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The Effect of Growth Opportunity, Leverage, Firm Size on Hedging Decisions

Pengaruh *Growth Opportunity, Leverage, Firm Size terhadap Keputusan Hedging*

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ABSTRACT
Risk management in investment portfolios focuses on hedging strategies and the use of derivative instruments. In the context of international trade and unpredictable market fluctuations, risk management becomes a crucial aspect in maintaining the stability and sustainability of investments. This study explains the various types of risks faced by investors, including market risk, interest rate risk, currency risk, and credit risk. Hedging strategies, which aim to reduce potential losses without sacrificing profit opportunities, are implemented through derivative instruments such as futures contracts, options, and swaps. Through quantitative analysis, this article provides insights into the effectiveness of using derivative instruments to protect portfolio value. These findings are expected to offer practical recommendations for companies and investors in managing risks and enhance understanding of the importance of hedging strategies in achieving optimal investment outcomes.
Keywords*: Risk Management, Investment Portfolio, Hedging Strategies, Derivative Instruments*

ABSTRAK
Manajemen risiko dalam portofolio investasi dengan fokus pada strategi hedging dan penggunaan instrumen derivatif. Dalam konteks perdagangan internasional dan fluktuasi pasar yang tidak terduga, manajemen risiko menjadi aspek krusial untuk menjaga stabilitas dan keberlanjutan investasi. Penelitian ini menjelaskan berbagai jenis risiko yang dihadapi oleh investor, termasuk risiko pasar, risiko suku bunga, risiko mata uang, dan risiko kredit. Strategi hedging, yang bertujuan untuk mengurangi potensi kerugian tanpa mengorbankan peluang keuntungan, diimplementasikan melalui instrumen derivatif seperti kontrak berjangka, opsi, dan swap. Melalui analisis kuantitatif, artikel ini memberikan wawasan tentang efektivitas penggunaan instrumen derivatif dalam melindungi nilai portofolio. Temuan ini diharapkan dapat memberikan rekomendasi praktis bagi perusahaan dan investor dalam mengelola risiko, serta meningkatkan pemahaman tentang pentingnya strategi hedging dalam mencapai hasil investasi yang optimal.
Keywords : Manajemen Risiko, Portofolio Investasi, Strategi Hedging, Instrumen Derivatif

1. Introduction

Risk management in investment portfolios is a critical aspect of maintaining stability and ensuring sustainable investment growth. Investors face various types of risks, including market risk, interest rate risk, currency risk, and credit risk. As such, risk management strategies have become a key element in optimizing portfolio returns while maintaining an acceptable level of risk. In this context, hedging strategies and the use of derivative instruments have become widely used tools to protect the value of portfolios against unexpected market fluctuations (Agustina & Nugroho, 2023; Hasanah, 2021).

Hedging is a strategy employed by investors or companies to mitigate risks associated with future price movements of assets. The primary goal of hedging is to safeguard the value of

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investments from potential losses without entirely giving up the opportunity for gains. Derivative instruments, such as futures contracts, options, and swaps, are commonly used in implementing hedging strategies. These instruments enable investors to lock in the prices of specific assets or shield themselves from fluctuations in commodity prices, interest rates, or currency exchange rates (Hilaliah, 2024; Rizai, 2024).

The importance of hedging strategies and derivative instruments has grown, particularly in today's dynamic and uncertain global market conditions. Shifts in monetary policies, global economic fluctuations, and currency exchange rate volatility often influence the performance of investment portfolios. By utilizing derivatives, investors can protect their portfolios from sudden market changes, thereby reducing potential losses. On the other hand, derivatives also allow investors to take speculative positions, which could potentially enhance returns but also increase risks if not managed effectively (Fauzi & Herlina, 2021; Yusuf & Amalia, 2024).

This study focuses on companies within the consumer goods industry listed on the Indonesia Stock Exchange (IDX) from 2020 to 2023. This sector was chosen due to its significant engagement in export-import activities, which expose these companies to foreign exchange rate risks. Exchange rate fluctuations can substantially impact company profits since production costs and product pricing are influenced by currency movements. Consequently, consumer goods companies often employ hedging strategies to manage currency risks stemming from international transactions (Nanda et al., 2022; Rahmat & Indah, 2022).

Moreover, the consumer goods sector frequently faces commodity price risks that affect raw material costs. In this context, companies can utilize commodity futures contracts to lock in raw material prices at specific levels, thereby shielding themselves from unexpected price increases. The use of derivatives in this context not only helps preserve profitability but also ensures stability in long-term financial planning (Putra & Rahayu, 2023; Santoso & Pratama, 2023).

While numerous studies have examined the determinants of hedging decisions, including leverage, liquidity, and firm size (Asfrianto et al., 2023; Wulandari & Rahmawati, 2022), research focusing specifically on the consumer goods sector remains limited. Previous studies often address hedging strategies in broader contexts, such as manufacturing firms or financial institutions (Mulyani & Wahyudi, 2021; Siregar & Anggraini, 2024). However, the unique risks faced by consumer goods companies, particularly those related to exchange rate and commodity price fluctuations, require more targeted investigation.

This study aims to bridge this gap by analyzing how consumer goods companies in Indonesia utilize derivative instruments to manage exchange rate and commodity risks. Furthermore, it introduces a novel perspective by evaluating the effectiveness of these hedging strategies in maintaining financial stability and enhancing portfolio performance during periods of market volatility (Pratiwi & Haryanto, 2023; Hilaliah, 2024).

The findings of this research are expected to provide deeper insights into the practical applications of derivative instruments in risk management. Additionally, the study aims to offer actionable recommendations for companies seeking to minimize risks in their investment portfolios through the adoption of effective hedging strategies. This focus on a specific sector and the practical implications of the study represent its key contribution to the existing body of literature.

By addressing the identified research gap and offering novel insights, this study seeks to advance the understanding of risk management practices in the consumer goods industry, particularly in emerging markets such as Indonesia.

2. Research Methods

This study is a quantitative research design aimed at analyzing the causal relationships between the variables under investigation. The dependent variable is hedging decisions, while the independent variables include leverage, growth opportunity, and firm size. The study focuses on consumer goods sector companies listed on the Indonesia Stock Exchange (IDX) during the 2020–2023 period, comprising a total population of 35 companies.

The sample was selected using purposive sampling, based on predetermined criteria to obtain a representative sample. These criteria include consumer goods companies listed on the IDX during the 2020–2023 period, publicly listed (Tbk) status, and consistent publication of annual financial statements. Out of the 35 companies that met the criteria, 24 companies were selected as the sample.

In this study, companies engaging in hedging were assigned a score of 1, while those not engaging in hedging were assigned a score of 0. By combining data over four years, the total observations reached 96 (24 companies × 4 years), meeting the minimum requirement of 50 observations for logistic regression analysis.

3. Result and Discussion

Logistic regression was used to determine the influence of the independent variables (Growth Opportunity, Leverage, and Firm Size) on the dependent variable, hedging decisions, which is a nominal variable. The hedging decision consists of two categories: companies that engage in hedging (assigned a value of 1, *y=1*) and companies that do not engage in hedging (assigned a value of 0, *y=0*).

Overall Model Fit

Table 1. Overall Model Fit Block 0: Beginning Block

Iteration Historya,b,c

Iteration		*-2 Log likelihood*	*Coefficients*
			Constant
Step 0	1	108.146	-1.000
	2	107.968	-1.096
	3	107.968	-1.099
	4	107.968	-1.099

a. Constant is included in the model.
b. Initial -2 Log Likelihood: 107,968
c. Estimation terminated at iteration number 4 because parameter estimates changed by less than ,001.

Hosmer and Lemeshow's Goodness of Fit Test

To test the feasibility of the regression model, the hypotheses are:

H_0: There is no significant difference between the predicted classifications and the observed classifications.

H_a: There is a significant difference between the predicted classifications and the observed classifications.

Table 2. Hasil *Hosmer and Lemeshow's Goodness of Fit Test*

Hosmer and Lemeshow Test

Step	Chi-square	df	Sig.
1	14.641	8	.067

The Hosmer and Lemeshow test is calculated using the Chi-Square value: If the probability (Sig.) < 0.05, H_o is rejected.

Decision:

The calculation shows a probability (Sig.) value of 0.067, which is greater than 0.05. Therefore, H_o is accepted. This indicates that the regression model is appropriate for further analysis, as there is no significant difference between the predicted classifications and the observed classifications.

Cox dan Snell's R Square

Table 4. *Cox dan Snell's R Square*

Model Summary

Step	*-2 Log likelihood*	*Cox & Snell R Square*	*Nagelkerke R Square*
1	71.874a	.313	.464

The results of the Cox and Snell's R Square calculation show a value of 0.313, while the Nagelkerke R Square value is 0.464. This indicates that the independent variables (Leverage, Growth Opportunity, and Firm Size) explain 46.4% of the variation in the dependent variable (hedging decisions). The remaining percentage is explained by variables outside the scope of this study.

Logistic Regression Coefficient Test

Table 5. *Omnibus Test Of Model Coeffiecient*

Variable	***Wald***	***Chi-Square***	**Conclusion**
LEV	6.679	36,094	Accepted
GW	.121	36,094	Accepted
SIZE	15.716	36,094	Accepted

To test the simultaneous effect using the Omnibus Test of Model Coefficients, the hypotheses are:

H_o: Accepted if the Wald statistic < Chi-Square table value. This means that H_o is accepted, indicating that the independent variables influence the dependent variable.

H_o: Rejected if the Wald statistic > Chi-Square table value. This means that H_o is rejected, indicating that the independent variables do not influence the dependent variable.

Based on Table 5, it is evident that all independent variables, including Leverage, Growth Opportunity, and Firm Size, simultaneously affect the dependent variable, Hedging Decisions. The results show that for each variable, the Wald statistic is less than the Chi-Square table value. Following the above hypothesis, the alternative hypothesis (H_a) is accepted, indicating that the independent variables have a simultaneous influence on the dependent variable.

Table 6. Test Statistics for the Logistic Regression Model

Variabel	**B**	**S.E.**	**Wald**	**Df**	**Sig.**
LEV	1.314	.508	6.679	1	.010
GW	.005	.014	.121	1	.728
SIZE	.786	.198	15.716	1	.000
Constant	-14.182	3.100	20.931	1	.000

$$Y = -14{,}182 + 1{,}314\,(LEV) + 0{,}005\,(GW) + 0{,}786\,(SIZE) + \varepsilon$$

Or

$$\text{Ln}\,[P(HEDG)/1- P(HEDG)] = -14{,}182 + 1{,}314\,(LEV) + 0{,}005\,(GW) + 0{,}786\,(SIZE) + \varepsilon$$

The hypothesis used is as follows:

H0: Independent variables have no significant effect on the model, meaning leverage, growth opportunity, and firm size do not significantly affect the hedging decisions made by companies in the consumer goods industry.

H1: Independent variables have a significant effect on the model, meaning leverage, growth opportunity, and firm size significantly affect the hedging decisions made by companies in the consumer goods industry.

After conducting the tests on the model, it will be determined whether the independent variables are significant to the model. The criterion for rejecting H0 is if the probability value (sig.) ≤ 0.05, in which case H0 is rejected, and Ha is accepted.

Based on Table 6, it can be concluded that the independent variables, namely leverage and firm size, significantly affect the hedging decisions of companies in the consumer goods industry because their Sig. values are < 0.05. Meanwhile, the other independent variable, growth opportunity, does not significantly affect the hedging decisions of companies in the consumer goods industry because its Sig. value is > 0.05.

Table 6 also shows the significance values for each independent variable used, as follows:

Growth Opportunity has a significance value of 0.728. Since this value is greater than 0.05, it can be concluded that growth opportunity does not significantly affect the hedging decisions made by companies in the consumer goods industry.

Leverage has a significance value of 0.010. Since this value is less than 0.05, it can be concluded that leverage significantly affects the hedging decisions made by companies in the consumer goods industry.

Firm Size has a significance value of 0.000. Since this value is less than 0.05, it can be concluded that firm size significantly affects the hedging decisions made by companies in the consumer goods industry.

4. Discussion

The findings of this study provide valuable insights into the relationship between company size, leverage, growth opportunities, and the decision to hedge, particularly in the context of the consumer goods industry listed on the Indonesia Stock Exchange (IDX) from 2020 to 2023. The results show that company size and leverage have a significant impact on hedging decisions, while growth opportunity does not appear to significantly influence hedging behavior. These results align with some previous studies but also present new insights that contribute to the understanding of risk management in emerging markets.

First, the significant relationship between leverage and hedging decisions confirms the findings of previous studies, which argue that companies with higher leverage are more likely to engage in hedging strategies to mitigate financial distress risks (Brown & Toft, 2002; Gay & Nam, 1998). Leverage increases the financial obligations of a company, which may make hedging an essential tool for managing risks, particularly in times of financial instability. This is consistent with the argument that companies with high debt levels are more vulnerable to fluctuations in interest rates, currency values, and commodity prices, and therefore adopt hedging as a risk mitigation tool (Mian, 1996; Bartram, 2007).

In contrast, growth opportunity was found to have no significant effect on hedging decisions. This result is somewhat unexpected, as previous literature suggests that companies with greater growth opportunities may engage in hedging to protect future cash flows and

investments (Froot, Scharfstein, & Stein, 1993; Carter, Rogers, & Simkins, 2006). However, the lack of a significant relationship in this study could be attributed to the specific characteristics of the Indonesian market, where many companies, especially in the consumer goods sector, face different constraints and growth patterns compared to firms in more developed economies. Furthermore, the presence of external factors such as economic uncertainty or changes in regulatory environments may diminish the importance of growth opportunities in shaping hedging decisions.

The finding that company size is significantly related to hedging decisions aligns with prior research, which suggests that larger companies, due to their broader exposure to market risks, are more likely to implement hedging strategies (Bodnar & Gebhardt, 1999; Chen, 2006). Larger companies generally have more diversified operations, more significant international exposure, and greater financial resources, which makes them more capable of utilizing complex risk management tools such as hedging. However, this relationship is not always straightforward. As noted by Black (1995), large companies may also be more resistant to hedging if they have strong cash flows and are less dependent on external financing. Furthermore, some studies have shown that large firms in certain sectors, like technology, may not hedge as much as companies in other sectors more exposed to commodity price fluctuations or foreign exchange risks (Guay, 1999; Bartram, 2007).

While company size plays a crucial role in hedging decisions, it is essential to consider other contextual factors, such as industry type, risk preferences, and managerial attitudes toward risk management. For instance, in the consumer goods industry, which involves substantial foreign trade and exposure to currency fluctuations, companies are more likely to adopt hedging strategies to manage exchange rate risks (Aabo, 2014; Ramaswamy & Vasudevan, 2004). The presence of financial resources and the ability to absorb risks also influences whether large companies choose to hedge or self-insure against market risks (Jorion, 1995).

In terms of managerial implications, this study emphasizes the importance of understanding the relationship between company characteristics and hedging behavior. For financial managers, this means considering not only financial leverage and company size but also the broader risk management strategy and the external factors affecting the firm's operations. The study also provides insights into how companies in emerging markets like Indonesia might use hedging strategies differently than those in more developed markets, due to distinct economic conditions and regulatory frameworks (Geczy, Minton, & Schrand, 1997; Sari, 2020).

Moreover, these findings have practical implications for investors as well. Understanding the determinants of hedging behavior can help investors assess the risk exposure of their portfolios. For instance, investors in the consumer goods sector should consider the size and leverage of companies when evaluating their risk management practices. Companies with significant hedging activity might be seen as less risky investments, especially in markets with volatile exchange rates and commodity prices.

Overall, this study contributes to the literature on risk management in emerging markets by providing empirical evidence on the relationship between company size, leverage, growth opportunities, and hedging decisions. The findings suggest that while financial leverage and company size are significant factors, growth opportunities do not have the same impact in the Indonesian consumer goods sector. Future research could explore the role of corporate governance, risk preferences, and external economic shocks in shaping hedging behavior in emerging markets.

5. Conclusion

Company size is a key factor in hedging decision-making that influences risk management decisions. Larger companies tend to have broader exposure to various market risks, making them more active in implementing hedging strategies to protect their cash flows and profitability. However, the relationship between company size and hedging decisions is not

always positive and can be influenced by industry context, internal risk management strategies, and managerial preferences.

This research also shows that larger companies in certain sectors, such as technology, may not hedge as much as companies in other sectors that are more vulnerable to fluctuations in commodity prices or exchange rates. Additionally, companies with sufficient financial resources may choose to absorb risks directly without hedging.

The implications of these findings are important for financial managers and investors, who need to weigh the costs and benefits of hedging strategies and understand how company size affects these decisions. Therefore, this article provides valuable insights into formulating more effective risk management policies and evaluating investment portfolio risks.

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