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Determinants of Firm Performance Based on Investment Opportunities and Capital Structure

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Abstract

This research investigates the impact of the Investment Opportunity Set (IOS) and capital structure on the performance of manufacturing firms in Indonesia. It explores how these two factors influence the enhancement of firm performance. A quantitative method was applied, utilizing secondary data sourced from the financial reports of manufacturing companies listed on the Indonesia Stock Exchange (IDX) during the 2019–2023 period, selected through purposive sampling. The data were analyzed using the Partial Least Squares - Structural Equation Modeling (PLS-SEM) approach. The findings reveal that both IOS and capital structure significantly affect firm performance. The study enriches the discourse on agency and signaling theories while offering managerial insights for optimizing capital structure and formulating strategic investment decisions to improve business competitiveness and operational efficiency. Additionally, it emphasizes the necessity of aligning financial policies with potential growth to foster sustainable value for stakeholders. Furthermore, it highlights the importance of aligning financial strategies with growth opportunities to ensure long-term value creation for stakeholders.

Keywords

Capital Structure, Firm Performance, Investment Opportunity Set, Manufacturing.

1. Introduction

Indonesia ranks fourth as the most populous country in the world and is known for its strong economic resilience in facing various crises throughout its history. Over time, Indonesia has experienced four significant economic crises: the domestic economic crisis in the 1960s, the crisis caused by the collapse of global oil prices in the 1980s, the Asian Financial Crisis in 1997–1998, which led to structural reforms, and the Global Financial Crisis about a decade later. Economically, Indonesia is the country with the largest Gross Domestic Product (GDP) in the Southeast Asian region, with a nominal GDP reaching IDR 20,892.4 trillion in 2023 (Central Bureau of Statistics, 2023). Indonesia's economic growth potential is supported by several strategic factors, including the demographic bonus marked by an average population growth of around 1.3% per year during the 2000–2016 period, the acceleration of digital transformation, and various other resources and economic opportunities that are expected to be optimally utilized to drive sustainable economic growth in the future.

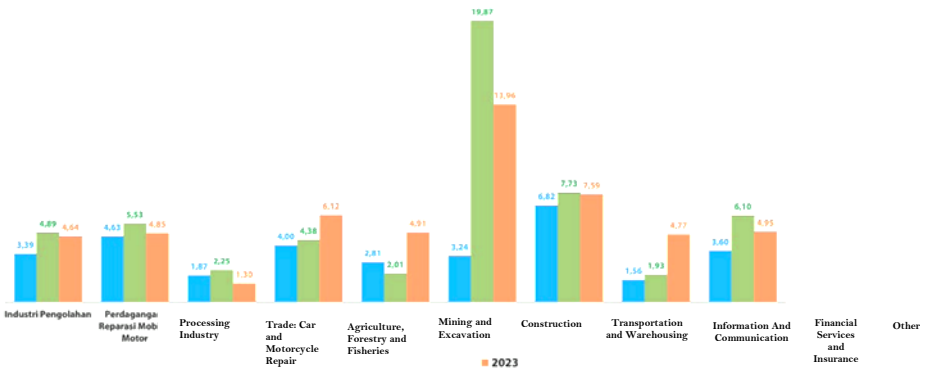

Figure 1. GDP Growth of Several Business Sectors (c-to-c) (percent)

Based on Figure 1, the significant contribution of the manufacturing sector to Indonesia's total national exports, which has continued to increase year by year, cannot be separated from the growth in the number of companies and the improved performance of manufacturing firms in the country, including those that have conducted initial public offerings (IPOs) on the Indonesia Stock Exchange (IDX). However, this substantial export contribution is not in line with the growth rate of the manufacturing sector's Gross Domestic Product (GDP). As shown in Figure 1, in 2022, the manufacturing sector recorded a growth of only 1.5% compared to the previous year, and even experienced a decline of 0.25% in 2023, bringing the growth rate down to 4.64%. This slowdown in growth is believed to be influenced by various factors, both from the external environment and the internal conditions of the companies themselves.

Figure 2. Industry Confidence Index (IKI) Score 2023

Based on Figure 2, it can be observed that the Industrial Confidence Index (ICI) in 2023 experienced fluctuations with a downward trend, where a decline was recorded in eight out of the twelve months of the year, including the final month. The ICI is an indicator that reflects the level of confidence or optimism among manufacturing industry players regarding the general economic condition. In addition, the ICI is also used as a tool to describe the current state of the manufacturing industry and to project business prospects for the next six months in Indonesia.

Referring to the signaling theory proposed by Ross Jr. et al. (1997) and Ramli et al. (2019) companies have better access to information regarding their internal conditions and are responsible for conveying this information to external parties to influence market perceptions and enhance stock value. The information disclosed will be analyzed and interpreted by investors and potential investors, who will then perceive it as either a positive or negative signal, thereby affecting their reactions in the capital market (Asthana, 2014; Supriono, 2022; Husnah et al., 2023; Tambunan & Samaria, 2025). A consistent decline in the Manufacturing Industry Confidence Index (ICI) can serve as a negative signal to investors regarding the prospects of the manufacturing industry, ultimately leading to a decline in market perception and overall company performance (Smith Jr & Watts, 1992; Sofat & Singh, 2017; Sharma & Bakshi, 2019). The phenomenon of declining Manufacturing Industry Confidence Index (IKI) is an external factor that can be managed by companies. Based on several studies, there are various factors that can influence company performance, including the implementation of good corporate governance (Vu et al., 2018; Zhou et al., 2018), Investment Opportunity Set (IOS), capital structure, corporate social responsibility efforts, and several other factors (Tarek Al-Kayed et al., 2014; Sun et al., 2014; Muniandy & Hillier, 2015; Chadha & Sharma, 2015; Galant & Cadez, 2017). These factors have been empirically identified through research and have been shown to improve company performance. According to signaling theory, positive company disclosures influence investor response. The combination of current assets, profitable investment opportunities (IOS), and capital structure decisions helps shape investor perceptions and reflects strategic efforts to improve firm performance (Al-Najjar & Hussainey, 2011; Afonso et al., 2014; Alipour et al., 2015). This research investigates the impact of the Investment Opportunity Set (IOS) and capital structure on the performance of manufacturing firms in Indonesia. It explores how these two factors influence the enhancement of firm performance.

2. Literature Review and Hypothesis Development

Agency theory describes the relationship between principals (owners) and agents (managers), which can lead to conflicts due to differing interests and information asymmetry, where agents possess more information than principals (Jensen & Meckling, 1976; Bates, 2008; Scott, 2015). This may result in moral hazard and

adverse selection, negatively affecting investment decisions and efficiency (Feng, 2005; Ehie & Olibe, 2010; Harada & Nguyen, 2011; Felício et al., 2014; Felimban et al., 2018). Signaling theory suggests that management communicates information to investors through public disclosures such as timely financial reports to reduce information asymmetry (Spence, 1973; Cho, 1998). Positive signals, like promising investment opportunities, can increase investor interest and enhance firm value (Aaker & Jacobson, 1987; Bhushan, 1989; Martani et al., 2021; Ben Fatma & Chouaibi, 2023). The Resource-Based View (RBV) emphasizes internal resources and unique capabilities as key to achieving competitive advantage and improving performance. Larger firms typically possess rare, inimitable assets that help manage risks and seize market opportunities.

According to Trade-off Theory, firms aim to balance the benefits and risks of debt. An optimal capital structure improves performance by leveraging tax advantages while minimizing bankruptcy risk. Previous studies support these theories. Kuncová et al. (2016) found that larger firms show better economic performance. Previous studies by Galant and Cadez (2017) and Huang et al. (2018) showed mixed findings regarding factors that influence corporate financial performance. Harris et al. (2019) identified inconsistencies in the measurement of Corporate Social Responsibility (CSR) and Corporate Financial Performance (CFP), indicating the need for a more standardized measurement approach. On the other hand, studies by Iturriaga and Crisóstomo (2010) and Al-Kayed et al. (2014) showed that a higher equity ratio can increase the profitability of Islamic banks, indicating the importance of a healthy capital structure. Matahari et al. (2014) highlighted that regulations such as the Sarbanes-Oxley Act (SOX) can have a negative impact on board independence, while Muniandy and Hiler (2014) emphasized that board independence plays an important role in corporate governance. Hanif et al. (2022) confirmed that available investment opportunities can improve the quality of corporate earnings.

H1: Investment opportunity set has a significant effects firm performance.
H2: Capital structure has a significant effect on firm performance.

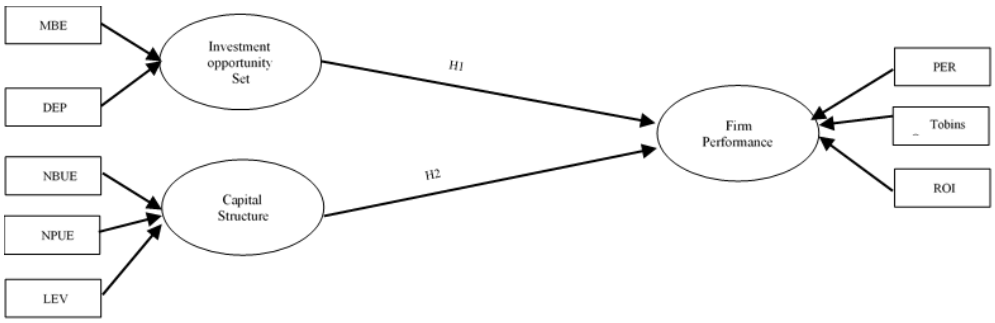

Figure 3. Research Matrix Diagram Model

Figure 3 illustrates the research framework that examines the direct influence of Investment Opportunity Set (IOS) and Capital Structure on Firm Performance. H1 states that IOS, which reflects the company's potential to grow through productive investment, has a significant effect on firm performance. The greater the investment opportunity, the greater the likelihood of increasing profits and firm value. H2 states that capital structure, which reflects the proportion of debt and equity in corporate financing, also has a significant effect on firm performance. An optimal capital structure can improve the financial efficiency and profitability of the company.

3. Methods

This research adopts a descriptive approach with a quantitative design. The analysis focuses on manufacturing companies listed on the Indonesia Stock Exchange (IDX) that became publicly traded between 2020 and 2023. The study population includes all manufacturing firms that went public on the IDX during this period. A purposive sampling method is applied, based on specific criteria: (1) manufacturing companies that remained listed on the IDX continuously from 2020 to 2023, (2) firms that consistently published their financial statements throughout the research period, and (3) companies that reported positive net income each year from 2020 to 2023.

Table 1. Operational Definitions

Variable	Variable Definition	Indicator	Source
Investment Opportunity Set (IOS)	The Investment Opportunity Set (IOS) refers to a company's physical assets or resources, as well as its capacity to achieve ongoing growth through investment in a range of profitable opportunities.	Market to book value of equity (MVEBVE)	Myers (1977), Kallapur and Trombley (1999), Chang et al. (2018), and Gaver andGaver (1993)
		Earning to price ratio (EPR)	
Capital Structure	Capital structure is a company's funding policy related to the mix of debt and equity of the company.	The Ratio of Total Debt Book Value to Total Equity (*Nilai Buku Total Utang terhadap Total Ekuitas*/NBUE)	Al-Najjar and Kilincarslan (2018) and Gaver and Gaver (1993)
		The Ratio of Total Debt Market Value to Total Equity (*Nilai Pasar Total Utang terhadap Total Ekuitas*/NPUE)	
		Leverage (LEV)	
		Sales	
Firm Performance	Firm performance is inherently linked to how performance is measured and assessed, reflecting the outcomes accomplished by management in utilizing the company's assets efficiently within a specific timeframe.	Price-Earnings Ratio (PER)	Melitz and Ottaviano (2008), Sheikh and Wang (2013), and Leksono and Vhalery (2018)
		Tobin's Q	
		Return On Investment (ROI)	

This study employed Structural Equation Modeling with the Partial Least Squares (PLS-SEM) approach for data analysis. The analysis was carried out in two main stages: descriptive analysis and inferential statistical analysis. Descriptive analysis served to summarize the dataset using statistical measures such as minimum, maximum, average (mean), and standard deviation (Sugiyono, 2013; Uma & Roger, 2017). In contrast, inferential statistical analysis was conducted using the SmartPLS software, which is well-suited for processing both formative and reflective measurement models, as well as accommodating various types of measurement scales within a single analytical framework (Dasilas & Papasyriopoulos, 2015; Detthamrong et al., 2017; Hair Jr et al., 2021).

Hair et al. (2021) found the SEM model in this study consists of two parts: the inner model, showing relationships between latent constructs, and the outer model, linking constructs to their indicators. The testing involves three steps: assessing convergent validity, checking indicator collinearity, and evaluating the significance of formative indicators. Inner model analysis, or structural model evaluation, validates the proposed framework based on theory and prior research. Key indicators used include the coefficient of determination (R^2), predictive relevance (Q^2), and hypothesis testing.

4. Results

The results of this study highlight that Indonesia's strong macroeconomic position reflected in its large population, high GDP, and export-oriented manufacturing sector does not directly translate into proportional growth in manufacturing GDP. Despite the increasing contribution of manufacturing to national exports, sectoral GDP growth slowed to 1.5% in 2022 and further declined by 0.25% in 2023, indicating structural challenges within the industry. The decline in the Industrial Confidence Index (ICI) throughout 2023, which showed decreases in eight of twelve months, reinforces the perception of weakening industry optimism. From a signaling theory perspective, this downward trend in ICI sends negative signals to investors, potentially impacting market perceptions and company performance. However, the findings also suggest that internal factors such as good corporate governance, capital structure, and investment opportunity set (IOS) can significantly influence firm performance.

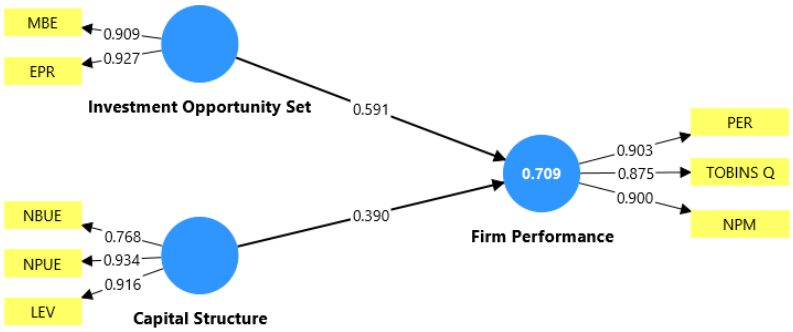

Figure 4. Outer Model Test Results

Based on Figure 4 the diagram illustrates a PLS-SEM model showing the effects of Investment Opportunity Set (IOS) and Capital Structure on Firm Performance. IOS is measured by MBE and EPR, with strong loadings of 0.909 and 0.927, respectively, and has a path coefficient of 0.591 to Firm Performance. Capital Structure, measured by NBUE (0.768), NPUE (0.934), and LEV (0.916), shows a positive effect on Firm Performance with a coefficient of 0.390. Firm Performance is reflected by PER (0.903), Tobin's Q (0.875), and NPM (0.900), with an R^2 value of 0.709, indicating that 70.9% of its variance is explained by the two predictors. Hair et al. (2021), explain that when a study uses a formative construct type, the model testing (outer model) must consider both the VIF and Outer Weight.

Table 2. Measurement Model (Outer Model)

Variable and Indicators	Multicollinearity	Outer Weight	
	VIF	Original sample	P values
EPR -> Investment Opportunity Set	1.896	0.573	0.000
MBE -> Investment Opportunity Set	1.896	0.516	0.000
LEV -> Capital Structure	2.786	0.459	0.000
NBUE -> Capital Structure	1.676	0.285	0.000
NPUE -> Capital Structure	3.409	0.386	0.000
NPM -> Firm Performance	2.510	0.366	0.000
PER -> Firm Performance	2.329	0.411	0.000
TOBINS Q -> Firm Performance	2.220	0.343	0.000

Based on Table 2, the assessment of a formative measurement model is based on checking for indicator collinearity, which is measured using the variance inflation factor (VIF), and evaluating the statistical significance of the indicators' outer weights (Hair et al., 2021). A VIF score of 5 or above signals a serious multicollinearity issue among the indicators within a formatively measured construct. Additionally, outer weights are deemed statistically significant if their p-values are below 0.05.

Table 3. Outer Loading Measurements

Variables and Indicators	Outer Loading	
	Original Sample	P values
EPR -> Investment Opportunity Set	0.927	0.000
MBE -> Investment Opportunity Set	0.909	0.000
LEV -> Capital Structure	0.916	0.000
NBUE -> Capital Structure	0.768	0.000
NPUE -> Capital Structure	0.934	0.000
NPM -> Firm Performance	0.900	0.000
PER -> Firm Performance	0.903	0.000
TOBINS Q -> Firm Performance	0.875	0.000

Table 3 presents the outer loadings and significance levels (p-values) for the indicators of each construct in the model. All indicators show high outer loading values (ranging from 0.768 to 0.934), indicating strong contributions to their respective latent variables—Investment Opportunity Set, Capital Structure, and Firm Performance. Additionally, all p-values are 0.000, confirming that each indicator is statistically significant at the 1% level and valid in measuring its corresponding construct. Based on the test results, it can be concluded that if the outer loading has a p-value greater than or equal to 0.5, the indicator in this study is retained.

As stated by Hair (2022), PLS-SEM does not require the assumption of normal data distribution. Instead, it uses a nonparametric bootstrapping technique to assess the significance of coefficient estimates (Chernick, 2008; Davison & Hinkley, 1997; Efron & Tibshirani, 1986). In this approach, numerous bootstrap samples are drawn from the original dataset to generate the sampling distribution. The bootstrapping process involves several key steps, including the R Square test, evaluation of Predictive Relevance (Q^2), and conducting hypothesis testing. R-square value for Firm Performance is 0.709, indicating that 70.9% of the variance in Firm Performance can be explained by the independent variables in the model. The adjusted R-square is slightly lower at 0.698, which accounts for the number of predictors and sample size. Additionally, the Q-square value of 0.689 suggests that the model has strong predictive relevance, as it is well above the threshold of 0.35.

The coefficient of determination (R Square) measures how well an endogenous variable is explained by exogenous variables and indicates model fit quality. It reflects the proportion of variance in the dependent variable attributable to independent variables (Hair Jr et al., 2021). An R Square value close to 0.70 suggests a model with potentially strong, moderate, or weak explanatory power depending on context (Sarstedt et al., 2021). In this study, an R Square of 70.9% implies that Firm Performance is largely influenced by IOS and Capital Structure. After R^2 evaluation, the Q^2 value was assessed to determine the model's predictive accuracy. A Q^2 value above zero indicates predictive relevance, while a value below zero suggests poor predictive capability. Based on Ghozali and Latan (2015), Q^2 thresholds are 0.35 (strong), 0.15 (moderate), and 0.02 (weak). The Q^2 value of 0.689 in this study indicates strong predictive relevance for Firm Performance.

Table 4. Hypothesis Testing

Variable	Direct Effect	T Statistics	P Values
Investment Opportunity Set -> Firm Performance	0.591	6.943	0.000
Capital Structure -> Firm Size	0.390	4.070	0.000

Table 4 presents the results of the direct effect analysis between variables. The Investment Opportunity Set has a positive and significant direct effect on Firm Performance, with a path coefficient of 0.591, a T-statistic of 6.943, and a p-value of 0.000, indicating strong statistical significance. Similarly, Capital Structure has a positive and significant effect on Firm Size, with a coefficient of 0.390, a T-statistic of 4.070, and a p-value of 0.000. Both relationships are accepted, confirming that the hypothesized paths in the structural model are statistically supported.

These findings align with Agency Theory, which suggests that shareholders expect management to allocate investments efficiently to maximize firm value and minimize agency conflicts. Additionally, Signaling Theory is relevant in this context, as firms with high Investment Opportunity Sets (IOS) can convey positive signals to investors, indicating the presence of well-defined strategies for investment and growth. This, in turn, can enhance the company's appeal in the capital market. The results also support the study by Hanif et al. (2022), which demonstrated that investment opportunities significantly influence the quality of corporate earnings. Although their research focused on earnings quality, the findings imply that firms with strong IOS typically exhibit superior financial performance, thereby boosting firm value and market competitiveness.

These findings are in line with the Trade-off Theory, which emphasizes the need for companies to strike a balance between the benefits of debt, such as tax advantages, and the potential costs associated with financial distress or bankruptcy. Firms that effectively manage their capital structure can enhance financial performance by maximizing tax benefits while minimizing the risks linked to high debt levels. Additionally, the results support the Agency Theory perspective, which suggests that the use of debt can help mitigate agency conflicts between shareholders and management. The obligation to pay interest and principal encourages managers to be more disciplined in managing capital, thereby enhancing operational efficiency and company performance. An optimal capital structure can reduce opportunistic behavior by managers and ensure that available funds are used for the benefit of shareholders rather than personal management interests.

The results show that capital structure has a positive and significant effect on firm performance. However, this contrasts with Salim and Yadav (2012), who found a negative relationship in Malaysia, possibly due to differences in industry, regulation, or macroeconomic conditions. Afridi et al. (2022) also found no significant effect on firm value, though their focus was on market value, unlike this

study, which emphasizes operational performance. These discrepancies may stem from differences in measurement and methodology. The findings suggest that optimizing capital structure can improve financial efficiency and competitiveness. Properly managed debt can enhance ROI and Tobin's Q, but excessive leverage must be avoided to prevent financial risks. This study contributes by confirming that a well-planned capital structure is vital for the competitiveness of manufacturing firms.

5. Discussion

Indonesia, as the most populous country in Southeast Asia and the fourth in the world, has shown remarkable economic resilience, with a GDP of IDR 20,892.4 trillion in 2023 and a history of success in weathering various economic crises. According to the Resource-Based View (RBV), this resilience is driven by the company's unique internal strengths and capabilities—factors that are crucial to maintaining competitiveness and performance. The Industry Confidence Index (IKI) data shows a downward trend in 2023, reflecting external pressures that affect investor sentiment. Spence (1973) and Cho (1998) signaling theory explains that the index functions as an indicator that is perceived by investors as a signal of growth or decline, depending on the disclosure and projection of the company's performance. This opinion is also supported by Asthana (2014) who said, a continuously declining ICI can act as a negative signal, reducing investor confidence and weakening the company's valuation.

Based on a study conducted by Sun et al. (2014) and Muniandy and Hillier (2015), they said Empirical studies underline that internal factors such as Investment Opportunity Set (IOS), capital structure, and corporate governance are very important in mitigating external shocks. in line with the thinking of Bhushan (1989), Martani et al. (2021), and Ben Fatma and Chouaibi (2023) that through a signaling lens, companies with high IOS can project strong growth prospects, thereby attract investors and improve company performance. According to Myers (1984) and Moradi and Paulet (2019) Trade-off Theory argues that companies balance debt and equity to optimize value, supporting the finding that capital structure has a significant impact on performance. this is as conveyed by Chadha and Sharma (2015) and Al-Kayed et al. (2014) that Evidence from emerging markets, including Islamic banks, shows that optimal equity levels increase profitability, especially when companies manage their capital wisely.

Regarding the agency theory of Miller & Modigliani (1963) Jensen and Meckling (1976) and Scott (2015) they explained that agency theory emphasizes the conflict between owners and managers, which is often caused by information asymmetry. Ehie and Olibe (2010) and Sun et al. (2014) also support this opinion, that misalignment can be reduced through monitoring mechanisms, appropriate incentive systems, and transparency in financial reporting. Corporate governance reforms such as SOX, although implemented outside Indonesia, show how institutional structures affect investment opportunities and supervision. Galant and Cadez (2017) stated that although Corporate Social Responsibility (CSR) is widely considered an element that can increase company value, its measurement methods still show inconsistencies. However, they also emphasized that CSR practices can have a positive impact on company performance if strategically integrated with corporate governance and comprehensive financial policies. Vu et al. (2018) and Zhou et al. (2018) added that factors such as board independence, adequate audit quality, and transparent disclosure of information have been shown to increase market confidence and, ultimately, company value.

Kuncová et al. (2016) suggest that larger companies perform better due to superior resources and capabilities in handling internal and external pressures. Hanif et al. (2022) show that promising investment opportunities are positively linked to

earnings quality, reflecting innovation strength and competitiveness in manufacturing. Myers (1984), Spence (1973), and Jensen and Meckling (1976) provide a strong theoretical basis through the integration of Resource-Based View, Trade-off, Signaling, and Agency theories to explain firm performance. In Indonesia, data from the Central Statistics Agency (2023) and the Ministry of Industry (2023) highlight the importance of interpreting macroeconomic indicators such as GDP and the Industrial Confidence Index (ICI) alongside internal company strategies to assess manufacturing firms' value and competitiveness accurately.

6. Conclusion

This study highlights Indonesia's strong macroeconomic foundation and the pivotal role of the manufacturing sector in sustaining economic growth. Despite its growing export contribution and position as the country with the largest nominal GDP in Southeast Asia, the sector's GDP growth remains sluggish, with a decline to 4.64% in 2023. Furthermore, the Industrial Confidence Index (ICI) showed a downward trend across most months in 2023, indicating weakening optimism among manufacturing industry players. Such trends serve as signals that can influence investor perceptions, potentially affecting firm valuation and overall performance. Practical implications from these findings underscore the importance for manufacturing firms to actively manage both external signals and internal strategies. Companies should enhance transparency, strengthen governance practices, pursue profitable investment opportunities, and optimize capital structure to build investor trust and improve long-term performance. These efforts can help mitigate the adverse effects of macroeconomic uncertainty and declining industry sentiment.

Theoretical implications are drawn from the integration of multiple perspectives—signaling theory, agency theory, trade-off theory, and the resource-based view—which together offer a comprehensive understanding of how firms navigate the challenges posed by economic fluctuations and sectoral pressures. These frameworks help explain how internal capabilities and strategic financial decisions can shape firm outcomes. Limitations of this study include its dependence on macro-level data and conceptual analysis without empirical validation at the firm level. Therefore, future research should consider collecting primary data from manufacturing companies to examine how internal strategies specifically mediate the impact of macroeconomic signals like the ICI. Further investigation into sectoral variations, digital transformation, and sustainability initiatives may also enrich understanding of what drives firm competitiveness and resilience in a dynamic economic environment.

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