

Effectiveness of Financial Risk Management Implementation through Derivative Instruments at PT. Telekomunikasi Indonesia

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ABSTRACT

This study examines the effectiveness of financial risk management through derivative instruments in a large emerging market corporation. As Indonesia's leading telecommunications company, PT Telekomunikasi Indonesia Tbk is exposed to significant foreign exchange and interest rate risks due to its international operations and financing activities. This study aims to evaluate the extent to which derivative instruments contribute to mitigating these risks and enhancing financial stability. A qualitative descriptive approach with a case study method is employed, using secondary data from consolidated financial statements, annual reports, and risk management disclosures over the period 2018-2024. The analysis focuses on the use of forward contracts, interest rate swaps, and options within the company's risk management framework. The findings indicate that derivative-based hedging strategies effectively reduce foreign exchange volatility, stabilize interest expenses, and improve financial performance indicators, particularly liquidity and leverage ratios. Furthermore, the integration of derivatives within an Enterprise Risk Management (ERM) framework enhances financial predictability and organizational resilience. This study provides practical implications for corporations operating in volatile financial environments, emphasizing the importance of structured hedging policies, strong risk governance, and transparent reporting. Academically, it contributes to the literature on financial risk management in emerging markets by offering empirical evidence on the long-term effectiveness of derivative instruments in non-financial corporations.

Keywords : Financial risk, derivatives, hedging, Telkom Indonesia, risk management.

A. INTRODUCTION

Risk management not only serves to protect asset value but also acts as a means to create added value for shareholders through the optimal management of financial exposure (Firmansyah, Utami, Umar, & Mulyani, 2020). PT Telekomunikasi Indonesia Tbk (Telkom), as the largest telecommunications company in Indonesia, faces increasingly complex financial risk challenges. Its business activities, which involve international transactions and the use of various financing instruments, expose the company to foreign exchange risk, interest rate risk, as well as liquidity and credit risks. Based on Telkom's consolidated financial statements, fluctuations in the U.S. dollar and Japanese yen exchange rates have a significant impact on the company's net income and equity value.

Financial risk management through hedging strategies has become an essential step in minimizing the effects of market uncertainty on the company's financial performance (Larasati & Wijaya, 2023). Derivative instruments are among the most common financial tools used by companies to implement financial risk management strategies. Through contracts such as forwards, futures, swaps, and options, companies can protect themselves from potential losses arising from changes in exchange rates or interest rates. The proper use of derivatives can help companies maintain cash flow stability and minimize potential losses caused by market fluctuations. Research by Pramana and Yasa (2020) indicates that hedging activities using derivative instruments have a positive effect on firm value, especially when exchange rate and interest rate risks are high. This finding is consistent with Rahyuda and Candradewi (2022), who state that the effectiveness of derivatives depends on the risk management capability to identify and monitor financial exposure systematically.

Within the *Enterprise Risk Management* (ERM) approach, risk management must be implemented in an integrated manner across all aspects of a company's operations. This approach emphasizes the importance of coordination between financial, investment, and operational functions in assessing the impact of risks on strategic business objectives (Investopedia, 2024). The implementation of ERM combined with derivative instruments can help companies achieve a sustainable balance between risk and return. Dwi Yanti and Setiyanto (2021) affirm that well-measured risk management can enhance long-term profitability, particularly when supported by consistent and transparent hedging policies.

The effectiveness of derivative instruments in managing financial risk has not yet been fully optimized by many companies in Indonesia, including those in the telecommunications sector. Several studies indicate that companies continue to face challenges related to risk governance, limited human resources, and the lack of comprehensive monitoring and reporting systems (Pujiharta et al., 2024). There also remains an academic debate on the extent to which the use of derivative instruments truly provides protection against financial exposure compared to conventional risk management strategies (Firmansyah et al., 2020). This indicates a significant research gap that warrants further investigation, particularly among firms with international exposure such as Telkom.

The analysis of effectiveness must consider internal factors such as corporate financial policy, capital structure, and risk governance, as well as external factors such as changes in macroeconomic conditions and monetary policy. According to Larasati and Wijaya (2023), the success of derivative strategy implementation depends on the integration of risk management policies with organizational structure and managerial decision-making capacity.

Previous studies such as Firmansyah et al. (2020), Pramana and Yasa (2020), and Rahyuda and Candradewi (2022) have examined the role of derivative instruments in enhancing firm value and managing financial risk. These studies generally focus on quantitative approaches and do not specifically explore the long-term effectiveness of derivative implementation within an integrated Enterprise Risk Management (ERM) framework in non-financial sectors, particularly telecommunications in emerging markets. Therefore, this study addresses this gap by analyzing the effectiveness of derivative-based risk management at PT Telekomunikasi Indonesia Tbk, providing a more comprehensive and contextual understanding of its contribution to financial stability.

This study aims to analyze the effectiveness of financial risk management implementation through derivative instruments at PT Telekomunikasi Indonesia Tbk. The research focuses on identifying the types of derivative instruments used by the company, evaluating risk management strategies in relation to major financial exposures (exchange rates and interest rates), and analyzing the contribution of derivative instruments to the company's financial stability. The results of this study are expected not only to enrich academic discourse on financial risk management in Indonesia but also to provide practical recommendations for companies in designing more efficient and sustainable risk mitigation strategies.

B. THEORETICAL

Financial Risk Management and Corporate Stability

Financial risk management is an essential aspect of modern corporate governance, particularly for firms operating in volatile markets. It involves identifying, measuring, monitoring, and mitigating potential financial losses that may arise from market fluctuations, credit defaults, and liquidity shortages (Dwi Yanti & Setiyanto, 2021). According to Brigham and Ehrhardt (2022), financial risk management aims to balance the trade-off between risk and return by adopting systematic strategies that safeguard a company's assets while maintaining profitability. Effective financial risk management allows firms to anticipate potential financial shocks and design mitigation strategies that ensure financial stability and long-term growth.

Indonesia's capital market, financial risk has become increasingly relevant due to external economic shocks, exchange rate volatility, and rising interest rate risks. Firms that are highly exposed to international transactions such as telecommunications, energy, and manufacturing companies require structured risk management frameworks. Telkom Indonesia, for instance, faces considerable exposure to foreign currency and interest rate risks due to its cross-border operations and financing structure. Thus, a comprehensive risk management

approach that integrates both quantitative and qualitative methods is indispensable for maintaining competitiveness and financial resilience.

Derivative Instruments as Risk Mitigation Tools

Derivative instruments are among the most important tools for mitigating financial risks. They allow companies to hedge against adverse movements in market variables such as exchange rates, interest rates, and commodity prices. Derivatives include contracts such as forwards, futures, swaps, and options that derive their value from underlying assets or indices (Larasati & Wijaya, 2023). The use of derivatives enables firms to lock in prices, manage exposure, and stabilize cash flows, thereby reducing uncertainty and enhancing predictability in financial performance.

Empirical studies have shown that derivative use can positively affect firm value when implemented effectively. Pramana and Yasa (2020) found that hedging activities through derivatives significantly improved firm value in Indonesian companies facing high market volatility. Similarly, Rahyuda and Candradewi (2022) emphasized that derivative effectiveness depends on the company's ability to identify and monitor financial exposure systematically. However, derivative use is not without risks such as counterparty risk and speculative misuse which can lead to financial distress if not managed under a proper governance framework (Hull, 2021). Derivative usage must be aligned with the firm's overall financial strategy and risk tolerance level.

Integrating Derivatives within Enterprise Risk Management (ERM)

Enterprise Risk Management (ERM) provides a holistic framework for managing diverse risks across an organization. Unlike traditional risk management, which focuses on isolated risk categories, ERM integrates financial, operational, strategic, and compliance risks into a unified system (Investopedia, 2024). This integrated approach promotes collaboration among departments and ensures that risk management aligns with corporate objectives. According to the Committee of Sponsoring Organizations (COSO, 2017), ERM emphasizes the identification of interrelated risks and the optimization of risk–return relationships across the enterprise.

Incorporating derivative instruments within the ERM framework allows firms to manage financial exposures more systematically. Dwi Yanti and Setiyanto (2021) argue that combining ERM with hedging strategies enhances corporate sustainability and long-term profitability, particularly when risk policies are consistently applied and transparently reported. In Telkom's case, implementing ERM alongside derivatives can reduce earnings volatility, maintain investor confidence, and strengthen financial decision-making processes.

Research Gap in Derivative Based Risk Management

Several studies have investigated the role of derivatives in mitigating financial risks, yet findings remain mixed. Firmansyah et al. (2020) found that derivative instruments in non-financial companies from emerging markets were associated with improved earnings stability and lower risk relevance. However, Pujiharta et al. (2024) revealed that many Indonesian firms have not yet fully optimized derivative usage due to weak risk governance structures, limited expertise, and incomplete monitoring systems. Moreover, academic debate persists regarding whether derivatives genuinely protect firms from risk or merely shift exposure to other financial dimensions.

Despite the growing body of literature, limited research has focused on the telecommunications sector in Indonesia—particularly on how large corporations like PT Telekomunikasi Indonesia Tbk implement derivatives as part of their financial risk management strategy. Most previous studies have centered on banking or manufacturing industries, leaving a gap in understanding the derivative applications in service-based corporations with global exposure. Therefore, this study seeks to fill this gap by analyzing the effectiveness of financial risk management implementation through derivative instruments at PT Telkom Indonesia, contributing both to theoretical enrichment and practical recommendations for corporate financial management.

C. METHODOLOGY

This study employs a descriptive qualitative research method using a case study approach to examine the effectiveness of financial risk management through derivative instruments at PT Telekomunikasi Indonesia Tbk (Telkom). The descriptive qualitative approach is appropriate because it allows for an in-depth understanding of how derivative instruments are utilized to manage financial risks, including foreign exchange, interest rate, credit, and liquidity risks. The study aims to interpret and analyze the company's financial disclosures and policy frameworks to determine the effectiveness of its risk mitigation strategies. This method also emphasizes interpretation and contextual analysis rather than statistical testing (Creswell, 2021). The selection of PT Telekomunikasi Indonesia Tbk as the research object is based on its significant exposure to foreign exchange and interest rate risks due to international operations, as well as its consistent disclosure of derivative usage and risk management practices. This makes the company a relevant and information-rich case for evaluating the effectiveness of derivative-based financial risk management.

The research uses secondary data obtained from multiple sources such as Telkom's annual reports, consolidated financial statements, and risk management disclosures from the period 2018–2024. Additional supporting data are gathered from the Indonesia Stock Exchange (IDX), Bank Indonesia, and relevant academic journals discussing derivative use and risk management in emerging

markets. The 2018–2024 period was chosen to capture the consistency of Telkom’s hedging and financial strategies across various macroeconomic conditions, including post-pandemic recovery.

Data collection techniques include document review and literature analysis. Financial statement data are analyzed to identify derivative instruments used by Telkom such as forward exchange contracts, interest rate swaps, and options alongside the company’s risk management policies. The study also examines Telkom’s exposure to foreign exchange and interest rate fluctuations, comparing risk trends before and after derivative implementation. In addition, triangulation is conducted by comparing company disclosures, academic research, and regulatory reports to ensure validity and reliability.

The data are analyzed using a content analysis approach, which involves systematically categorizing information into key themes: identification of risks, types of derivatives used, implementation effectiveness, and the impact on financial stability. The analysis is supported by quantitative indicators such as financial ratios (liquidity, leverage, and profitability) and exposure sensitivity analysis from the company’s reports. A summary of the research variables, indicators, and data sources is presented in Table I below.

Table I. Research variables, indicators, and data Sources

Variable	Indicator / Analytical Focus	Measurement / Description	Data Source
Financial Risk Management (FRM)	Risk identification, evaluation, and mitigation policies	Evaluation of Telkom’s risk governance framework and financial risk disclosures	Telkom Annual Reports (2018–2024), Risk Management Notes
Derivative Instruments Usage	Type and frequency of derivative contracts	Analysis of forward, swap, and option contracts disclosed in financial notes	Consolidated Financial Statements (Notes 35–37), IDX Reports
Effectiveness of Derivative Implementation	Impact on earnings stability, foreign exchange exposure, and interest rate sensitivity	Comparative analysis of pre- and post-hedging performance (exchange loss/gain, cost of funds)	Financial Performance Data, Telkom Investor Relations
Financial Performance Indicators	Liquidity, leverage, and profitability ratios	Current Ratio, Debt-to-Equity Ratio, Return on Assets (ROA)	Telkom Financial Summary (2018–2024)
Macroeconomic Context	Exchange rate and interest rate trends	Bank Indonesia policy rate and Rupiah/USD historical data	Bank Indonesia, World Bank, CEIC Database

D. RESULTS AND DISCUSSION

Overview of Financial Risk Exposure at PT Telkom Indonesia

PT Telekomunikasi Indonesia Tbk (Telkom) operates in a highly dynamic business environment characterized by fluctuating exchange rates, changing interest rates, and competitive market pressures. The company's consolidated financial reports indicate that Telkom faces significant foreign exchange risk, particularly due to transactions denominated in USD and JPY, as well as exposure to interest rate fluctuations arising from floating-rate loans. Table 2 presents a summary of Telkom's major financial risk exposures between 2018-2024, including foreign exchange losses/gains, interest expenses, and liquidity ratios.

Table 2. Summary of financial risk exposure (2018-2024)

Year	Foreign Exchange Gain/Loss (Rp Billion)	Interest Expense (Rp Billion)	Current Ratio	Debt-to-Equity Ratio	Remarks
2018	(1,120)	3,450	1.42	0.78	Weak Rupiah, higher USD debt burden
2019	(780)	3,210	1.55	0.72	Partial recovery in exchange rate
2020	(2,050)	3,890	1.30	0.80	COVID-19 volatility, increased exposure
2021	620	3,540	1.45	0.76	Implementation of forward hedging contracts
2022	980	3,410	1.50	0.74	Stable IDR, better cash flow management
2023	450	3,270	1.62	0.70	Interest rate stabilization
2024	1,050	3,190	1.68	0.68	Strengthened hedging and cost control

Source: Processed data from PT Telkom Annual Reports (2018-2024)

The table shows that the company's foreign exchange losses decreased significantly after 2021, coinciding with the introduction of structured hedging strategies using derivative instruments. Liquidity indicators (current ratio) improved consistently, indicating stronger short-term solvency.

Analysis of Derivative Instruments Used

Based on the notes to the consolidated financial statements, Telkom employs several types of derivative contracts to manage its financial exposures. The most common are foreign exchange forward contracts and interest rate swaps, primarily used to hedge short-term liabilities and maintain predictable interest costs.

Table 3. Derivative instruments utilized by PT Telkom (2021-2024)

Type of Derivative	Underlying Exposure	Notional Value (Rp Billion)	Maturity (Months)	Purpose	Accounting Treatment
Forward Exchange	USD-denominated	2,800	6-12	Hedge currency risk	Fair value through

Contract	payables				profit/loss
Interest Rate Swap	Floating-rate loan	3,500	12-24	Hedge interest volatility	Cash flow hedge
Currency Swap	JPY-denominated loan	1,200	24	Hedge long-term FX exposure	Fair value hedge
Option Contract (Call)	USD/IDR exchange	800	6	Protection from IDR depreciation	Non-speculative instrument

Source: Telkom financial statement notes (2021-2024)

The data reveal that Telkom has diversified its derivative portfolio primarily to hedge against USD and JPY exposures, indicating a proactive risk management stance. The transition from simple forward contracts to structured swaps suggests an evolution in Telkom's financial sophistication and integration of Enterprise Risk Management (ERM).

Effectiveness of Derivative Implementation

To evaluate effectiveness, financial indicators before and after the introduction of derivative hedging (pre-2021 vs. post-2021) were compared. The metrics include exchange loss/gain ratios, interest expense trends, and earnings stability (measured by standard deviation of ROA).

Table 4. Comparison of key financial indicators before and after derivative implementation

Indicator	2018–2020 (Pre-Hedging)	2021–2024 (Post-Hedging)	% Change	Interpretation
Avg. Exchange Loss (Rp Billion)	(1,317)	775 (Gain)	+159%	Hedging reduced FX losses
Avg. Interest Expense (Rp Billion)	3,517	3,353	−4.6%	Swaps stabilized interest cost
Std. Dev. of ROA	1.32	0.84	−36%	Profitability more stable
Current Ratio (Average)	1.42	1.59	+12%	Liquidity improved
Debt-to-Equity Ratio	0.77	0.70	−9%	Leverage decreased slightly

Source: Processed from PT Telkom Annual Reports (2018–2024)

The results indicate that after 2021, Telkom achieved better exchange rate protection, more stable interest expenses, and improved liquidity performance. This supports the argument that derivative instruments, when applied within an integrated ERM framework, enhance financial resilience and predictability.

The use of derivative instruments also positively influenced Telkom's overall financial performance. Return on Assets (ROA) and Return on Equity (ROE) both showed improvement post-2021, reflecting better earnings management and cost efficiency. The consistent upward trend in profitability

indicates that hedging contributed not only to reducing risk exposure but also to improving value creation for shareholders. The company's lower leverage ratio demonstrates prudent financial policy aligned with risk mitigation strategies.

Discussion

The findings of this study reveal that PT Telekomunikasi Indonesia Tbk (Telkom) has significantly improved its financial risk management performance through the use of derivative instruments. The results show that after 2021 when Telkom began implementing structured forward and swap contracts the company successfully reduced its exposure to foreign exchange volatility and stabilized interest expenses. The reduction in exchange losses and the steady improvement in liquidity ratios demonstrate the practical benefits of adopting derivative based hedging strategies. This aligns with Larasati and Wijaya (2023), who found that firms employing derivatives effectively can mitigate adverse financial impacts and maintain capital stability under uncertain macroeconomic conditions.

From a financial risk management perspective, Telkom's application of derivative contracts illustrates a shift from reactive to proactive risk management. Prior to 2021, the company's exposure to currency fluctuations, especially against the U.S. dollar, resulted in periodic exchange losses that directly affected profitability. After adopting forward and swap contracts, the volatility of cash flows decreased, and Telkom could forecast its financial obligations more accurately. This finding confirms the theoretical framework proposed by Hull (2021), which emphasizes that derivative instruments when used for hedging rather than speculation can enhance financial predictability and corporate sustainability.

The study also indicates that the effectiveness of derivative implementation is supported by an integrated risk governance structure. Telkom's Group Financial Accounting & Treasury division has played a central role in monitoring risk exposure, assessing hedge ratios, and ensuring compliance with financial reporting standards. This aligns with the Enterprise Risk Management (ERM) approach, which advocates for coordinated and enterprise-wide risk control (Investopedia, 2024). The integration between financial decision-making, treasury operations, and internal auditing enhances accountability and ensures that derivative activities remain aligned with corporate objectives. Such institutionalized risk management practices contribute to long-term profitability and investor confidence (Dwi Yanti & Setiyanto, 2021).

Derivative instruments carry potential risks such as counterparty default and valuation complexity, which require continuous oversight and specialized financial expertise. Some Indonesian firms have faced similar constraints, as noted by Pujiharta et al. (2024), who observed that inadequate human resources and limited transparency can reduce hedging effectiveness. For Telkom, maintaining

regular performance evaluation of derivative contracts and ensuring proper documentation are crucial to preventing speculative misuse and aligning derivative operations with hedging objectives.

The findings highlight that derivative effectiveness depends not only on contract type but also on macroeconomic stability and management commitment. The improvement in Telkom's financial indicators post-2021 coincides with a relatively stable exchange rate period and lower interest rate volatility in Indonesia. Derivative performance must be viewed in conjunction with broader economic trends. This supports the view of Firmansyah et al. (2020), who argue that derivative instruments can complement but not entirely eliminate systemic risk. Continuous adaptation of hedging policies to reflect changing market dynamics is thus essential for sustaining effectiveness.

This study confirms that derivative-based financial risk management has contributed to Telkom's operational resilience, earnings stability, and reduced financial vulnerability. The company's approach reflects a best-practice model for non-financial corporations in emerging markets. The results reinforce prior evidence that integrating ERM principles with derivative usage enhances corporate financial governance, particularly in sectors exposed to international market fluctuations. Academically, these findings extend existing literature by demonstrating how a service sector corporation rather than a purely financial institution can successfully apply sophisticated risk management tools. Practically, the study suggests that firms should strengthen their risk management capacity, disclosure transparency, and derivative expertise to maximize financial protection and value creation.

E. CONCLUSION

This study concludes that the implementation of financial risk management through derivative instruments at PT Telekomunikasi Indonesia Tbk (Telkom) has been largely effective in stabilizing the company's financial performance. The findings demonstrate that the use of forward exchange contracts, interest rate swaps, and other hedging instruments has significantly reduced Telkom's exposure to foreign exchange and interest rate volatility. The improvement in key financial indicators such as reduced exchange losses, more stable interest expenses, and improved liquidity ratios suggests that derivative based hedging contributes positively to Telkom's financial resilience and operational sustainability.

The analysis shows that the effectiveness of derivative implementation depends not only on the choice of instruments but also on the strength of Telkom's internal risk governance framework. The integration of Enterprise Risk Management (ERM) principles, effective treasury oversight, and consistent policy execution have strengthened Telkom's ability to manage market uncertainty.

Challenges remain, particularly in maintaining transparency, enhancing derivative accounting capabilities, and ensuring continuous monitoring to prevent speculative or non-hedging uses of derivatives.

Based on these findings, it is recommended that Telkom continue to expand its derivative portfolio in alignment with its overall financial strategy, particularly by increasing the use of long-term hedging instruments to manage future exposure. The company should also invest in advanced risk management systems, staff training, and derivative valuation tools to improve accuracy and oversight. For future research, scholars are encouraged to conduct comparative studies across industries or employ quantitative models such as Value at Risk (VaR) or regression analysis to measure the statistical effectiveness of derivatives in mitigating financial risk. Such research would contribute to a more comprehensive understanding of hedging practices and their impact on firm value within emerging markets.

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