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Research Article

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Analysis of the Impact of Exchange Rate Fluctuations on the Profitability of Footwear Export Companies in Indonesia

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Abstract: *This study aims to analyze the effect of USD/IDR exchange rate fluctuations on the profitability of export-manufacturing companies in the Indonesian footwear sector, with a case study of footwear manufacturing company in Indonesia. Profitability is measured using three key indicators: Net Profit Margin (NPM), Return on Assets (ROA), and Return on Equity (ROE). The research uses secondary data, including company financial statements and exchange rate data from 2018 to 2023. The analytical method employed is simple linear regression. The results indicate that exchange rate fluctuations tend to negatively affect all profitability indicators. However, the influence is not statistically significant (p-value > 0.05). The coefficient of determination (R^2) shows that exchange rates explain about 27% to 37% of profitability variation. Despite the lack of statistical significance, the consistently negative relationship suggests that exchange rate volatility remains a crucial risk factor for export companies reliant on imported raw materials. The study recommends implementing risk management strategies such as hedging and resource diversification to maintain financial performance stability.*

Keywords: *exchange rate fluctuation, profitability, export company, NPM, ROA, ROE.*

Introduction

The footwear manufacturing industry is one of the key drivers of Indonesia's export-oriented economy. Companies such as PT XYZ, located in West Java, play a significant role in supplying footwear products to global markets, especially the United States and Europe. Due to their heavy reliance on international trade, these companies are highly exposed to external macroeconomic factors, particularly exchange rate fluctuations. Exchange rate volatility is a common phenomenon in open economies and can significantly affect international business activities.

According to Dornbusch and Fischer (1990), unstable exchange rates create uncertainty for businesses engaged in foreign trade, influencing both production costs and revenues received in foreign currencies. Similarly, Krugman and Obstfeld (2009) highlight the critical role of exchange rates in determining the price competitiveness of products and the profitability of export-dependent firms. For PT XYZ, fluctuations in the exchange rate, especially between the Indonesian Rupiah (IDR) and the US Dollar (USD), pose a substantial risk to profitability. The company imports a large portion of its raw materials and receives export payments in foreign currencies. A depreciation of the Rupiah increases import costs and may distort profit margins despite seemingly higher revenues in local currency.

This issue is not only relevant at the firm level but also has implications for national economic stability. Bank Indonesia (2020) emphasizes that high exchange rate volatility can disrupt export performance and weaken the industrial sector. Therefore, an in-depth study of how exchange rate fluctuations affect the profitability of export-manufacturing companies is essential for formulating appropriate mitigation strategies. From a practical perspective, companies like PT XYZ need to understand exchange rate dynamics to develop adaptive financial and operational policies.

Strategies such as hedging, market diversification, and optimizing local supply chains may be part of the solution. However, it is first necessary to determine the extent to which exchange rate fluctuations influence corporate profitability. This research aims to analyze the impact of exchange rate fluctuations on the profitability of export-oriented footwear manufacturing companies in Indonesia, with PT XYZ as the case study. The study evaluates three key profitability indicators—Net Profit Margin (NPM), Return on Assets (ROA), and Return on Equity (ROE)—and assesses their sensitivity to changes in the USD/IDR exchange rate over the 2018–2023 period.

Method

The research is structured as a quantitative case study that analyzes the impact of exchange rate fluctuations (USD/IDR) on the profitability of an export-oriented footwear manufacturing company. The activities include the identification of key financial indicators, collection of historical financial and exchange rate data, processing of data using profitability formulas, and statistical testing through regression analysis. The study spans six fiscal years (2018–2023), with annual data used to capture medium-term trends and relationships. Each year's data point represents one observation in the regression model.

The research target is PT XYZ, selected using purposive sampling, based on the following criteria:

a. The company operates in the export-manufacturing sector, specifically in footwear production.
b. It has high exposure to foreign currency transactions, particularly USD.
c. It imports raw materials, making it sensitive to currency volatility.
d. The company's financial reports are accessible and meet the required reporting standards.

This target company is considered a representative case for the broader export-oriented manufacturing industry in Indonesia.

In this study, the materials and tools used were selected to ensure the accuracy and reliability of the analysis. The primary materials included the annual financial reports of PT XYZ from 2018 to 2023, which provided the necessary income statements and balance sheets for assessing the company's profitability indicators. Additionally, exchange rate data (USD/IDR) was obtained from the official website of Bank Indonesia, as well as supporting macroeconomic data from BPS (Statistics Indonesia) and the Ministry of Trade, which was used if needed to provide context for the analysis.

The tools employed in this study were essential for data collection and analysis. A custom data collection sheet was designed using Excel, which allowed for the systematic recording of exchange rates and financial data. The spreadsheet also included automated formulas to calculate key profitability metrics, such as Net Profit Margin (NPM), Return on Assets (ROA), and Return on Equity (ROE). For statistical analysis, both SPSS and Microsoft Excel were used, enabling the execution of regression tests, classical assumption testing, and descriptive statistics. Additionally, graphing tools were utilized to visualize trends and residual patterns for assumption tests.

The tool design was focused on ease of use and minimizing errors. The custom data log sheet was tested using historical data to ensure its accuracy and consistency. Input columns were created for key financial variables and exchange rates, and automated formulas calculated the profitability indicators. Output tables for regression results, such as R^2, p-values, and regression coefficients, were pre-formatted to present results clearly.

Regarding data collection techniques, the study primarily relied on document analysis. The first step involved a literature review to gather relevant theories and prior studies on exchange rates and profitability, which informed the conceptual framework for the research. The financial data was retrieved by

downloading or requesting the annual reports of PT XYZ. Exchange rate data was then obtained from Bank Indonesia and averaged annually. All relevant variables were recorded in the custom-designed spreadsheet, and cross-checking was performed to ensure accuracy and consistency. If necessary, informal interviews with PT XYZ's finance department were conducted to clarify any unclear data points.

For the data analysis, various techniques were employed to measure the impact of exchange rate fluctuations on the company's profitability. Descriptive statistics were used to summarize the characteristics of the variables, including the mean, standard deviation, and range. Regression assumptions, such as normality and heteroskedasticity, were tested to ensure the validity of the regression models. Simple linear regression analysis was conducted for each profitability indicator, including NPM, ROA, and ROE, with the exchange rate as the independent variable. A t-test was also performed to assess whether the exchange rate significantly impacted each profitability measure. Lastly, the coefficient of determination (R^2) was used to determine how much of the variability in profitability could be explained by changes in the exchange rate. All calculations were done using SPSS, and the results were verified manually in Excel to ensure consistency and reliability.

Results and Discussion

Regression Results

The study analyzed the influence of exchange rate fluctuations (USD/IDR) on the profitability of PT XYZ using simple linear regression. Profitability was measured through three financial indicators: Net Profit Margin (NPM), Return on Assets (ROA), and Return on Equity (ROE).

1. Exchange Rate and ROA

   The regression equation for ROA is:

   $ROA = 49.7945 - 0.0025\ X\ Exchange\ rate$

   - Coefficient (β): -0.0025
   - R-squared: 0.331
   - p-value: 0.232

   Interpretation:

   The coefficient indicates a negative relationship—each Rp1 increase in exchange rate decreases ROA by 0.0025%, holding other factors constant. However, the p-value > 0.05 suggests that this result is not statistically significant.

2. Exchange Rate and NPM

   The regression equation for NPM is:

   $NPM = 47.3106 - 0.0025\ X\ Exchange\ rate$

   - Coefficient (β): -0.0025
   - R-squared: 0.274
   - p-value: 0.287

   Interpretation

   A similar negative effect is observed, but with lower explanatory power and no statistical significance.

3. Exchange Rate and ROE

   The regression equation for ROE is:

   $ROE = 133.7168 - 0.0077\ X\ Exchange\ rate$

- Coefficient (β): -0.0077
- R-squared: 0.370
- p-value: 0.200

Interpretation

The highest R-squared among the three models, yet the p-value remains > 0.05, indicating the absence of significant influence at the 5% level.

4. Summary of Regression Results

Table 1. Summary of Regression Results

Indicator	Coefficient (β)	R-squared	p-value	Significance
ROA	-0.0025	0.331	0.232	Not significant
NPM	-0.0025	0.274	0.287	Not significant
ROE	-0.0077	0.370	0.200	Not significant

The findings of this study reveal a negative relationship between exchange rate fluctuations, specifically the depreciation of the Rupiah, and profitability. This negative trend, indicated by the coefficients across all models, suggests that a weakening of the Rupiah tends to reduce the profitability of PT XYZ. This relationship aligns with the conventional economic theory that when a currency depreciates, the cost of imports rises. In this case, the company relies on imported raw materials for its production process, and as the Rupiah weakens against the US Dollar, the price of these imported materials increases. This higher cost of imports ultimately compresses the company's profit margins, even though a portion of its revenue is generated in USD, which theoretically could offset some of these increased costs.

Despite the expected direction of impact, it is noteworthy that none of the regression results were statistically significant. This lack of statistical significance could be attributed to several factors. One key explanation could be the limited number of observations used in the study. With only six years of data, the statistical power of the tests is relatively low, which can make it difficult to detect significant relationships. The small sample size might not provide enough variation to capture the true impact of exchange rate fluctuations on profitability. This limitation is common in studies with short time frames, as the variability in exchange rates or profitability might not be sufficient for robust conclusions.

Another potential explanation for the lack of statistical significance could be the existence of hedging strategies or cost-control mechanisms employed by PT XYZ. Many companies that are exposed to currency risk implement hedging strategies, either through financial instruments or by adjusting their operations. These strategies can mitigate the impact of exchange rate fluctuations on profitability. If PT XYZ has implemented such measures, they would likely dampen the effect of exchange rate depreciation on profitability, making it harder to observe a statistically significant relationship in the data.

In addition to hedging strategies, other unexamined factors could be influencing the profitability of PT XYZ, which were not considered in this study. For example, global demand for the company's products could play a significant role in its profitability. If global demand rises, the company may still be able to maintain or even improve its profitability despite the challenges posed by exchange rate fluctuations. Production efficiency is another factor that could offset the impact of rising import costs. If PT XYZ can optimize its production processes or reduce waste, it might mitigate the negative effects of exchange rate depreciation. Additionally, factors such as tax policy, raw material prices, and other external economic conditions could have an influence on profitability that was not captured by the models in this study.

The results of this study are consistent with previous research in the field. For instance, studies by Amelia & Wulandari (2021) and Fitri (2020) also found a negative relationship between exchange rate volatility and profitability, although the significance of this relationship was sometimes weak. These studies, like the current research, suggest that while exchange rate fluctuations may affect profitability, other factors may dilute or mask this impact. Furthermore, the findings are in line with the work of Yustika & Hartanto (2020), who proposed that companies with effective financial management practices can shield themselves from external shocks, such as exchange rate volatility. This suggests that PT XYZ, through effective financial management and possibly hedging or diversification strategies, might be able to buffer the negative effects of exchange rate fluctuations.

Although the statistical influence of exchange rates on profitability was not proven to be significant, the consistent negative trend observed in the data carries important implications for both the company and the broader academic community. For companies like PT XYZ, which operate in export-oriented industries, the results highlight the importance of closely monitoring exchange rate movements. Even if the direct impact on profitability is not statistically significant, the negative trend suggests that currency fluctuations can still affect the company's cost structure and profit margins. As such, companies should consider implementing risk management strategies to mitigate the potential impact of exchange rate changes.

Risk management strategies such as financial hedging, operational hedging, and diversifying suppliers and markets can help companies reduce their exposure to currency risk. Hedging, for example, allows companies to lock in exchange rates and reduce the uncertainty of future costs. Operational hedging, on the other hand, involves adjusting business practices such as sourcing raw materials from countries with more stable currencies or shifting production to markets that are less affected by exchange rate fluctuations. Additionally, scenario-based financial planning can help companies anticipate the potential effects of currency movements and prepare for different exchange rate scenarios. This type of planning can enable companies to make more informed decisions and reduce the risks associated with exchange rate volatility.

From an academic perspective, this study suggests that exchange rate fluctuations alone may not be sufficient to predict profitability accurately. While the relationship between exchange rates and profitability is intuitive, the results indicate that other variables need to be incorporated into future models to provide a more comprehensive understanding of the factors affecting profitability. Variables such as interest rates, inflation, and production costs could play a significant role in shaping profitability and should be included in future research models. By expanding the scope of variables considered, future studies can improve the explanatory power of the models and offer more precise insights into the dynamics between exchange rates and profitability.

In conclusion, while the lack of statistical significance in this study limits the ability to draw definitive conclusions about the impact of exchange rate fluctuations on profitability, the consistent negative trend observed suggests that exchange rates do influence the profitability of PT XYZ. The study underscores the need for companies to adopt comprehensive risk management strategies and for future research to incorporate additional factors to better understand the complex relationship between exchange rates and profitability.

Closing

Conclusion

This study aimed to analyze the effect of exchange rate fluctuations (USD/IDR) on the profitability of export-oriented manufacturing companies, with PT XYZ as a case study. As outlined in the introduction,

the footwear industry, particularly companies dependent on imported raw materials, is highly vulnerable to exchange rate volatility. The expectation was that significant depreciation of the Rupiah would negatively impact profitability indicators such as Net Profit Margin (NPM), Return on Assets (ROA), and Return on Equity (ROE).

The results confirmed a consistent negative relationship between exchange rate changes and all three profitability indicators. However, the influence was not statistically significant, with p-values exceeding the 0.05 threshold. Despite this, the coefficients of determination (R^2) ranging from 27% to 37% suggest that exchange rate fluctuations do explain a meaningful portion of profitability variance, although other internal and external factors also play crucial roles.

From these findings, it is concluded that exchange rate volatility poses a financial risk to export manufacturers like PT XYZ, but its direct impact on profitability may be dampened by effective internal strategies such as cost control, operational efficiency, and possibly hedging mechanisms. The results support previous research while highlighting the need for further study involving longer timeframes and additional macroeconomic variables.

Future Development Plan

To enhance the implementation of findings from this research into practical and academic domains, the following development steps are proposed:

1. Expanded Research Scope
   Future studies should include multiple companies across different export-oriented sectors and extend the observation period beyond six years. This would allow for panel data analysis and more robust statistical validation.
2. Inclusion of Additional Variables
   Future models should incorporate inflation, interest rates, global demand, labor costs, and production volume to provide a more comprehensive understanding of profitability dynamics.
3. Implementation of Exchange Rate Management Programs
   Companies are encouraged to develop structured hedging policies, conduct regular financial scenario planning, and adopt early warning systems to monitor exchange rate risks.
4. Training and Capacity Building
   Firms like PT XYZ could benefit from capacity-building initiatives for finance and strategy teams, focusing on currency risk management and financial forecasting.
5. Policy Collaboration
   The results may also be shared with government institutions or industry associations to design supportive monetary and fiscal policies that help stabilize the export manufacturing sector under currency fluctuations.

In summary, while the statistical evidence of direct impact is limited, the findings underscore the strategic importance of exchange rate awareness and risk management in sustaining profitability in global manufacturing operations.

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