

The Effect of Firm Size, Leverage, and Liquidity on Hedging Decisions of Consumer Goods Industry on the Indonesia Stock Exchange

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ABSTRACT: Consumer goods companies that conduct foreign exchange transactions will experience risk of foreign currency exposure. The purpose of this study is to explain the effect of firm size, leverage, and liquidity on hedging decisions in consumer goods industry on the Indonesia Stock Exchange for the period of 2014-2018. Sampling in this study using purposive sampling technique and got as many as 36 companies that meet the criteria with 180 years of company observation. The data method uses the non-participant observation method through the company's annual financial reports published on the IDX official website at www.idx.co.id. The data analysis technique used in this study is logistic regression analysis technique. The results show that firm size has a positive significant effect on hedging decisions, leverage has a negative insignificant effect on hedging decisions, and liquidity has a negative significant effect on hedging decisions.

KEYWORDS : Firm Size, Leverage, Liquidity, Hedging.

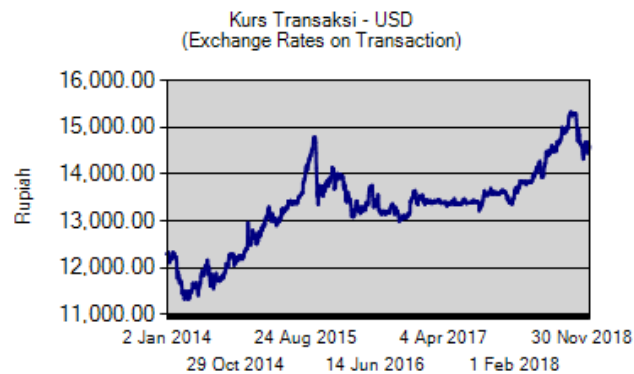
I. INTRODUCTION

Nowadays, there are a lot of national companies carry out business activities that cross the borders of a country or are known as international business activities. Companies that carry out international business activities are generally based on the type of business activity and/or based on the evolutionary stages of the company's development. First, based on the type of business activity, international business could be classified into four types, namely trade in goods (exports and imports); trade in services, for example banking services, insurance, hotel, travel and transportation; portfolio investment, the purchase of domestic bonds or stocks by foreign individuals or companies; and direct investment or often called Foreign Direct Investment (FDI).

Second, in accordance with the evolutionary stages of the development of the company. A company might not grow and develop into a multinational or global company in a short time. However, it needs to go through several stages of internationalization. The stages of business internationalization include, the intensity of its contact with international markets, the focus of international operations, the orientation of the company, the types of international activities, and the organizational structure, each of which goes through five stages (Syaifuddin et al., 2015: 11). However, based on practice, not all companies are able to reach the fourth or fifth stage, even some companies that have reached the fifth stage could move back to the previous stage.

If a company has succeeded in conducting international business activities, of course the company will feel the positive impact of international business, including increasing business productivity, expanding markets, and reaping more profits. One of the transactions contained in international business is international trade. International trade causes an increase in competition and fluctuations in market prices, resulting in an increase in business risk that must be borne by companies Jiwandhana and Triaryati (2016).

Companies often decide to face a risk when they see the benefits behind the risks they take (Hanafi, 2016: 9). Risk could be identified by first measuring the exposure faced by the company. Exposure is the rate at which the company's cash flow is affected by changes in exchange rates. Exposures faced by companies related to changes in exchange rates could be in the form of transaction exposure, economic exposure, operating exposure, and accounting exposure (Hanafi, 2016: 231). The biggest risk faced by companies conducting international transactions is foreign exchange exposure. The risk of foreign exchange exposure is caused by international trading activities that could not be separated from the use of foreign currencies in their transaction activities. Conducting international trading activities could expose a company to foreign exchange risk which has a negative impact, which might endanger the company's sustainability.



Source: www.bi.go.id, 2019

Figure 1. US Dollar Foreign Exchange Rates

Based on the figure above, on January 2, 2014 the transaction rate of IDR to USD was IDR 12,303 per 1.00 USD, then strengthened to Rp12,224 per 1.00 USD on 29 October 2014. The exchange rate of IDR to USD experienced a sharp decline on 24 August 2015 to IDR 14,068 per 1.00 USD and strengthened again to IDR 13,339 per 1.00 USD. The IDR transaction rate to USD weakened by 0.41% on April 4, 2017 to IDR13,393 per 1 USD and again weakened on February 1, 2018 to IDR13,496 per USD 1.00. Then, the USD transaction exchange rate against IDR strengthened by 6.8% to IDR 14,411 per USD 1.00 on November 30, 2018. Based on the data shown in the graph, companies conducting foreign exchange transactions will experience a risk of foreign exchange exposure. If the company fails to manage the risk of foreign exchange exposure, the company might bear significant losses, even resulting in destruction. Companies that trade internationally should optimize their risk management activities to avoid losses due to failure to manage their risk. Therefore, it is important to manage risks hence that the company could survive, or at least minimize the risks that might be faced.

There are several risk management techniques that companies could use to manage their risks. According to Madura (2012: 211), the action in risk management to protect a company from exposure to foreign currency is hedging. Hedging is a measure to protect the companies to avoid or reduce the risk of loss on foreign currency as a result of business transactions⁵. Hedging works similar to insurance, that is, if we lose due to certain risks, we get compensation from other contracts. In insurance, compensation is provided by an insurance company, while for hedging with derivative instruments, compensation is provided by another party (counter party) who sells the derivative contract (Hanafi, 2016: 250).

Hedging could be done by using derivative instruments. As explained by the Indonesia Stock Exchange, a derivative is a contract or financial agreement between two or more parties in order to fulfill a pledge to buy or sell an asset or commodity that is used as an object that is traded at a time and price which is a mutual agreement between the seller and the buyer. (IDX, 2019, www.idx.co.id). Derivative instruments inter alia forward contracts, future contracts, option contracts, and swap contracts (Madura, 2018: 131).

The hedging decision could be affected by external factors and company internal. This study focuses on internal company factors to see how much hedging decisions are applied. Internal factors identified as affecting the hedging decision variables in this study are firm size, leverage, and liquidity. Based on research conducted by Bhagawan and Lukose, Asghar et al, and Chaudhry et al, it was found that hedging decision could be influenced by firm size, leverage, and liquidity.

Firm size is the measurement of a company size that could be valued by total assets, total sales, total profits, tax expenses and others (Brigham and Houston, 2011: 4). Firm size could be measured by the total assets' natural logarithm. Large companies usually have more operational activities with greater risk, thus it could be affirmed that the bigger the company size, the greater the risk the company would face.

Leverage is a debt ratio or better known as the solvency ratio, which is the ability of the company to fulfill its financial liabilities in both the short and long term, or to measure how far the company is funded by debt (Wiagustini, 2014: 85). Leverage can be measured using the Debt to Equity Ratio (DER). DER is a comparison of total company liability, both long-term and short-term liability, with the owner's equity of the company. It could be concluded that the higher the DER value, it means the higher the company holding the liabilities, therefore, the company would do the hedge.

Another factor that influences a company's hedging decision is liquidity. Liquidity of a company shows the ability to pay short-term liabilities promptly. The liquidity value of a company is denoted by the size of current assets (Sartono, 2012: 116). Liquidity could be measured by counting the current ratio. Current ratio is measured by comparing the current assets with current liabilities of the company. The company would always be liquid if the current assets which are available have a greater value than the liabilities. The higher the liquidity,

the lower the use of derivative instruments in the company because the risks that the company might face tend to be low and the company has sufficient reserve funds to deal with these risks that possible arise.

Previous research results show different results (research gaps) related to the characteristics of each company sector fitly it is very interesting to further investigate the truth of the results of this study by examining the consumer goods industry sector listed on the Indonesia Stock Exchange in 2014-2018 period. The choice of choosing the consumer goods industry sector is grounded by during the 2014-2018 period, an interesting phenomenon occurred in the ratio of debt use by the nine corporate sectors on the Indonesia Stock Exchange. Companies on the consumer goods industry experienced a very extreme fluctuations in the DER value compared to other sectors. This is due to a significant increase in the DER value. The negative DER value in the consumer goods sector is due to the negative value in equity due to a very high decline in profit. In addition, the consumer goods industry sector is interesting to research because this sector has quite high export and import activities, which of course will use foreign currency in its transactions. Therefore, this study takes a sample in the consumer goods sector with extreme fluctuations in DER values and the use of foreign exchange in transactions, thus it is interesting to investigate further.

Based on the obvious background that has been defined, the purpose of this study is to find out the effect of firm size, leverage, and liquidity on hedging decisions in consumer goods industry sector on the Indonesia Stock Exchange for the period of 2014-2018.

Through this research, it is hoped that it will be able to make an empirical contribution to the science of financial management regarding hedging policy which is influenced by the variables of firm size, leverage, and liquidity, and is expected to be a reference for companies to take strategic steps in making hedging decisions.

II. HYPOTHESIS DEVELOPMENT

Risk is an event that usually brings harm to the organization or company that is facing it which is often unwanted. There are two characteristics of the risk, the first is the uncertainty of an event, and the second is the uncertainty that if it occurs would cause a loss. Risk management could be defined as managing the risks that organizations and companies are currently facing or will face to increase company value. The purpose of risk management is to manage risk in order to make the company able to survive and optimize the risks it faces.

Hedging is an action taken by a multinational company to protect the company from exposure to foreign currency (Madura, 2012: 211). Hedging to manage foreign currency exposure risk is carried out by establishing a portfolio using foreign currency derivative instruments. Companies could sell or buy a number of currencies to avoid the risk of loss due to foreign exchange differences that occur due to business transactions carried out by the company⁵. Brigham and Houston (2011: 347) state that a derivative is a financial contract between two parties to transact an asset at a fixed price on a date that will occur in the future. If the multinational company has decided to hedge all or partially of its transaction exposure, the company could use the hedging instruments in the form of forward contracts, futures contracts, options, and swaps.

Firm size is a classification of firm size according to various ways. Basically, there are three categories of firm size, videlicet large firms, and small firms. The bigger of the company size, the greater the risk faced by the company. A large company has more operations than a smaller company. The increased of operational activities tend to create a greater risk. This might encourage a large company to make decisions in hedging. According to Guniarti (2015), companies with large sizes tend to act carefully in managing the company and tend to do more hedging activities. This statement is also supported by research from Lee (2019) which states that large companies will have a tendency to hedge because hedging facilitates high growth companies to maintain sufficient funds to finance current projects. Raghavendra and Velmurugan (2014) found that firm size has positive significant relationship to hedging decisions and indicates that larger companies hedge more than smaller companies. Bhagawan and Lukose (2017), Lee (2019), Cheng et al., (2017), Saragih and Musdholifah, (2017), and Megawati et al., (2016) also found that firm size has a positive and significant effect on hedging decisions. The results of previous studies indicate a positive and significant effect between firm size and hedging decisions. Based on the research results, the following hypothesis is obtained.

H1 = Firm size has positive significant effect on hedging decisions.

Leverage or referred to the solvency ratio is the ability of a company to pay off its liability both in short and long term or to measure how much the company is funded with debt (Wiagustini, 2014: 85). Companies that have a low solvency ratio face a smaller risk of loss when the economy is in decline but have a low rate of return when economic conditions are high. Conversely, companies that have a high solvency ratio face a large risk of loss but have a high chance of gaining profit. Guniarti (2015) states that leverage is also a means of encouraging increased profits or returns without increasing investment. A high leverage ratio indicates a high proportion of debt use compared to equity use, and the higher the risk borne by the company. To overcome this risk, the company could apply the risk management by making hedging decisions. Previous research conducted by Asghar et al., (2018), Bhagawan and Lukose (2017), Klingeberg et al., (2018), Nuzul and Lautania (2015), Yong et al., (2014), and Guniarti (2015) found that there is a significant relationship between leverage and the

company's hedging policy. Previous research results indicate a positive and significant relationship between leverage and hedging decisions. Based on the research results, the following hypothesis is obtained.

H2 = leverage has positive significant effect on hedging decisions.

Liquidity is the ability of a company to pay its financial debts in the short term with available current funds. In order for the company to always be liquid, the current position of available funds must be greater than current debt (Wiagustini, 2014: 85). The company's inability to meet its current liability is an extreme liquidity problem. This problem could lead to the sale of investments and other assets, and even lead to insolvency and bankruptcy problems. The company will always be liquid if the available current assets have a greater value than debt. The more liquid a company is, the smaller the risk of failure of the company to fulfill its short-term liability, which results in lower hedging activity. This is supported by research conducted by Klingeberg et al., (2018), Velasco (2014), Megawati et al., (2016), Bhagawan and Lukose (2017), Chaudhry (2014), Dewi and Purnawati (2016), and Azwan et al., (2017) show that liquidity has a negative effect on the use of derivative instruments. Previous research results indicate a negative and significant relationship between liquidity and hedging decisions. Based on these results, the following hypothesis is obtained.

H3 = liquidity has a negative significant effect on hedging decisions.

III. METHODS

The approach used in this study is qualitative and quantitative approach in the associative form. Through this research it would be possible to build a theory that could function to explain, predict and control a symptom. This study uses dependent variables that is hedging, and the independent variables are firm size, leverage, and liquidity.

The scope of this study is on consumer goods industry on the Indonesia Stock Exchange (IDX) in the 2014-2018 period. The object of this study is the hedging decision which is influenced by the variables of firm size, leverage, and liquidity in consumer goods industry sector listed on the Indonesia Stock Exchange in the 2014-2018 period.

The hedging variable in this study is stated in a dummy variable. Consumer goods company that use derivative instruments as hedging activities are given the number 1, while consumer goods company that do not hedge using derivative instruments will be given the number 0.

The firm size variable in this study is measured using the natural logarithm of the total assets. Leverage variable in this study is proxied by the debt to equity ratio (DER) that is calculated by assessing the ratio of debt to equity, and the liquidity variable in this study is proxied by the current ratio by comparing current assets with current liabilities owned by consumer goods company.

The types of data used in this study are quantitative and qualitative data. Quantitative data used in this study include total assets, total debt, total equity, total current assets, and total current liabilities, while the qualitative data used in this study is a depiction of the state of consumer goods industry on the Indonesia Stock Exchange (BEI) in the 2014-2018 period who made hedging decisions. The data source used in this research is secondary data. Secondary data used in this study is the annual reports of consumer goods industry on the IDX in the 2014-2018 period that made hedging decisions.

The population of this study is as many as 40 consumer goods industry on the Indonesia Stock Exchange in the 2014-2018 period. Determination of the sample in this study is based on consumer goods industry that meets the criteria with a purposive sampling method. Some of the criteria that were taken into consideration in selecting a sample of this study are shown in Table 1. below.

Table 1. Sampling Criteria for Consumer Goods Industry for the 2014-2018 Period

No.	Description	Number of Companies
1.	Consumer goods industry on the Indonesia Stock Exchange in the period of 2014-2018	40
2.	Consumer goods industry that do not publish complete data (financial reports and annual reports) in the 2014-2018 period	2
3.	Consumer goods industry that do not conduct foreign exchange transactions in the 2014-2018 period	2
Companies that meet the sampling criteria		36
Observation year		*5
The total sample during study period		180

The data collection method used is in the form of non-participant observation by viewing, studying descriptions from books, journals, theses, theses and quoting notes obtained from documents of the Indonesia

StockExchange (IDX) in the form of annual financial statements of consumer goods industry and their notes on 2014-2018 through the official IDX website at.

The data analysis technique used to solve the problems contained in this study is the logistic regression analysis technique. The stages of testing the logistic regression model in this study include the feasibility test of the model, assessing the overall model, multicollinearity test, classification matrix test, determination coefficient and partial test (t test).

IV. RESULTS AND DISCUSSION

The data in this study include independent variables, namely firm size (X1) which is proxied using the natural logarithm of total assets, leverage (X2) which is proxied using the Debt to Equity Ratio (DER), and liquidity (X3) which is proxied using the current ratio.

Table 2. Independent Variable Descriptive Test Results

	N	Minimum	Maximum	Mean	Std. Deviation
Firm Size	180	11.48	18.39	14.69	1.64
Leverage	180	-8.34	5.20	0.79	1.11
Liquidity	180	34.26	1025.42	271.24	192.61

The minimum value of the firm size of 11.48 is found at PT Kedaung Indah Can Tbk. in 2014, while the maximum value of 18.39 contained in PT Indofood Sukses Makmur Tbk. 2018. The average size variable is 14.69 and the standard deviation is 1.64. In the second variable, leverage, a minimum value of -8.34 is obtained in PT Bentoel Internasional Investama Tbk. in 2014, while the maximum value is 5.20 which is found at PT Bumi Teknokultura Unggul Tbk. 2015. The average of the leverage variable is 0.79 and the standard deviation is 1.11. The third variable, liquidity, has a minimum value of 34.26 which is found in PT Bumi Teknokultura Unggul Tbk. in 2014, while the maximum value is 1025.42 which is found in PT Industri Jamu and Pharmacy Sido Muncul Tbk. 2014. The average liquidity variable is 271.24 with a standard deviation of 192.61.

Table 3. Test Results of Bound Variable Frequency

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	131	72.8	72.8
	1	49	27.2	100.0
Total	180	100.0	100.0	

Table 3. shows that consumer goods industries that carry out hedging activities are given code 1 while consumer goods companies that do not hedge are given code 0. Based on table 4.3 there are 49 hedging activities carried out by consumer goods industries with a percentage of 27.2%, whereas there were 131 company activities in the category of not using hedging and the percentage was 72.8%.

Table 4. Hosmer and Lemeshow Test

Step	Chi-square	Df	Sig.
1	12.949	8	0.114

The statistical value of the Hosmer and Lemeshow Test is 12.949 with a significance probability of 0.114. The significance value of 0.114 indicates that the model in this study is acceptable because it matches the observation data and could explain the conjunction between the independent and dependent variable.

Table 5. Iteration History^{a,b,c} Block Number=0

Iteration	-2 Log likelihood	Coefficients Constant
Step 0	1	-0.911
	2	-0.982
	3	-0.983
	4	-0.983

Table 6. Iteration History^{a,b,c,d} Block Number=1

Iteration	-2 Log likelihood	Constant	Coefficients		
			SIZE	DER	CR
Step 1	1	-5.270	0.343	0.017	-0.003
	2	-6.681	0.465	-0.024	-0.005
	3	-7.038	0.508	-0.048	-0.007
	4	-7.086	0.515	-0.054	-0.007
	5	-7.087	0.515	-0.054	-0.007
	6	-7.087	0.515	-0.054	-0.007

The value at -2 Log Likelihood (block number = 0) is 210.764 and after inserting three independent variables the value of -2 Log likelihood at the end has decreased to 166.328. The decrease that occurs at the -2 Log Likelihood value indicates a good regression model or in other words the hypothesized model fits the data.

Table 7. Correlation Matrix

		Constant	SIZE	DER	CR
Step 1	Constant	1.000	-0.967	-0.197	-0.072
	Firm Size	-0.967	1.000	0.045	-0.152
	Leverage	-0.197	0.045	1.000	0.347
	Liquidity	-0.072	-0.152	0.347	1.000

Based on the correlation matrix, there is no intervariable coefficient value that is greater than 0.8, thus could be ensured that there are no serious symptoms of multicollinearity between the variables.

Table 8. Classification Table^a

		Predicted			Percentage Correct
		Hedge			
		Observed	0	1	
Step 1	Hedge	0	121	10	92.4
		1	26	23	46.9
Overall Percentage					80.0

The number of samples who did not do hedging activities was 131 samples (121 + 10). The regression model in this study shows a reduction in the number of samples from 10 companies, thus the total sample that does not do hedging activities is 121 companies. The classification accuracy in this model is 92.4% to predict the possibility of a company not doing hedging activities. There were 49 samples (26 + 23) who did hedging activities. This model predicts a reduction of 26 company samples, thus the total sample of companies predicted to hedge is 23 companies. The classification accuracy in this model to predict the possibility of a company hedging is 46.9%. Overall, the classification accuracy of this regression model is 80.0%.

Table 9. Model Summary

Step	-2 Log Likelihood	Cox & Snell R Square	Nagelkerke R Square
1	166.328 ^a	0.219	0.317

The test results of the coefficient of determination show the Nagelkerke R Square value of 0.317. This value means that the variation of the variable firm size, leverage, and liquidity (independent variable) is able to explain the variation of hedging (dependent variable) by 31.7%, while 68.3% is explained by variations in other variables not affixed in the regression equation model.

Table 10. Variables in the Equation

		B	S.E	Wald	Df	Sig.	Exp(B)
Step ^a	Firm Size	0.515	0.122	17.763	1	0.000	1.674
	Leverage	-0.054	0.162	0.113	1	0.737	0.947
	Liquidity	-0.007	0.002	13.675	1	0.000	0.993
	Constant	-7.087	1.859	14.539	1	0.000	0.001

The firm size variable shows the regression coefficient value of 0.515 with a variable probability value movement of 0.000 that is smaller than the 0.05 (5%) significance level, thus H1 is accepted and H0 is rejected, therefore the firm size variable has a positive significant effect on the hedging decision. The results of this study, which show a positive and significant value, mean that the greater the size of a company, the greater the probability of the company hedging to protect its assets. Companies with large sizes tend to have more and wider operational activities than companies with small sizes. These activities could take the form of international transactions such as export-import, which aim to expand market share, increase company production, and ultimately increase company profits. Of course, international transactions carried out by companies will involve several foreign currencies. The use of foreign currency in international transactions might result in foreign exchange exposure that will be faced by companies. Therefore, companies with large sizes will then hedge to avoid the impact of adverse changes in currency exchange rates. The results of this test are in accordance with study conducted by Lee (2019), Bhagawan and Lukose (2017), Raghavendra and Velmurugan (2014), and Guniarti (2015) who conducted research on firm size and found that firm size had a positive significant effect on hedging decisions.

The debt to equity ratio (DER) variable which is a proxy for leverage shows a regression coefficient value of -0.054 with a variable probability value movement of 0.737 which is greater than the significance level of 0.05 (5%), thus H2 is rejected and H0 is accepted, then the leverage variable has a negative and insignificant effect on hedging decisions. The results of this study state that leverage has a negative and insignificant effect because companies that carry out international transactions have debts that are not dominated by foreign currencies. This could be proven based on the results of data processing obtained, which is only 27.2% of the total sample that performs hedging activities, compared to companies that do not hedge a total of 72.8% of the total sample. Most of the company's debt comes from within the country (in Rupiah). In that event, the company does not hedge because the company does not yet need protection from foreign exchange exposure and

companies that have high debt are also not necessarily hedging. In addition, a company with a high DER ratio will also be a company that is more depressed financially and therefore will have difficulty paying interest to debtors, therefore the company tend not to use hedging to reduce company risk. The results of this test are in accordance with the findings of Khan et al., (2018),²⁵, Yavas (2016), Kussulistiyanti and Mahfudz (2016), as well as Jiwandhana and Triaryati (2016) who found that DER has a negative insignificant effect on hedging decisions.

The liquidity variable shows a regression coefficient of -0.007 with a variable probability value movement of 0.000 which is smaller than the significance level of 0.05 (5%), thus H3 is accepted and H0 is rejected, fitly, liquidity has a negative significant effect on hedging decisions. A company with a high level of liquidity ratio shows that it is smooth in fulfilling short-term liabilities, which means that the company has a greater value of current assets than debt. The more liquid a company is, the lower the use of derivative instruments in the company because the risks that might be faced tend to be low, hence the company has sufficient reserve funds to deal with these risks that possible arise. Conversely, a low current ratio value indicates the inability of the company to encounter its short-term obligations and finance its operational activities, then the risk of failure it faces is higher and the company needs to hedge to manage its risks. The results of this test are in accordance with study conducted by Bhagawan and Lukose (2017), Chaudhry (2014), Megawati et al., (2016), as well as Dewi and Purnawati (2016) who state that the higher the liquidity ratio, the lower the use of hedging.

This research is expected to provide an empirical contribution to financial management science and is expected to be used as input for companies conducting international transactions in order to reduce risks arising from exposure to foreign exchange rates.

V. CONCLUSION

Firm size has a positive and significant effect on hedging decisions of consumer goods industry. This is due to the fact that a company with a large size has a wide range of operational activities, thus it is necessary to hedge to avoid the impact of adverse currency exchange rate changes. Leverage has a negative and insignificant effect on the hedging decision of consumer goods industry. This is caused by most of the debt owed by companies comes from within the country using the Rupiah currency hence that companies tend not to hedge. Liquidity has a negative significant effect on hedging decisions of consumer goods companies. This is due to the more liquid of a company is concurring that the company has a greater value of current assets than debt. In that event, the risks faced tend to be low, hence that companies tend not to hedge. Likewise, companies with low current ratio values show their inability to fulfill their short-term liabilities and finance their operational activities then the risk of failure they face is higher and companies need to hedge to manage their risks.

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