

The Association of Exchange Rate, Foreign Debt, And Bankruptcy Risk On Hedging Decisions During the Pandemic

Asosiasi Nilai Tukar, Utang Asing, dan Risiko Kebangkrutan terhadap Keputusan Lindung Nilai pada Masa Pandemi

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ABSTRACT

This study aims to provide empirical evidence on the association between exchange rates, foreign debt, and bankruptcy risk on hedging decisions during a pandemic. The subjects of this research are Conventional General Banking companies registered with the Financial Services Authority (OJK) in 2020 and 2021. The hypotheses are tested using multiple linear regression analysis. Hedging is measured using the value of derivative instruments reported in the banks' financial statements. The test results in this study indicate that the exchange rate proxies by the mid-rate at the closing price of the rupiah exchange rate against the US dollar has no relationship with hedging decisions because the exchange rate fluctuations during the pandemic are still within reasonable limits according to the assumptions of the Ministry of Finance. Meanwhile, the results of the test of foreign debt measured by the ratio of foreign currency debt to total debt and bankruptcy risk measured by the Altman Z-score model have a relationship with hedging decisions because hedging decisions will be important to reduce the risk of changes in the value of foreign debt, and firms experiencing bankruptcy risk will implement hedging strategies to mitigate financial risk and protect the firm from significant losses.

Keywords: Hedging, Exchange Rate, Foreign Debt, Bankruptcy Risk

ABSTRAK

Penelitian ini bertujuan untuk memberikan bukti empiris tentang hubungan antara nilai tukar, utang luar negeri, dan risiko kebangkrutan terhadap keputusan lindung nilai di masa pandemi. Subyek penelitian ini adalah perusahaan Perbankan Umum Konvensional yang terdaftar di Otoritas Jasa Keuangan (OJK) tahun 2020 dan 2021. Hipotesis diuji dengan menggunakan analisis regresi linier berganda. Lindung nilai diukur dengan menggunakan nilai instrumen derivatif yang dilaporkan dalam laporan keuangan bank. Hasil pengujian pada penelitian ini menunjukkan bahwa nilai tukar yang diprosikan dengan mid-rate pada harga penutupan nilai tukar rupiah terhadap dolar AS tidak memiliki hubungan dengan keputusan lindung nilai karena fluktuasi nilai tukar pada masa pandemi masih dalam batas wajar menurut dengan asumsi Kementerian Keuangan. Sedangkan hasil pengujian utang luar negeri yang diukur dengan rasio utang valas terhadap total utang dan risiko kebangkrutan yang diukur dengan model Altman Z-score memiliki hubungan dengan keputusan lindung nilai karena keputusan lindung nilai akan penting untuk mengurangi risiko perubahan. dalam nilai utang luar negeri, dan perusahaan yang mengalami risiko kebangkrutan akan menerapkan strategi lindung nilai untuk mengurangi risiko keuangan dan melindungi perusahaan dari kerugian yang signifikan.

Kata Kunci: Lindung Nilai, Nilai Tukar, Utang Luar Negeri, Risiko Kebangkrutan

1. Introduction

The Covid-19 pandemic caused a global economic crisis, including in Indonesia. The Government has taken various measures to prevent the spread of the Covid-19 virus, including regional quarantine or restrictions on community mobility. These policies have the effect of reducing economic activity and creating conditions of uncertainty in the Indonesian economy. This condition may trigger various risks that companies will face in conducting various business activities. The risk is due to the uncertain conditions that can be seen from the high exchange rate fluctuations during the Covid-19 pandemic.

Exchange rate fluctuations are changes that occur in the exchange rate of a country's currency. This can occur due to imbalances in supply and demand in the foreign exchange market. Risks due to

changes in exchange rates, or currency risk, are experienced by various sectors of the economy, especially companies that have debt or income in foreign currencies, because changes in exchange rates can increase or decrease the cost of debt or income in domestic currency. Exchange rate risk is the possibility of suffering losses when the value of a foreign currency increases or decreases (Rachmat & Kustina, 2019). Exchange rate risk is one of the biggest concerns for companies that have debt or revenue in foreign currency, as these companies have limited control over exchange rate fluctuations. Changes in exchange rates during the pandemic are shown in Figure 1.



Figure 1. Rupiah to US Dollar Exchange Rate 2019 – 2021

Source: Bank Indonesia (data processed, 2022)

The graph in Figure 1 shows that the exchange rate between the rupiah and the US dollar fluctuates unpredictably throughout 2019-2021. In the period from December 2019 to March 2020, the rupiah fluctuated and tended to weaken against the US Dollar, but from March 2020 to June 2020, it strengthened again against the US Dollar exchange rate. At the peak of its weakening in the March 2020 period, the rupiah depreciated against the US dollar, with a value of Rp16,367/\$. Previously, in December 2019, it was valued at IDR13,901/\$, so there was an increase of IDR2,466/\$. If a company agrees in December 2019 while March 2020 is the due date, the company will pay more than IDR2,466/\$ from the transaction amount. During the Covid-19 pandemic, the value of the rupiah depreciated against the US dollar, indicating an increase in payables and receivables after conversion to rupiah. This situation may result in losses for companies that conduct transactions in foreign currencies. Therefore, the company will consider decisions on hedging strategies to reduce risks caused by exchange rate fluctuations.

The instability of the rupiah exchange rate during the Covid-19 pandemic has the potential to cause financial losses, especially for companies that have obligations in the form of foreign currency or foreign debt. Foreign debt has become a source of financing for companies for both production activities and business expansion. In addition, companies with foreign debt are vulnerable to financial risks because every transaction involving foreign currency exposes the company to uncertainty about future fluctuations in the value of foreign currencies. According to data from Indonesia's Foreign Debt Statistics in 2021, the level of foreign debt has increased during the Covid-19 pandemic.

Bank Indonesia noted that the foreign debt position of banking borrower group companies at the end of December 2021 was \$33.6 billion, an increase of 1.07 percent year-on-year (yoy). The following data on the foreign debt position of the bank borrower group companies in Indonesia are shown in Figure 2.

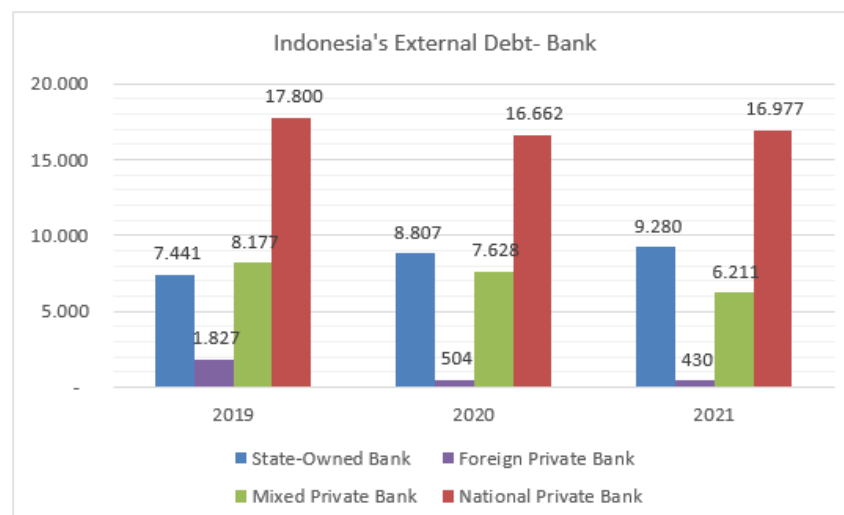


Figure 2. Private Foreign debt Position - Banks in 2019 - 2021

Source: Bank Indonesia (data processed, 2022)

Based on the chart in Figure 2, the foreign debt of banks turned positive at the end of 2021 compared to the previous year, which recorded a decline of 1.07 percent year-on-year. This increase was mainly driven by the BUMN bank borrower group, which increased by 5.37 percent yoy. Meanwhile, in 2020, the foreign debt position of the foreign private bank borrower group of US\$430 billion, mixed private banks of \$6,211 billion, and domestic private banks of \$16,977 decreased from the previous year. Meanwhile, in 2020, the foreign debt position of the foreign private bank borrower group of \$504 billion, mixed private banks of \$7,628 billion, and national private banks of \$16,662 billion decreased from the previous year. If the exchange rate fluctuates drastically, a higher amount of foreign debt may affect the financial performance of the company and increase the possibility of corporate financial problems. Under such conditions, companies will tend to take hedging measures to reduce the risks that could harm the company and to prevent the value of foreign debt from increasing due to an increase in exchange rates.

A company is in financial distress when it has difficulty meeting its obligations, when its revenues are insufficient to cover its costs, and when it suffers losses (Cielo & Manda, 2021). Based on a survey conducted by the Central Statistics Office (BPS) in 2021, 82.25% of companies experienced a decrease in revenue due to the Covid-19 pandemic. This may indicate that companies are at high risk of bankruptcy during the pandemic. Companies that have evidence of bankruptcy during a pandemic will protect the company from various risks that may occur through risk management. There are various types of risk management alternatives that companies can undertake, one of which is the use of hedging techniques.

Hedging is an action taken by a company to minimize business risk so that it can still make a profit from its business transactions. (Wiyono & Kusuma, 2017). Hedge accounting refers to the recording of changes in the value of hedged items and hedging instruments (derivative instruments that protect them) in the same accounting period or the same place in the financial statements. (Mahendra & Firmansyah, 2019). Hedge accounting has an important role in the reduction of business risks that may be a result of foreign exchange rate fluctuations. By implementing hedging, companies can take preventive measures to reduce potential losses from changes in economic or market conditions that occur in the future.

This study focuses on Conventional General Banking companies listed by the Financial Services Authority for the period 2020-2021. The sample of banking companies was selected based on the value of derivatives stated in the measurement of the company's hedging level and the existence of regulations for banks to hedge foreign debt listed in PBI number 21/1 / PBI / 2019 on banks' foreign debt and other bank obligations in foreign currency (ULN Bank).

Association Between Exchange Rates and Hedging Decisions during the Pandemic

Changes in exchange rates may affect a firm's decision to hedge its foreign exchange exposure. Companies may experience unexpected losses or gains as a result of changes in exchange rates. When exchange rates depreciate, companies may be more inclined to hedge to reduce losses that may result from changes in exchange rates. Therefore, the company will consider decisions regarding hedging strategies to reduce risks caused by exchange rate fluctuations.

Previous research by Ariana & Marlisa (2021) and Wahab (2020) found that the exchange rate had a significant positive effect on the firm's decision to hedge. However, other studies provide different results. According to Kinasih & Mahardika's (2019) research, the exchange rate does not have a significant impact on the firm's decision to hedge.

Firms are more likely to hedge as part of their risk management than not to hedge in the face of uncertainty about exchange rate fluctuations. If the exchange rate is more volatile, the firm's hedging decision will be more important. Based on the above description, hypotheses can be formulated in this study:

H1: There is a relationship between exchange rates and hedging decisions during the pandemic

Association between Foreign Debt and Hedging Decisions during the Pandemic

Companies with high levels of foreign debt face risks from volatile changes in exchange rates. Foreign debt can also increase credit risk if the company has difficulty paying foreign debt. This is due to exchange rate fluctuations in the settlement of debt transactions. Under these conditions, companies will tend to choose hedging measures to reduce risks that could harm the company and to prevent the value of foreign debt from increasing due to an increase in exchange rates.

According to the results of a previous study conducted by Kussulistiyanti and Mahfudz (2016), foreign debt has a positive and significant effect on hedging decisions. In fact, other studies provide different results. According to Prasetyono & Hidayah (2016), foreign debt has a negative effect on hedging decisions.

For companies with high levels of foreign debt, the hedging decisions taken by the company become increasingly important to reduce adverse risks from exchange rate fluctuations. This is because it can affect the company's profit or loss when the company makes payments on foreign debt. If the exchange rate of the currency used to measure the debt depreciates, the value of the foreign debt will increase and may increase the company's financial burden. Conversely, if the exchange rate of the currency used to measure the debt appreciates, the value of the foreign debt will decrease and may reduce the company's financial burden. Based on the above description, hypotheses can be formulated in this study:

H2: There is a relationship between foreign debt and hedging decisions during the pandemic

Association Between Bankruptcy Risk and Hedging Decisions During the Pandemic

An unstable economic environment and a high degree of volatility in exchange rates may increase the risk of bankruptcy for firms. Companies that are already in a difficult financial situation will be more likely to avoid additional risks that could lead to bankruptcy, such as foreign exchange risk. Under these conditions, firms will consider hedging strategies to reduce the risk of loss and increase the financial stability of the firm.

Previous research by Aditya & Asandimitra (2019) and Sudarma & Sari (2020) found that financial distress has a significant positive effect on the firm's decision to hedge. Other studies even come to different conclusions. According to Sasmita & Hartono's (2019) research, financial distress has no significant effect on the firm's decision to hedge.

When a company is in financial difficulty or financial distress, it will try to engage in risk management to avoid losses. If the firm is in financial distress, the firm's hedging decision will be a risk management decision that becomes increasingly important to reduce the risk of losses that may occur in the future. Based on the above description, the hypotheses formulated in this study are as follows:

H3: There is a relationship between bankruptcy risk and hedging decisions during the pandemic

2. Methods

Type of research and data source

This research study belongs to the category of quantitative research study. The data source used is secondary data sources, namely data obtained indirectly from official websites. In this study, the secondary data is obtained from the financial reports and annual reports of banking companies registered in Financial Services Authority (OJK) in 2020-2021 through the official website of Financial Services Authority (OJK) and the official websites of related companies.

Population and Sample

The population of this study is the banking companies registered with the Financial Services Authority (OJK) in 2020-2021. In terms of sampling, this study uses a purposive sampling technique, which uses several criteria to determine the sample.

Table 1. Purposive Sampling Research

No	Sample Selection Criteria	Total
1	Conventional Commercial Banks registered with Financial Services Authority (OJK) in 2020-2021	62
2	Conventional Commercial Banks that financial reports or annual reports cannot be accessed in the period 2020-2021	(0)
3	Banking companies with no foreign currency liabilities during 2020-2021	(14)
Total companies selection criteria		48
Total sample during 2020-2021		96

Operational Definition of Variables

The hedging variable is proxied by the value of bank derivatives as reported in the bank's financial statements. The exchange rate variable is proxied by the mid-rate of the rupiah to the US dollar, as determined by data from the Jakarta Interbank Spot Dollar Rate (JISDOR) published by Bank Indonesia. One of the functions of Bank Indonesia's middle rate is to record the value of a foreign exchange conversion in the financial statements of foreign companies every 31 December (book closing).

The foreign debt variable is measured by comparing the foreign currency debt to the total debt of the company. (Junior, 2011).

$$\text{Foreign Debt} = \frac{\text{Liability in foreign currency}}{\text{Total Liabilities}}$$

The bankruptcy risk variable is proxied by the Altman Z-score financial distress model, which is a model that identifies signs of financial failure before the firm goes bankrupt. The Altman Z-score model is formulated as follows:

$$Z'' = 6,56X1 + 3,26X2 + 6,72X3 + 1,05X4$$

Description:

X1: Working Capital/Total Assets

X2: Retained Earnings/Total Assets

X3: Book Value of Equity/Total Liabilities

X4: Book Value of Equity/Total Assets

Methods of data analysis

This study uses correlation analysis methods to test the influence between the independent variable and the dependent variable. The Statistical Package for the Social Sciences (SPSS) was used to process the data.

3. Results and Discussion

Descriptive Statistics

Table 2. Descriptive Statistics Results

	N	Min.	Max.	Mean	Std. Deviation
Exchange Rate (X1)	96	14105,00	14278,00	14191,50	86,95
Foreign Debt (X2)	96	0,01	0,64	0,25	0,18
Financial Distress (X3)	96	-7,10	5,29	1,95	1,76
Hedging (Y)	96	0,00	17,16	7,34	5,91

Source: Data processed by researchers using IBM SPSS 25, 2023

According to the results of the descriptive analysis above, the exchange rate variable has the lowest data of IDR14,105, the price of the Rupiah exchange rate against the US Dollar at the end of 2020. While the highest exchange rate occurred in 2021, which closed at IDR 14,278. The average exchange rate in 2020-2021 is IDR 14,191.50 with a standard deviation of 86.95, which is smaller than the average, so the exchange rate is fairly evenly distributed and there is no significant outlier data.

The foreign debt variable has the lowest data of 0.01 which is found in PT Bank Ina Perdana Tbk in 2020. This means that 1% of the total debt of PT Bank Ina Perdana is dominated by foreign currency debt. While the highest data of foreign debt is found in PT Bank HSBC Indonesia Tbk in 2020 amounting to 0.64 which means that the total debt of PT Bank HSBC Indonesia Tbk is dominated by foreign currency debt of 64%. The average value of foreign debt is 0.25, which explains that the sampled banking companies in this study have relatively low foreign debt by looking at the proximity of the average value to the minimum. Although the standard deviation is 0.18, which is lower than the average value, this indicates that the foreign debt is fairly evenly distributed and there is no significant outlier data.

Bankruptcy risk proxied by financial distress has the lowest data of -7.10, which is found at PT

Bank Raya Indonesia Tbk in 2021. This indicates that in 2021, PT Bank Raya Indonesia Tbk will experience a level of bankruptcy risk in the distressed category, namely the danger zone. Meanwhile, the highest data is 5.29, which is located at PT Bank Shinhan Indonesia Tbk in 2021, which indicates that it is experiencing a level of bankruptcy risk in the safe zone category, which means that the company has a stable financial condition and can meet its financial obligations promptly. The average value of financial distress is 1.95, which explains that the average banking company sampled in this study is in the grey zone, namely the vulnerable/cautious zone, and does not experience a significant risk of bankruptcy. Although the standard deviation of 1.76 is lower than the average, financial distress is fairly evenly distributed and there is no significant outlier data.

Hedging, proxied by bank derivative bills, has the lowest data of 0.00, which is found in 18 conventional commercial banks. This means that these banks did not make any hedging decisions on derivative transactions during the study period. Meanwhile, the highest data of 17,16 is found in PT Bank Shinhan Indonesia Tbk in 2021. The average value of hedging is 7.34, which explains that the average banking company sampled in this study has a relatively low derivative value by looking at the proximity of the average value to the minimum. Although the standard deviation is 5.91, which is lower than the average, the hedging is fairly evenly distributed and there is no significant outlier data.

Test Results of the Coefficient of Determination (*R Square*)

Table 3. Test Results of the Coefficient of Determination (*R Square*)

<i>Model Summary</i>				
Model	<i>R</i>	<i>R square</i>	<i>Adjusted R square</i>	<i>Std. Error</i>
1	0,511	0,261	0,237	0,581

Source: Data processed by researchers with IBM SPSS 25, 2023

According to the result, it is known that the *Adjusted R Square* value is 0.237 or 23.7%. These results indicate that the ability of the independent variables exchange rates (X1), foreign debt (X2), and bankruptcy risk (X3) in explaining the dependent variable, namely hedging (Y) is 23.7%. While the remaining 76.3% is influenced or explained by other variables outside the independent variables that are not included in the model.

Test Result of the Correlation Analysis**Tabel 4. Test Result of the Correlation Analysis**

		Correlations		
		X1	X2	X3
Hedging (Y)	Pearson Correlation	0,033	-0,475	0,281
	Sig. (2-tailed)	0,748	0,000	0,005
	N	96	96	96

Source: Data processed by researchers with IBM SPSS 25, 2023

Association Between Exchange Rates and Hedging Decisions during the Pandemic

Based on the table of individual parameter significance test results, it can be seen that the exchange rate variable has a significance value of 0.748 ($0.500 > 0.05$) and the coefficient (direction) is positive at 0.033. The test results show that the exchange rate does not have a significant relationship with hedging decisions during a pandemic in 48 conventional commercial banks listed on the Financial Services Authority (**H1 is not supported**).

The exchange rate fluctuations during the Covid-19 pandemic are still within reasonable limits considering the macro assumptions set by the Ministry of Finance in 2020 of IDR 14,400. Meanwhile, the closing rate of the rupiah against the US dollar in 2020 is IDR 14,105. Furthermore, the macro assumption set by the Ministry of Finance in 2021 is IDR 14,278. Meanwhile, the closing price of the rupiah exchange rate against the US dollar in 2021 is IDR 14,600. This shows that the rupiah currency was considered reasonable during the observation period, so there was no need to worry about exchange rate risk. If the average rupiah exchange rate depreciates against the dollar, it does not affect the banks' decision to hedge through derivative instruments. This is because the risks faced by banking companies can be minimized by using other risk management techniques, namely the use of reserve funds through the management of productive assets and the management of the net foreign exchange position (NOP).

This shows that exchange rate fluctuations during the pandemic do not affect banks' hedging decisions. These findings are supported by the research conducted by Kinasih & Mahardika (2019) and Ariana & Marlisa (2021), who found that exchange rates have no relationship with hedging decisions.

Association Between Foreign Debt and Hedging Decisions during the Pandemic

The foreign debt variable has a significance of 0.000 ($0.000 < 0.05$) and a negative coefficient (direction) of -0,475. The test results show that foreign debt has a significant relationship with hedging decisions during a pandemic in 48 conventional commercial banks listed on the Financial Services Authority (**H2 is supported**).

The purpose of hedging in a company is how the company can minimize translation risk by protecting liabilities affected by foreign exchange. (Hoesada, 2020). This refers to foreign debt, which is debt that is affected by foreign exchange fluctuations. The weaker the rupiah against other countries' currencies, which is the currency unit for foreign debt, the banking companies will have to pay more due to changes in the value of foreign debt, which is getting bigger. Therefore, the decision to hedge foreign debt is very important to reduce the risk of changes in the value of foreign debt. Meanwhile, the negative relationship between foreign debt and hedging is due to the characteristics of the Indonesian capital market, where companies with high foreign debt tend to reduce operating and administrative costs, so they do not budget for the need to hedge. In practice, it is also observed that companies not only have foreign currency liabilities but also foreign currency assets. Foreign currency assets can be used by companies to repay foreign currency debt. Therefore, companies do not always implement hedging policies.

These results are supported by the findings of Hidayah and Prasetyono (2016), who found that foreign debt has a negative relationship with hedging decisions, meaning that the higher the bank's foreign debt, the lower the hedging decision.

Association Between Bankruptcy Risk and Hedging Decisions during the Pandemic

The Bankruptcy Risk variable has a significance of 0.005 ($0.044 < 0.05$) and a positive coefficient (direction) of 0,281. The test results show that bankruptcy risk has a significant relationship with hedging decisions during a pandemic in 48 conventional commercial banks listed in the Financial Services Authority. Meanwhile, based on the results of regression analysis, shows that bankruptcy risk has a positive relationship with hedging decisions, where the higher the level of bankruptcy risk, the bank's decision to hedge will increase. **(H3 is supported).**

Bankruptcy risk refers to the possibility that a company will be unable to meet its financial obligations. Companies facing the risk of bankruptcy will try to implement risk management to avoid losses. Based on the results of the Z-score calculation, there are 24 banks in the safe zone, 55 banks in the vulnerable or grey zone, and 17 banks in the danger or distress zone. This shows that most of the banks in this study have the potential to experience financial difficulties during the Covid-19 pandemic. In this situation, banks will have to be cautious in their financial management, especially in transactions involving the use of foreign exchange. Banks will implement hedging strategies through derivative instruments to reduce financial risk and protect the company from the possibility of greater losses in difficult financial situations. This suggests that the level of bankruptcy risk during the pandemic has an impact on banks' decision to hedge. Meanwhile, the positive relationship between bankruptcy risk and hedging can be interpreted to mean that the higher the bankruptcy risk of the firm, the more important the decision to hedge with derivatives.

These results are supported by the studies conducted by Aditya & Asandimitra (2019) and Sudarma & Sari (2020), who found that financial distress is related to the hedging decision, which means that the greater the risk of financial distress, the more the company will act in implementing hedging.

4. Conclusions

This research was conducted to obtain information on the association between exchange rates, foreign debt, and bankruptcy risk on hedging decisions during a pandemic. Based on the results of the hypothesis testing carried out, the following conclusions can be drawn:

- a. The exchange rate variable is not related to hedging decisions during the pandemic. This is because exchange rate fluctuations during the Covid-19 pandemic are still within reasonable limits based on the macro assumptions of the Ministry of Finance and the use of bank reserves. Thus, hedging decisions are not influenced by the exchange rate.
- b. Foreign debt variables are related to hedging decisions during a pandemic. This is because if the rupiah depreciates against the currency that is the unit of value of the foreign debt, the banks will have to pay more due to changes in the value of the foreign debt that is increasing. So, the decision to hedge foreign debt is very important to reduce the risk of changes in the value of foreign debt.
- c. Bankruptcy risk variables are related to hedging decisions during a pandemic. This is because companies that are potentially at risk of bankruptcy need to be careful in their financial management and carry out risk management with hedging strategies to reduce financial risk and protect the company from the possibility of greater losses in difficult financial situations. Thus, the level of risk of bankruptcy during a pandemic will have an impact on banks' decisions to engage in hedging activities.

Pay attention to other factors that may influence hedging decisions in banking firms. Expand the research object and extend the research period to provide more comprehensive research results. To add measurement instruments related to exchange rate variables so that they are not limited to the exchange rate of the rupiah to the US dollar

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