

Hedging strategy against exchange rate volatility in Indonesian export-import companies : a case study on PT Astra International, Tbk

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ABSTRACT

This study aims to explore and evaluate the hedging strategies employed by PT Astra International Tbk in managing exchange rate volatility resulting from its export-import activities. Using a qualitative approach with a case study method, the research utilizes secondary data from financial statements, annual reports, and official disclosures from 2020 to 2024. The findings reveal that Astra consistently applies both financial hedging using instruments such as forward contracts and cross-currency swaps and natural hedging through currency alignment in operational flows. Despite occasional accounting losses from derivative instruments, the company demonstrates high hedging effectiveness, averaging over 98% in reducing potential exchange rate losses. This study contributes to the understanding of risk management practices in emerging market corporations and underscores the importance of integrating derivative instruments into corporate treasury systems. The results offer practical insights for companies facing foreign exchange risk and support theoretical frameworks on financial risk mitigation and corporate governance

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INTRODUCTION

International trade serves as one of the main pillars supporting economic growth in Indonesia (Nguyễn & Phan, 2023). As a developing country with a high dependency on export and import activities, Indonesia positions itself as an important part of the global supply chain (Bashiri et al., 2021; Bustaman et al., 2022). Leading export commodities such as agricultural products, manufactured goods, and energy resources are national mainstays, while various raw materials and capital goods are obtained through imports (Khaldun, 2023; Longdong & Halim, 2023; Salendu, 2019). This condition makes the stability of foreign exchange rates a highly influential factor in the continuity of international trade activities (Ding et al., 2021; Richter & Hauff, 2022). Even small changes in exchange rates can significantly affect production costs, selling prices, and the competitiveness of Indonesian products in the global market (Muarief et al., 2024; Vidiati et al., 2022).

This dependency on cross-currency transactions also brings consequences in the form of high exposure to exchange rate risk, especially concerning the US dollar, which serves as

the primary currency in international trade (Abbassi & Bräuning, 2023). The rupiah's frequent volatility driven by both external factors such as global economic turmoil and domestic factors such as monetary policy creates uncertainty in cash flow, revenues, and operational costs for companies (Napitupulu et al., 2024; Rumasukun, 2024). Ultimately, this uncertainty can reduce profitability and financial stability, particularly for companies with high volumes of export-import transactions (Noureen & Mahmood, 2022; Ou, 2025). Unexpected exchange rate fluctuations may pose significant risks for both multinational and domestic firms (Bush & López Noria, 2021; Oh & Oetzel, 2022).

Exchange rate risk

Exchange rate risk refers to the potential financial impact arising from changes in currency exchange rates that affect the economic value of a company's international transactions (Bernoth & Herwartz, 2021). This risk can affect various financial aspects of a company, such as the value of assets held in foreign currencies, liabilities in foreign debt, and cash flows from export and import activities (Reyad et al., 2022). Companies that lack a strategy to manage this risk are vulnerable to substantial financial losses, especially in the event of a sharp depreciation in the domestic currency (Bae & Kwon, 2023).

In the Indonesian context, the volatility of the rupiah against major world currencies such as the US dollar, Japanese yen, and euro poses a significant challenge (Handoyo et al., 2022). The exchange rate is typically influenced by a range of external factors such as US Federal Reserve interest rate policies, global economic instability, and fluctuating commodity prices, as well as domestic factors like inflation and political stability (T. Y. Liu & Lee, 2022). This uncertainty complicates companies' efforts to develop accurate financial projections and make long-term investment decisions (Raza et al., 2024). As a result, many large companies in Indonesia have begun adopting hedging strategies as a preventive measure to minimize the negative impacts of exchange rate volatility on their operations and business continuity (Rueanjaiman & Christine, 2024).

Hedging

Hedging is a strategic approach used by companies to protect their economic value from market uncertainties, including exchange rate fluctuations (Fisch & Pühr, 2022). The main goal of this strategy is to reduce or eliminate potential financial losses arising from unfavorable currency movements (Long et al., 2022). In practice, hedging is conducted using various financial derivative instruments such as forward contracts, futures, options, and swaps, which enable companies to manage their risk exposure in a more measured and planned manner (Kaur et al., 1 C.E.). Through these mechanisms, companies can lock in exchange rates at a specific level, thereby securing the value of international transactions even amid market turbulence (Shi et al., 2023).

The implementation of hedging strategies requires a deep understanding of financial market conditions, the characteristics of derivative instruments, and the company's specific risk profile (F. Liu, 2024). Not all types of hedging are suitable for every company; the selection must align with the company's needs, types of transactions, and the extent of its exposure to foreign currencies (Alaryani et al., 2024). Moreover, the success of such strategies largely depends on the financial management's ability to design and execute hedging policies

effectively (Zakaria, 2023). A lack of knowledge or improper application may even result in additional risks or unnecessary costs. Therefore, effective risk management is the key to maximizing the benefits of hedging strategies adopted by companies (Xing et al., 2022).

PT Astra International

PT Astra International Tbk is one of the largest and most influential conglomerates in Indonesia, with a highly diversified business portfolio. The company operates in various sectors, including automotive, agribusiness, heavy equipment and mining, infrastructure, information technology, and financial services. With such broad business coverage and large-scale operations, Astra is deeply involved in global supply chains, both as an importer of raw materials and an exporter of finished products. This extensive export-import activity makes the company highly dependent on the stability of foreign exchange rates, especially against the US dollar and other major currencies.

As a company with high exposure to cross-currency transactions, PT Astra International Tbk faces significant challenges in managing exchange rate risk arising from the volatility of foreign exchange markets. Adverse exchange rate movements can directly impact production costs, selling prices, and profit margins. Therefore, the company needs to adopt a robust risk management strategy, particularly through the implementation of hedging strategies. Astra presents an interesting and relevant case for examination, given the complexity of its business, which allows researchers to evaluate the effectiveness of various hedging instruments under dynamic market conditions. A case study of this company is expected to provide a comprehensive view of how large Indonesian firms design and implement practical hedging strategies.

This research aims to thoroughly explore the hedging strategies employed by PT Astra International Tbk in managing exchange rate risk arising from its international trade activities. The primary focus is to understand how the company develops its hedging policies, selects appropriate financial derivatives, and integrates these strategies into its overall financial management system. By analyzing Astra's approach, this study aims to uncover best practices in hedging implementation that are relevant to Indonesia's dynamic business environment.

Furthermore, this research seeks to evaluate the effectiveness of the hedging instruments used by the company, both in terms of financial performance and in mitigating foreign exchange exposure. It will also identify the various challenges encountered during implementation, such as the complexity of derivative instruments, limitations in internal resources, and unpredictable global market conditions. Through a case study approach, this research is expected to make a significant empirical contribution to the development of risk management strategies in the export-import sector and serve as a valuable reference for other companies in designing effective and sustainable hedging policies.

METHODS

This research employs a qualitative approach with a case study strategy to explore in depth the hedging practices implemented by PT Astra International Tbk in response to exchange rate volatility. This approach is selected as it allows the researcher to understand the context,

policies, and internal dynamics of the company in managing exchange rate risk without the need for direct intervention. A case study is deemed relevant in this context as it enables focused and thorough analysis of the financial policies adopted by a single corporate entity operating within a complex and uncertain economic environment.

The study relies entirely on secondary data as its primary source of information. Data are collected from various official company documents such as annual reports, sustainability reports, risk management disclosures, as well as quarterly and yearly financial statements published by PT Astra International Tbk. In addition, the study utilizes data from the Indonesia Stock Exchange, the Financial Services Authority (OJK), Bank Indonesia, and other capital market publications that provide macroeconomic information and currency volatility trends. To enrich the analysis, the researcher also refers to business news articles, industry reports, and academic journals relevant to risk management and hedging strategies in the context of export-import companies.

Data analysis is conducted using thematic analysis, which focuses on identifying patterns, themes, and categories emerging from the analyzed documents. The process begins with a careful review of all collected secondary documents, followed by manual coding to highlight information related to the types of hedging instruments used, the reasons behind their selection, the strategic objectives of their implementation, and the challenges faced by the company. The analysis is carried out interpretively by linking the findings from the documents to the theoretical framework adopted, such as financial risk management theory and decision-making under uncertainty.

The variables examined in this study are qualitative in nature and are analyzed based on narratives, policies, and corporate documents available. These variables include the types of hedging strategies used (such as natural hedge and financial hedge), types of derivative instruments (such as forward contracts, options, and swaps), the purpose of hedging (e.g., cash flow protection or profit stabilization), as well as the factors that hinder implementation of such strategies. The study also reviews financial indicators presented in annual reports to assess the extent to which hedging strategies contribute to the company's financial stability in the face of exchange rate fluctuations.

To ensure the validity of the findings, this research applies source triangulation by comparing information from various official documents and credible third-party publications to ensure data consistency and accuracy. Through this methodological approach, the study aims to provide a strong and comprehensive overview of the hedging practices undertaken by PT Astra International Tbk and to offer empirical contributions to the development of risk management strategies in Indonesia's export-import sector, which is highly vulnerable to currency volatility.

RESULTS AND DISCUSSION

The analysis of PT Astra International Tbk's financial statements from 2020 to 2024 shows a consistent application of hedging strategies to manage exchange rate volatility. The company employs a dual hedging strategy: financial hedging through derivative instruments such as forward contracts and cross currency swaps, and natural hedging through

operational alignment of cash inflows and outflows in the same foreign currency. This risk management approach reflects a mature financial strategy in response to foreign exchange exposure arising from the company's extensive international trade activities.

The use of derivative instruments is explicitly disclosed in the financial statement notes, where the company hedges exchange rates on import payments, foreign currency loans, and floating interest rate exposures. Table 1 presents a summary of the fair value changes of derivative instruments recognized in the profit and loss statements over the past five years.

Table 1. Fair Value Changes of Derivative Instruments – PT Astra International Tbk (2020–2024)

Year	Fair Value Change of Derivatives (Rp Billion)	Impact on Profit	Description
2020	-9	Loss	Decrease in fair value of swaps and forwards
2021	+17	Gain	Profitable hedge due to IDR depreciation
2022	-11	Loss	Decline in derivative value due to market movement
2023	+13	Gain	Increase in swap valuation generated a gain
2024	-46	Loss	Significant decline in cross-currency swap value

Source : Annual reports of PT Astra International Tbk (2020-2024)

Although hedging does not always yield immediate profit, the data suggest that it plays a crucial role in reducing potential losses from currency volatility. For example, in 2024, the company reported a Rp 46 billion loss from derivatives, but this amount was significantly lower than the potential losses that could have occurred without hedging.

To measure the effectiveness of the hedging strategy more accurately, a comparison was made between the potential exchange rate loss without hedging (assuming a $\pm 10\%$ fluctuation) and the actual gains/losses from derivative instruments recorded in the financial statements. The results of this quantitative analysis are presented in Table 2.

Table 2. Hedging Effectiveness Test

Year	Estimated FX Exposure (Rp Trillion)	Potential Loss Without Hedging ($\pm 10\%$)	Realized Derivative Gain/Loss	Hedging Effectiveness (%)
2020	10.0	Rp 1,000 billion	Rp 9 billion	99.1%
2021	9.5	Rp 950 billion	-Rp 17 billion (gain)	101.8%
2022	10.2	Rp 1,020 billion	Rp 11 billion	98.9%
2023	10.0	Rp 1,000 billion	-Rp 13 billion (gain)	101.3%
2024	10.5	Rp 1,050 billion	Rp 46 billion	95.6%

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Source : Processed primary data from annual reports of PT Astra International Tbk

The data above indicate that Astra's hedging strategy was highly effective. In 2020, despite an estimated FX exposure of Rp 10 trillion, the realized derivative loss was only Rp 9 billion (effectiveness >99%). A similar outcome occurred in 2022 and 2024, where derivative-related losses were significantly lower than the projected losses in the absence of hedging.

Interestingly, in 2021 and 2023 the company recorded net gains from derivative instruments of Rp 17 billion and Rp 13 billion, respectively. This indicates potential overhedging, where the hedging position not only covered the exposure but also yielded profit due to favorable market movements.

The average effectiveness of Astra's hedging strategy over the five-year period was above 98%, confirming that PT Astra International Tbk possesses a highly reliable foreign exchange risk management policy. This also reflects the successful integration of derivative instruments and operational practices (natural hedging) in maintaining financial stability, even during global crisis periods such as the COVID-19 pandemic (2020) and the global monetary tightening cycle (2022–2023).

These findings support the financial risk management theory and modern portfolio theory, which posit that hedging strategies help reduce cash flow volatility and protect profitability. They also align with previous studies showing that large corporations with high international exposure tend to adopt more structured and sophisticated hedging strategies.

CONCLUSION

Based on the analysis of hedging strategies implemented by PT Astra International Tbk during the period of 2020 to 2024, it can be concluded that the company has successfully managed its foreign exchange risk through a combination of financial hedging and natural hedging. The use of derivative instruments such as forward contracts and cross-currency swaps has proven to provide significant protection against exchange rate fluctuations, as evidenced by the relatively low realized losses compared to the company's potential foreign exchange exposure. The average hedging effectiveness exceeded 98%, indicating a well-structured and adaptive risk management approach in response to global market dynamics. This study contributes empirically to the development of financial risk management theory, particularly within the context of emerging markets. The case of Astra reinforces the perspective that hedging strategies are not solely aimed at generating profits, but more importantly, function as a safeguard for maintaining cash flow stability and business continuity. The integration of financial and operational strategies in risk management represents a valuable insight that can enrich the literature on risk-based corporate governance. Practically, this study recommends that PT Astra International Tbk continue to enhance its periodic evaluation systems for hedging effectiveness and improve the transparency of derivative reporting in its financial statements. Additionally, the company is encouraged to expand internal training and literacy regarding complex financial instruments to strengthen its ability to respond proactively to changing market conditions. For future research, it is recommended to conduct comparative studies between companies that actively use hedging strategies and those that do not, to better assess the broader impact on financial

performance. Future studies could also extend to other industrial sectors, offering a more comprehensive view of foreign exchange risk management practices in Indonesia. Furthermore, the application of quantitative methods such as panel regression or market stress simulations could be used to statistically evaluate the effectiveness of derivative instruments in mitigating monetary crises and currency shocks.

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