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Firm Size and Leverage on Firm Value in the Technology Sector Listed on the Indonesia Stock Exchange

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***ABSTRACT*:** This study aims to analyze the influence of firm size and leverage on firm value in technology sector companies listed on the Indonesia Stock Exchange (IDX). Using data from companies listed on the IDX from 2021 to 2023, this research applies statistical methods to examine the direct effects of firm size and leverage on firm value. This research employs a quantitative method with panel data analysis, applying the Partial Least Square model to test the hypotheses using SmartPLS 4.The findings indicate that firm size has a significantly positive effect on firm value. In contrast, leverage does not significantly affect the firm value. These results enhance understanding of the dynamics between firm size, leverage, and firm value. This study provides valuable insights for investors and corporate managers in the technology sector, emphasizing not only the importance of managing firm size and leverage to enhance firm value but also the consideration of other variables and factors.

Keywords -*Firm Size, Leverage, Firm Value, Technology Sector*.

I. INTRODUCTION

The growth of the technology sector in Indonesia has reached a remarkable level in recent years. The number of startups in the country increased significantly from 1,700 in 2020 to 2,247 in 2021, positioning Indonesia as the ASEAN leader in startups with a total of 2,562 startups (Annur, 2024). This growth is largely driven by an increase in internet users, reaching 79.5% in 2024 (Finaka et al., 2024). According to data from the Indonesia Stock Exchange (2024), the number of technology companies listed on the IDX saw a significant rise from 2021 to 2024, creating a conducive environment for innovation and growth in the Indonesian tech industry.

Aside from the growth of the technology sector, firm value has become a primary concern for investors. Firm value also influences public and market perceptions of a company. Companies with high value tend to attract more attention and trust from stakeholders, including investors, creditors, and potential business partners (Friendty& Anita, 2022). This opens doors for greater collaboration and investment opportunities, strengthening the company's position in the market and boosting its competitiveness.Since it is crucial for companies to continuously monitor and enhance their value by effectively managing operational performance, financials, and reputation. By doing so, firms can leverage their value as a strategic tool to achieve long-term goals and provide additional value to shareholders and stakeholders alike.

Table 1. Historical Performance IDXTECHNO

INDEX	Year						
	2018	2019	2020	2021	2022	2023	2024
IDXTECHNO	31,7%	-3,1%	-12,8%	707,6%	-42,6%	-14,1%	-6,9%
JCI	4,2%	1,7%	-5,1%	10,1%	4,1%	6,2%	-0,9%
LQ45	4,8%	3,2%	-7,8%	-0,4%	0,6%	3,6%	0,4%

Source: Indonesia Stock Exchange

The fluctuation in technology stocks listed on the IDX during 2021–2023 reflects the dynamic nature of the market. Table 1 demonstrates the historical performance of IDXTECHNO, showing a significant peak in

2021, with an increase of 707.6% driven by higher internet and smartphone usage, behavioral shifts due to the pandemic, and numerous initial public offerings (IPOs).

Despite its decline in early 2022, caused by global economic factors such as rising interest rates, high inflation, and recession fears, IDXTECHNO showed signs of recovery in 2023. Factors like eased COVID-19 policies, improved tech firm performance, and renewed investor interest contributed to the market's positive trend, even though it continued to face challenges into early 2024.

High firm value is an indicator of potential returns for investors, serving as a signal of a company's capacity to generate significant profits. Several factors influence firm value, including firm size and leverage. Firm size, measured by total assets or total revenue, indicates a company's potential for growth. Leverage, represented by the debt-to-equity ratio, can enhance firm value if managed effectively.

Previous studies present varying findings regarding the direct influence of firm size on firm value. Oktaviani (2020) concluded that firm size has no significant impact, while Kampo et al. (2024) found a negative effect. Conversely, Zam-Zam et al. (2023) demonstrated a positive relationship. These inconsistencies highlight the need for further investigation, particularly within the technology sector.

Similarly, leverage studies yield mixed results. Apriliani et al. (2024) found a negative effect, Febianto&Susanti (2024) reported a positive impact, and Yulianson&Hastuti (2024) stated no significant relationship. These contradictions underline a research gap that warrants further exploration, particularly for technology companies listed on the IDX.

This study aims to bridge these gaps on firm value in the technology sector so this research can provides deeper insights into the mechanisms underlying these relationships, contributing significantly to the literature and offering practical implications for financial management in the Indonesian tech industry.

II. LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

Agency Theory

Agency Theory, also known as Contracting Theory, is considered one of the most significant research needs in accounting today. Research on agency theory can be conducted deductively or inductively and represents a specific case of behavioral research, even though agency theory is rooted in finance and economics rather than psychology and sociology. Agency is defined as specific behaviors or activities performed by individuals, guided by the rules and context in which the interaction occurs (Chandrawati, 2015).

According to Jensen (2012), agency theory is a framework that explains the contextual relationship between principals and agents. This relationship can occur between two or more individuals, a group, or an organization. The principal is an entity that has the authority to make decisions affecting the company's future, while the agent is entrusted with the responsibility of carrying out tasks assigned by the principal.

According to Supriyono (2018), the concept of agency theory refers to the contractual relationship between the principal and the agent. In this relationship, the principal grants authority to the agent to make decisions in the best interest of the principal, prioritizing objectives such as optimizing the company's profits. The aim is to minimize burdens, including tax burdens, through tax avoidance strategies.

Signalling Theory

Signaling Theory was first introduced by Spence (1973). This theory explains that the sender, who possesses the information, provides signals or cues in the form of information that reflects the condition of a company, which is beneficial for the recipient, namely investors. According to Brigham & Houston (2019), signaling theory is a concept that describes how company management provides indications to investors about their views on the company's future prospects.

According to Supriadi (2020), signaling theory analyzes the fluctuations in the price of securities in the market, which is an important aspect that can influence investor decisions. This theory posits that changes in securities prices can signal information to investors about a company's performance or overall market conditions. For example, an increase in stock prices might signal that the company is experiencing growth or has promising prospects, while a decline in stock prices might be interpreted as a sign of internal or external problems.

Based on expert definitions of signaling theory, it can be concluded that signaling theory is a conceptual framework used to analyze information that serves as a signal for investors in making investment decisions. Any information related to a company's stock condition is understood to have a significant impact on the decisions of traders or investors as the recipients of these signals.

Firm Size on Firm Value

According to Agency Theory by Jensen &Meckling (1976), larger companies incur higher agency costs. Additionally, large companies are at risk of bankruptcy if not managed properly. Firm size is a ratio used to measure the scale of a company, indicated by its total assets. Thus, the larger a company, the lower its risk. This is because large companies have better control over market conditions, enabling them to cope with economic competition more effectively.

Previous studies also support this hypothesis. According to Chabachib et al. (2019), Kurniawansyah (2020), and Aditya et al. (2021), firm size has a positive significant effect on firm value. From this explanation and previous research findings, the hypothesis can be formulated that firm size positively influences firm value. This suggests that the larger a company, the greater the tendency for its value to increase, especially if it efficiently manages its assets and successfully minimizes the risk of bankruptcy.

H_1: Firm size has a significant positive effect on firm value.

Leverage on Firm Value

According to signaling theory (Spence, 1973), corporate leverage, which reflects a higher proportion of debt usage compared to equity, has the potential to generate greater profits for shareholders compared to companies that rely solely on equity. This is because higher proportional debt usage can signal to investors the company's ability to generate larger profits. Conversely, companies with lower debt usage proportions tend to send a different signal to investors.

Previous studies, such as Pratama&Wiksuana (2021) indicates that leverage influences firm value. Leverage, as a financing policy closely related to corporate decisions in funding its operations, reflects the company's responsibility for its debt obligations, including interest and principal repayments. Research by Pratt et al. (2023) shows that leverage also positively affects firm value.

Thus, based on the explanation and findings from previous studies, the hypothesis can be formulated that leverage positively influences firm value. This underscores the importance of understanding the impact of leverage policies on firm value in the making of investment and financial management decisions.

H_2: Leverage has a significant positive effect on firm value.

III. RESEARCH METHOD

This study employs a causal associative research design (Sugiyono, 2021) with a quantitative approach. The quantitative approach is applied by utilizing statistical formulas to help analyze data collected through data gathering. This approach allows researchers to understand and evaluate the relationships between variables in a more detailed and objective manner.

Since the technology sector index was officially established in 2021, the population in this study includes all companies listed in the technology sector index on the Indonesia Stock Exchange during the 2021-2023 period. The sample selection in this study uses the purposive sampling method, where specific characteristics serve as key criteria for sample selection, while entities that do not meet these characteristics are excluded from the sample.

This study uses panel data, which combines cross-sectional and time-series data, as it involves multiple companies over a specific time period to observe developments or changes from one year to the next. This approach enables the researcher to understand long-term trends and patterns that may occur across several companies simultaneously.

In this study, data analysis is conducted using Partial Least Squares (PLS). Partial Least Squares (PLS) is a component-based or variance-based model of Structural Equation Modeling (SEM).

Table 2. Operational Variables

Variable	Formula	Source
Firm Size (X_1)	Ln Sales = Ln of Total Sales	Riadi (2020)
Leverage (X_2)	DER = (Total Debt) / (Total Equity) × 100%	Kasmir (2018)
Firm Value (Y)	PBV = (Stock Price per Share) / (Book Value per Share)	Harmono (2017)

Source : Processed Data (2024)

IV. RESULT AND DISCUSSION

Table 3. Path Coefficient

Hipotesis	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values
Ukuran Perusahaan (X1) → Nilai Perusahaan (Y)	0.311	0.299	0.133	2.343	0.020
Leverage (X2)→ Nilai Perusahaan (Y)	0.127	0.175	0.086	1.480	0.139

Source : SmartPLS 4 Output, 2024

Based on the table presented, the results of the direct effect test are interpreted as follows:

1. Firm Size (X_1) on Firm Value (Y):
   Statistical testing results show that the t-statistic value (2.343) is greater than the t-table value (1.67), and the p-value (0.02) is smaller than 0.05. This indicates that there is a significant positive effect of firm size (X_1) on firm value (Y). Hypothesis 1 is proven.
2. Leverage (X_2) on Firm Value (Y):
   Statistical testing results show that the t-statistic value (1.48) is smaller than the t-table value (1.67), and the p-value (0.139) is greater than 0.05. This indicates that there is no significant positive effect of leverage (X_2) on firm value (Y). Hypothesis 2 is not proven.

Discussion

The statistical test results show that firm size (X_1) has a significant positive effect on firm value (Y). Thus, the first hypothesis is proven. These findings indicate that the larger the firm size, the higher the company's market value. According to Signal Theory by Spence (1973), a larger firm size sends a positive signal to investors about the company's stability and prospects. Investors tend to view companies with substantial assets as entities more capable of surviving market dynamics and managing risks effectively, which ultimately enhances market perception of the company's value.

Previous studies support these findings. Research by Kurniawansyah (2020) shows that larger firms are often valued higher by the market because they are considered to have stronger industry positions and lower risks compared to smaller companies. Atiningsih&Izzaty (2021) found that firm size is positively related to firm value in publicly listed companies in Indonesia because investors see size as an indicator of credibility and growth potential. Additionally, research by Zam-Zam et al. (2023) emphasized that larger companies are more capable of attracting investments with lower capital costs, contributing to increased firm value.

The statistical test results also show that leverage (X_2) does not have a significant positive effect on firm value (Y). Thus, the second hypothesis is not proven. This means that an increase in leverage does not directly enhance firm value in the technology sector listed on the Indonesia Stock Exchange during the 2021–2023 period. According to Pecking Order Theory by Myers &Majluf (1984), companies tend to prefer internal funding sources over external ones, as using debt can increase financial risk. In the technology sector, which requires continuous innovation, the risks associated with debt obligations can hinder operational flexibility, ultimately affecting market perceptions of firm value.

Some previous studies support these findings.Saputri&Bahri (2021) found that companies relying heavily on debt are often perceived negatively by the market, especially if their operating cash flows are unstable. Research by D. Oktaviani et al. (2024) shows that high leverage can reduce firm value because it raises investor concerns about bankruptcy risks. Similarly, Anita et al. (2023) confirmed that the relationship between leverage and firm value is insignificant, particularly in sectors with high uncertainty levels, such as technology.

The practical implications of these findings suggest that technology companies should be cautious in using debt for financing. Since this industry requires flexibility and rapid innovation, managers should prioritize funding through internal capital or equity to avoid the burden of debt obligations that could diminish the company's value in the eyes of investors. From a theoretical perspective, this research contributes to the literature on leverage and firm value, particularly in the context of Indonesia's technology sector. These findings highlight that leverage is not a primary factor in determining firm value in the technology sector. Future studies could explore the role of innovation or cash flow as mediating variables in the relationship between leverage and firm value.

V. CONCLUSION

Firm Size (X_1) has a significant positive effect on Firm Value (Y). Larger companies are valued higher by the market as they are perceived to have better stability and long-term prospects.Leverage (X_2) does not have a significant effect on Firm Value (Y). In the technology sector, investors prioritize innovation and long-term growth over debt usage, as high financial risk can reduce a company's attractiveness to investors.

Contribution and Implications

This study's findings are still away from perfect due to highfluctuatefinancial data and a short observation period. Future researchers are encouraged to enhance the dataset, include additional variables, or conduct comparative studies between technology companies in Indonesia and those in other countries to understand best practices and successful strategies in various market contexts. The results of this study open opportunities for further research to explore other variables, such as innovation intensity, R&D spending, or market growth rates, which can provide additional insights into the factors influencing firm value in the technology sector.

Regarding the Firm Size variable, technology companies are advised to expand strategic assets, such as digital infrastructure and human resources, while ensuring asset efficiency through optimization and strategic acquisitions. For the Leverage variable, companies should minimize dependence on debt by prioritizing internal funding or equity and using debt only for low-risk projects. For Firm Value, creating long-term value should be achieved through innovation, market expansion, branding, and good governance.

The finding that leverage is not significant to firm value highlights the need for cautious funding policies in the technology sector. Companies should carefully consider the financial risks associated with debt usage. Internal funding or equity strategies may be more suitable to support the flexibility and innovation required to navigate the dynamics of the technology industry. This approach aligns with investor preferences, which favor companies with lower financial risk.

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