020). Nevertheless, a company's investment activity in CSR is a positive activity, but this requires a very large investment cost (Nuvaaid et al. 2017). This condition causes CSR to strengthen the negative relationship between investment decisions and firm value. Therefore, cost management in various investment practices must be managed efficiently by companies, especially in CSR practices.

Other findings show the strength of profitability's moderation on the effect of investment decisions on firm value, which was negative. Capital allocation strategies in investment decisions usually look at the relationship between adjusted return and risk (Koch-Medina et al. 2021). Companies experiencing growth usually tend to carry out investment activities and expect to obtain returns, which requires additional funding both internally and externally. Externally, companies tend to choose funding either by using debt or issuing new shares, which increases the company's cost of capital (Tan et al. 2020). These activities may increase the company's return, but the risks are also higher; thus, high profitability strengthens the effect of negative investment decisions on firm value.

We re-estimated the model to test its robustness by using the quantile regression model estimation and changing the control variables that were internal to external through inflation and GDP. The results show that investment decisions have an effect on firm value, and the interaction effect of profitability also remains consistent in moderating this effect. Therefore, our research model has proven its robustness, especially for non-financial sector companies on the Indonesia Stock Exchange.

## 6. Conclusions

This study analyzed the impact of investment decisions on firm value moderated by CSR and profitability in non-financial sector companies on the Indonesian Stock Exchange. This research provides some additional insights in terms of knowledge as well as empirical literature. First, our results showed that investment decisions in non-financial sector companies on the Indonesia Stock Exchange tended to have a negative effect. Second, our results did not align with signaling theory, which states that companies that have good growth opportunities but high investment costs and risks can reduce firm value. Third, we found that CSR and profitability strengthened the negative effect of investment decisions on firm value.

Based on these findings, this study differs from previous findings that investment decisions tend to increase firm value, particularly prior to the COVID-19 pandemic. Many studies have found that the COVID-19 pandemic has had a negative effect on the stock market (Saif-Alyousfi 2022), company performance (Alsamhi et al. 2022), and firm value (Lee 2022). Our findings support these results. Our findings imply that investment decisions are important financial decisions for companies that must also consider costs. Thus, companies must be able to manage funds for these investment decisions. Moreover, companies must be able to mitigate risks that arise due to these investment activities. A company's growth opportunities through investment decisions with good fund management is considered by investors who may invest.

Our theoretical contribution is that financial decisions made by companies, including investment decisions, are conditional theories in which a component can have a large effect on one company but the opposite effect on other companies under other conditions. Future research should consider various conditions, such as before and after the crisis, as well as other conditional factors. The managerial implication of our findings, in addition to what has been discussed previously regarding the importance of managers in decision making, particularly company financial decisions, is that managers with high capabilities impact the maintenance of company financial stability. Therefore, future research agendas should include variables related to managerial abilities.

This study has limitations. Only companies listed on the Indonesian Stock Exchange, especially the non-financial sector, were the focus of this research. Therefore, further research can use more specific sectors; for example, energy, basic materials, industrial, con-

sumer non-cyclicals, consumer cyclicals, healthcare, properties and real estate, technology, infrastructures, transportation, and logistics. Another limitation is the short research period of only 3 years. Future studies can extend the research time frame. Other moderating variables can also be added to determine the consistency of research results in future studies, such as firm size, firm age, military connection, CEO duality, risk management, and company leverage level.

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