

DIJDBM:
**Dinasti International Journal of Digital
Business Management**

E-ISSN: 2715-4203
P-ISSN: 2715-419X

<https://dinastipub.org/DIJDBM> ✉ dinasti.info@gmail.com ☎ +62 811 7404 455

DOI: <https://doi.org/10.38035/dijdbm.v7i2>
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Sustainability, Capital Structure, and Growth on Firm Value: Evidence from the Indonesian Technology Sector with Profitability and ERM as Moderators

Arief Syafrudin¹, Asep Risman²

¹Universitas Mercu Buana, Jakarta, Indonesia, 55124010005@student.mercubuana.ac.id.

²Universitas Mercu Buana, Jakarta, Indonesia, asep.risman@mercubuana.ac.id.

Corresponding Author: 55124010005@student.mercubuana.ac.id¹

Abstract: This study aims to examine the effect of Sustainability, Capital Structure, and Firm Growth on Firm Value, with Profitability and Enterprise Risk Management as moderating variables in technology sector companies listed on the Indonesia Stock Exchange during 2019–2024. The population consists of 47 companies, with a sample of 14 firms selected through purposive sampling. The study uses secondary data obtained from financial statements and annual reports published on the official website of the Indonesia Stock Exchange and company websites. The analytical methods employed are panel data regression and Moderated Regression Analysis using the Random Effect Model approach. The findings reveal that Capital Structure and Firm Growth have a positive and significant effect on Firm Value, while Sustainability has no significant effect. Profitability does not moderate the relationships between Sustainability, Capital Structure, and Firm Growth and Firm Value. Enterprise Risk Management does not moderate the effect of Sustainability and Firm Growth; however, it strengthens the positive effect of Capital Structure on Firm Value. Simultaneously, the model is statistically significant with an explanatory power of 30.22 percent. These results indicate that financing decisions and growth performance are more valued by the market when supported by effective risk management practices.

Keyword: Sustainability, Capital Structure, Firm Growth, Firm Value, Enterprise Risk Management.

INTRODUCTION

The rapid development of the global economy over the past decade has been marked by significant transformation, particularly following the COVID-19 pandemic, which accelerated digitalization and reshaped business models across industries. In Indonesia, the technology sector has emerged as one of the main drivers of the digital economy, contributing increasingly to national economic growth. The expansion of e-commerce, fintech, artificial intelligence, and digital services has stimulated business growth and attracted substantial investor interest. However, despite strong growth prospects, the firm value of technology companies listed on the Indonesia Stock Exchange during the 2019–2024 period has experienced considerable

fluctuations. This condition indicates that firm value is influenced not only by industry growth but also by fundamental corporate factors. Firm value reflects market perceptions of a company's performance and future prospects, commonly measured using Price to Book Value. In practice, significant valuation differences exist among companies within the same sector. Some firms achieve premium valuations, while others remain close to or below their book value. These disparities suggest that investors evaluate multiple factors, including sustainability practices, capital structure decisions, growth performance, profitability levels, and risk management effectiveness, when assessing firm value.

Sustainability has gained increasing attention due to rising demands for transparency and responsible business practices. Nevertheless, previous empirical studies have produced inconsistent findings regarding the relationship between sustainability and firm value. Similar inconsistencies are observed in studies examining the effects of capital structure and firm growth on firm value. These mixed results suggest that other internal factors may influence the strength and direction of these relationships. Profitability and Enterprise Risk Management are considered important factors that may strengthen or weaken the impact of sustainability, capital structure, and growth on firm value. Companies with strong profitability and effective risk management systems are generally better positioned to manage expansion strategies and business uncertainties, particularly in the dynamic and high-risk technology sector.

Based on this background, this study aims to analyze the effects of Sustainability, Capital Structure, and Firm Growth on Firm Value, with Profitability and Enterprise Risk Management as moderating variables, using technology-sector companies listed on the Indonesia Stock Exchange during 2019–2024. The research questions addressed in this study are: (1) Does Sustainability affect Firm Value? (2) Does Capital Structure affect Firm Value? (3) Does Firm Growth affect Firm Value? (4) Does Profitability moderate the relationship between Sustainability, Capital Structure, and Firm Growth and Firm Value, and (5) Does Enterprise Risk Management moderate these relationships?.

METHOD

This study employs a quantitative research design with an explanatory approach to examine the causal relationships between Sustainability, Capital Structure, Firm Growth, and Firm Value, with Profitability and Enterprise Risk Management as moderating variables. The research focuses on technology sector companies listed on the Indonesia Stock Exchange during the 2019–2024 period. The study was conducted using secondary data collected between January and March 2026. The population of this study consists of 47 technology sector companies listed on the Indonesia Stock Exchange. The sample comprises 14 companies selected using purposive sampling based on the following criteria: (1) companies consistently listed during the 2019–2024 period; (2) companies that published complete financial statements and annual reports during the observation period; and (3) companies with available data related to the research variables.

The data used in this research are secondary data obtained from audited annual financial statements and annual reports published on the official website of the Indonesia Stock Exchange and the respective company websites. The research instrument is documentation, where financial data and disclosure information are collected and tabulated according to the operational definitions of each variable.

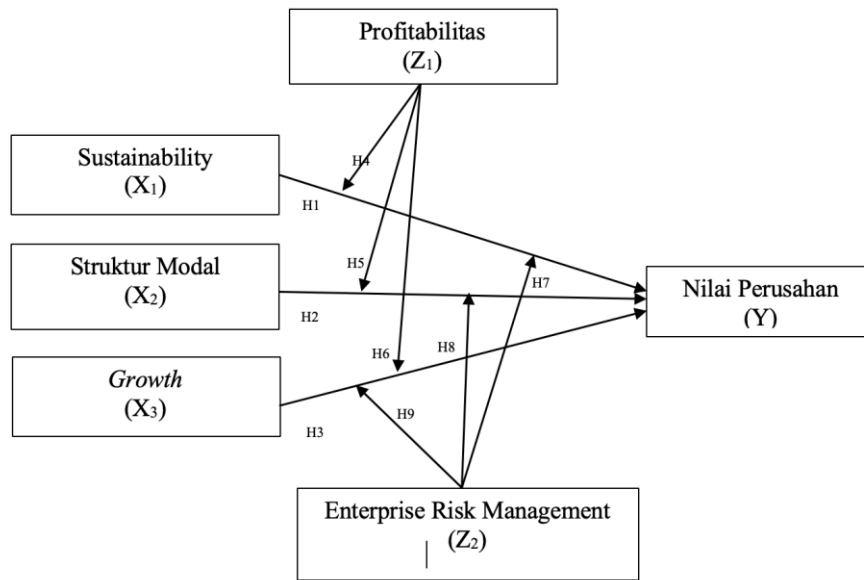
Firm Value is proxied by Price to Book Value (PBV). Sustainability is measured based on sustainability or ESG disclosure. Capital Structure is measured using the Debt to Equity Ratio (DER). Firm Growth is measured using growth indicators based on financial performance. Profitability is measured by Return on Assets (ROA). Enterprise Risk Management is measured based on risk management disclosure.

The data analysis technique uses panel data regression combined with Moderated Regression Analysis (MRA) to examine the moderating effects. Model selection is conducted

through the Chow test, Hausman test, and Lagrange Multiplier test to determine the most appropriate panel regression model. The Random Effect Model is selected as the best model. Hypothesis testing is conducted using the t-test for partial effects and the F-test for simultaneous effects, with a significance level of 5 percent. The coefficient of determination is used to measure the explanatory power of the model.

RESULTS AND DISCUSSION

Figure



Source: Research Results

Figure 1. Conceptual Framework

Based on the panel data regression analysis using the Random Effect Model, the overall model is statistically significant, as indicated by a Prob(F-statistic) value below 0.05. This result confirms that sustainability, capital structure, firm growth, profitability, enterprise risk management, and their interaction terms simultaneously influence firm value. The coefficient of determination (R-squared) of 0.3022 indicates that 30.22 percent of the variation in firm value can be explained by the variables included in the model, while the remaining variation is influenced by other factors outside this study.

The results show that sustainability does not have a statistically significant effect on firm value. Although the coefficient indicates a positive direction, the insignificance suggests that sustainability disclosure has not yet been fully translated into higher market valuation within the technology sector. This implies that investors may prioritize financial and growth-related indicators over sustainability practices when assessing firm value.

Capital structure has a positive and significant effect on firm value. This finding indicates that leverage decisions are positively interpreted by investors, reflecting confidence in the company’s financing strategy and its ability to manage debt effectively. In the technology sector, where expansion and innovation require substantial funding, the use of debt appears to be perceived as a strategic decision that supports value creation.

Firm growth also has a positive and significant effect on firm value. This result confirms that companies demonstrating strong expansion performance and scalability receive higher market valuation. Growth signals future revenue potential and competitive positioning, which are highly valued by investors in technology-based industries.

Regarding the moderating effects, profitability does not significantly moderate the relationship between sustainability and firm value, capital structure and firm value, or firm growth and firm value. This indicates that the influence of sustainability, leverage, and growth on firm value operates independently from the level of profitability.

Enterprise risk management does not moderate the effect of sustainability and firm growth on firm value. However, enterprise risk management significantly strengthens the positive effect of capital structure on firm value. This finding suggests that leverage contributes more strongly to firm value when supported by effective and structured risk management practices. In a dynamic and high-risk sector such as technology, investors place greater trust in debt utilization when companies demonstrate strong governance and risk control mechanisms.

Overall, the findings indicate that firm value in the technology sector is primarily driven by financing decisions and growth performance. Risk management enhances the positive impact of capital structure, while sustainability and profitability do not show significant direct or moderating effects within the observed period.

Descriptive Statistics

The study uses 84 panel data observations from technology sector companies during 2019–2024. Firm value shows an average of 0.5035 with relatively high variation, indicating differences in market valuation among firms. The distribution of firm value is normal, as indicated by the Jarque-Bera probability above 0.05.

Sustainability has a high average value (0.9431) with low variability, suggesting that most companies have relatively similar sustainability disclosure levels. However, the distribution is not normal.

Capital structure shows a high mean (1.9862) with very large variation and extreme maximum values, indicating significant differences in leverage policies among companies. The data are not normally distributed.

Firm growth also demonstrates considerable fluctuation, with both positive and negative values observed during the study period, reflecting unstable expansion performance in the sector.

Profitability has a low average value (0.0095), indicating that many technology firms generate minimal returns, and some experience losses. Enterprise risk management shows substantial variation across companies.

Overall, the descriptive results indicate that capital structure, growth, profitability, and enterprise risk management vary considerably among technology firms, while sustainability disclosure tends to be more uniform. Most variables are not normally distributed, which supports the use of panel regression analysis.

Table 1. Descriptive Statistics

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Sample: 2019 2024

	PBV	SUS	DER	GROWTH	ROA	ERM
Mean	0.503546	0.943164	1.986205	0.185517	0.009526	0.093976
Mediam	0.476047	0.948900	0.376450	0.074300	0.030000	0.001500
Maximum	3.938850	1.000000	54.97600	4.389100	0.274071	7.886000
Minimum	-2.911391	0.613100	0.000200	-0.985100	-0.469011	-0.063000
Std. Dev.	1.232310	0.059566	6.735357	0.697834	0.115538	0.860470
Skewness	0.241614	-2.883554	6.465513	3.350324	-1.378106	8.999157
Kurtosis	3.878306	14.56514	48.52819	18.70322	6.628199	81.99417
Jarque-Bera	3.517255	584.5421	7840.097	1020.214	72.66184	22974.07
Probability	0.172281	0.000000	0.000000	0.000000	0.000000	0.000000
Sum	42.29785	79.22580	166.8412	15.58340	0.800160	7.894000

Sum Sq. Dev	126.0428	0.294488	3765.298	40.41868	1.107967	61.45385
Observations	84	84	84	84	84	84

Source: Research Data (Processed)

Model Fit Test

Table 2 presents the overall regression model results.

Table 2. Model Fit Test

Keterangan	Nilai
F-statistic	2,834791
Prob (F-statistic)	0,003919
R-squared	0,302279
Adjusted R-squared	0,217823

Source: Research Data (Processed)

The simultaneous significance test (F-test) was conducted to examine whether the independent variables and interaction terms collectively influence firm value. The results show an F-statistic of 2.834791 with a Prob(F-statistic) of 0.003919, which is below the 0.05 significance level. This indicates that sustainability, capital structure, firm growth, and their interactions with profitability and enterprise risk management simultaneously have a significant effect on firm value. Therefore, the regression model is statistically valid and appropriate for explaining variations in firm value within the technology sector during the 2019–2024 period. The coefficient of determination (R-squared) of 0.302279 indicates that approximately 30.22 percent of the variation in firm value can be explained by the variables included in the model. Meanwhile, the adjusted R-squared of 0.217823 shows that after adjusting for the number of predictors, the model still maintains adequate explanatory power. This suggests that although other factors outside the model contribute to firm value, the selected variables provide meaningful explanatory capacity.

Regression Results and Hypothesis Testing

The estimated regression equation is as follows:

$$PBV = 0,631104 + 1,630419 \text{ SUS} + 0,201021 \text{ DER} + 0,567239 \text{ GROW} - 40,26716 \text{ SUS_ROA} - 0,315832 \text{ DER_ROA} - 2,214139 \text{ GROW_ROA} + 5,195514 \text{ SUS_ERM} + 0,570662 \text{ DER_ERM} + 0,994200 \text{ GROW_ERM} + e$$

Table 3. Regression Results

Variable	Coefficient	Prob.
C	0.631104	0.0000
SUS	1.630419	0.4999
DER	0.201021	0.0067
GROW	0.567239	0.0223
SUS_ROA	-40.26716	0.2640
DER_ROA	-0.315832	0.4376
GROW_ROA	-2.214139	0.4099
SUS_ERM	5.195514	0.4355
DER_ERM	0.570662	0.0296
GROW_ERM	0.994200	0.1868

Source: Research Data (Processed) Discussion

The regression results indicate that sustainability does not have a significant effect on firm value, as reflected by a coefficient of 1.6304 and a probability value of 0.4999, which exceeds the 0.05 significance level. Although the relationship shows a positive direction, it is not statistically meaningful. In contrast, capital structure has a positive and significant effect on

firm value, with a coefficient of 0.2010 and a probability of 0.0067. This finding suggests that leverage contributes positively to market valuation. Similarly, firm growth demonstrates a positive and significant impact on firm value, as indicated by a coefficient of 0.5672 and a probability of 0.0223, implying that expansion performance is positively valued by investors.

Regarding the moderating effects, profitability does not moderate the relationship between sustainability, capital structure, or firm growth and firm value, as all interaction terms show probability values above 0.05. Likewise, enterprise risk management does not moderate the effects of sustainability and firm growth. However, enterprise risk management significantly strengthens the positive relationship between capital structure and firm value, with an interaction probability of 0.0296. This result indicates that leverage is more positively perceived by the market when supported by effective risk management practices.

Overall, firm value in the technology sector is primarily influenced by capital structure and growth, while sustainability and profitability do not demonstrate significant direct or moderating effects during the observed period.

CONCLUSION

This study concludes that sustainability does not significantly affect firm value in technology sector companies during the 2019–2024 period. In contrast, capital structure and firm growth have positive and significant effects on firm value, indicating that financing decisions and expansion performance are key determinants of market valuation.

Profitability does not moderate the relationship between sustainability, capital structure, or firm growth and firm value. Similarly, enterprise risk management does not moderate the effects of sustainability and growth. However, enterprise risk management strengthens the positive effect of capital structure on firm value, suggesting that leverage is more favorably perceived when supported by effective risk management practices.

Overall, firm value in the technology sector is primarily driven by capital structure and growth, with risk management playing a reinforcing role in financing decision.

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