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The Potential Impact of Currency Risk on Banks Performance

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Abstract

The purpose of this study is to investigate the potential impact of currency risk on banks performance in Indonesia. This study uses transaction and translation gain or loss divided by total asset to measure currency risk, while banks performance is measured by return on asset (ROA). This study also uses 29 commercial banks that are listed in Indonesia Stock Exchange for the period 2014-2018 and has 133 observations as final sample. Using panel data analysis, this study finds that transaction risk as proxies of currency risk have significant impact on the financial performance of commercial banks in Indonesia, while translation risk as proxies of currency risk do not have significant impact on the financial performance of commercial banks in Indonesia. Meanwhile, this study finds that credit risk, operational risk and interest rate has negative impact on banks performance and capital risk and bank size has positive impact on banks performance. The result of this study has implication that high risk high return for banks performance.

Keywords : *Banking, Currency risk, Risk management, Commercial Banks* JEL classification – C33, G21, G32

Introduction

Background

The management's ability to manage inherent risk effectively is one of the main success factor for any institution (Kamau et al., 2015). In practice, banks often facing a large number of risk such as credit risk, liquidity risk, exchange rate risk, market risk, and interest risk, among others, risk that can threaten a bank's survival and success (Al-Tamimi & Al-Mazrooei, 2012). In addition, one of the main risk faced by banks is currency risk. Allayannis et al. (2003) point out that the growing number of companies must be analyzing and managing exchange rate risk as an integral part of their operations in the global economy.

In managing exchange rate risk, it is necessary to preparing a hedging strategy, which is most often connected with measuring currency risk exposure and therefore can deciding on the right actions taken to cover the risks (Fiedor & Hołda, 2016). Failure to manage currency risk can have a negative impact on financial performance, thereby reducing achievement of bank goals. These losses occur because of inadequate currency risk management. In Indonesia, banking sector plays a central role in the country's financial system and the economy as a whole (Raz, 2018). Commercial banks, also known as conventional banks, has undergone a significant transformation in the last decade due to advances in technology, the globalization of financial markets, changes in demand for bank services, as well as geographic regulations.

This study continues the study of Kamau et al. (2015) which finds that currency risk do not have impact on the financial performance of multilateral banks. Kamau et al. (2015) conducted a previous research in the period 1998 - 2006 in multilateral banks, and suggesting the future research to investigate the relationship of currency risk and financial performance of



commercial banks. Previous studies showed that currency risk had no significant impact on the financial performance, but for non-financial firms in the United States (Rodgriguez, 1977; Business International Money Report, 1977; Cooper et al., 1978). So, this study is following the suggestion of Kamau et al. (2015) by investigating the relationship of currency risk and financial performance of commercial banks and separating two kinds of currency risk presentation in financial report, namely transaction risk and translation risk. Kamau et al. (2015) did not separate both kinds of currency risks. The separation of these kinds of currency risks presentation is important, due to the nature and different potential the impact of transaction risk and translation risk on banks performance. Therefore, the separation investigation of transaction risk and translation risk on commercial banks performance is the objective and also the main contribution of this study.

Literature review

Theoretical framework

Nowadays, banking industry facing a large number of risks, including risks that can threaten the survival and success of the bank due to the increasing uncertainty that resulting from currently turbulence business environment. Al-Tamimi & Al-Mazrooei (2012) points out that banking industry is a high-risky business. For this reason, efficient risk management is absolutely needed. According to Bank Indonesia, risk is the potential loss due to a certain event. Referring to Bank Indonesia Regulations (PBI) which is concerning Application of Risk Management for Commercial Banks, there are eight type of risks that must be managed by banks, namely: credit risk, market risk, operational risk, liquidity risk, compliance risk, legal risk, reputation risk, and strategic risk. Those type of risks can also be classified into; credit risk, market risk, and operational risk (IBI, 2015).

PSAK 10: The Effect of Changes in Foreign Exchange Rates (revised 2014) explains that foreign currency transactions are transactions that are denominated or required for settlement in a foreign currency. A unit has exposure to foreign currency risk only if it enters into a transaction (or has an exposure) that is denominated in a currency other than the functional currency's unit. Accounting Standards Update No. 2017-12 Topic 815 explains that a unit has exposure to foreign currency risk only if it enters into a transaction (or has an exposure) that has exposure to foreign currency's unit.

Currency risks should be recognized in the financial statements in the amount of transaction and translation gains or losses resulting from risk exposure of foreign currency's volatility (Choi & Meek, 2011). Currency risk arises from unexpected exchange rate fluctuations between the reporting currency of companies and other foreign currencies. Kamau et al. (2015) and Carrada-bravo & Fernandez (2015) has discusses and categorizes currency risks into transaction risk, translation risk and economic risk.

Transaction risk is the difference between the exchange rate at which the receivables are collected and payables paid and the exchange rate at which they are recorded in the general ledger and reported in the financial statements of the bank (Kamau et al., 2015). Carrada-bravo & Fernandez (2015) explains that transaction risk is related to the amount of losses that is associated with the unexpected depreciation of a foreign currency. PSAK 10 (revised 2014) explains that the amount of foreign currency is calculated into functional currency with the spot rate between functional currency and foreign currency on the transaction date. Meanwhile, translation risk is the impact of revaluation of foreign currency positions into the reporting



currency of a bank for external and internal financial reporting purposes (Kamau et al., 2015). The following three exchange rates can be used to translate foreign currency balances into domestic currencies, namely: current rate, historical rate and average rate (Choi & Meek, 2011). PSAK 10 (revised 2014) explains when there is a change in the functional currency, an entity applies the translation procedure for the new functional currency prospectively from the date of the change, and all resulting exchange differences are recognized in other comprehensive income (OCI). In addition, economic risk is the impact of unexpected fluctuations in exchange rates on the present value of future operating performance and cash flows of the bank when expressed in the reporting currency (Kamau et al., 2015). According to Horne & Wachowicz (2008), economic exposure depends on what happens to the expected cash flows in the future, so subjectivity needs to be involved.

Shapiro (2013) stated that measurement of transaction risk combines the retrospective and prospective aspects because it is based on activities that occurred in the past but will be settled in the future. Transaction risk can therefore be part of translation risk and economic risk in the sense that contracts already entered into and recorded in the balance sheet are part of translation risk and contracts not yet recognized in the balance sheet are part of economic risk.

Direct loss or indirect loss caused by an unexpected exchange rate move usually defined as an exchange rate risk (Fiedor & Hołda, 2016). Kamau et al. (2015) explains that fluctuations in exchange rates, in turn, create currency risks arise from changes in interest rates, inflation, trade and capital flows between foreign and reporting currency. To manage exchange rate risk, Carrada-bravo & Fernandez (2015) explains that trader have to consider the level of the spot rate, the rate of return, the anticipated change in the exchange rate, and three hedging decisions.

PSAK 55: Financial Instruments (revised 2014) explains the effectiveness of hedging can be measured reliably, the effectiveness of hedging is the extent to which changes in fair value or cash flows from hedged items that can be attributed to risks to be hedged can be offset by changes in fair value or cash flow from hedging instruments. The effectiveness of hedging is calculated prospectively and retrospectively, actual results are in the range of 80 - 125%. PSAK 55 (revised 2014) also describes derivatives and hedging is used to reduce the risk. Derivative objectives include reducing risk, reducing loan interest and earning profits from trading or speculative activities. A common example of a derivative is a futures, forward, swap and option contract.

This study includes several other factors, as control variables, which may affect banks performance other than currency risk. Those control variables are operational efficiency ratio (BOPO), interest rate, non-performing loan (NPL), bank size, and capital adequacy ratio (CAR). Based on the discussion above, the relationship between the types of currency risk and their impact on banks performance is visualized in the following framework:





Figure 1. The theoretical framework

Literature review and hypothesis

A failure to manage currency risk can have a negative impact on banks performance and thus reducing achievement of bank goals. Choi & Meek (2011) have explained that currency risk is recognized in the financial statements for the amount of transaction and translation gains and losses. Transaction gains and losses arises from the transaction that has been completed and that have not been resolved. Unresolved transaction gain or loss arises from exchange rate movements between the date a foreign currency transaction was incurred. Completed transaction gain or loss arises from exchange rate movements between the transaction may affect banks performance both positively or negatively. When a bank experiences an exchange rate gain from transaction gain or loss, it will affect the company's profit by increasing profits (positively), and vice versa. Therefore, the impact of currency risk (transaction) on banks performance can be stated in the first hypothesis as follows:

*Ha*₁. Transaction risk affects the financial performance of commercial banks.

Translation gains and losses that affects net income or loss (financial performance) arise from exchange rate movements between the date of preparation of the initial and subsequent financial statements for foreign currencies that have been recorded in the accounting records (Kamau et al., 2015). Hagelin (2003) explains that translation gains or losses tends to be



unrealized and have little direct impact on firms' cash flows, which suggests that translation exposure hedges create little shareholder value through reducing expected costs of financial distress, taxes or the underinvestment problem. Currency risk (translation) may affects banks performance both positively or negatively. When a bank experiences an exchange rate loss from translation gain or loss, it will negatively affect the company's performance trough decrease of equity, and vice versa. Therefore, the impact of currency risk (translation) on banks performance can be stated in the first hypothesis as follows:

Ha₂. Translation risk affects the financial performance of commercial banks.

Research method Data and Sample

This study uses 29 of 34 commercial banks that are listed Indonesia Stock Exchange (BEI) for the period of 2014-2018 or 145 the initial observations. One suspended bank of those 34 banks is excluded from observation, while four banks are excluded from observation because of the translation and transaction gain or loss data are unavailable. In addition, there are 12 detected-outliers of 145 initial observation are excluded, so there are 133 final observations. This study uses secondary data, such as banks financial statements that are gathered from Indonesia Stock Exchange database, banks website, and Bank Indonesia database.

Empirical model and variables

To test the hypotheses, this study uses regression model in equation (1). The hypotheses alternative 1 (Ha_1) can't be rejected if the coefficient of transaction gain or loss variable (*TRSC*) or β_1 is significant, while the hypotheses alternative 2 (Ha_2) can't be rejected if the coefficient of translation gain or loss variable (*TRSL*) or β_2 is significant. The model in the equation 1 has estimated using panel data regression analysis.

$$FP_{i,t} = \beta_0 + \beta_1 TRSC_{i,t} + \beta_2 TRSL_{i,t} + \beta_3 BOPO_{i,t} + \beta_4 INTEREST_{i,t} + \beta_5 NPL_{i,t} + \beta_6 SIZE_{i,t} + \beta_7 CAR_{i,t} + \epsilon_{i,t}$$
(1)

The dependent variable of this study is financial banks performance, which is measured by Return on Asset (ROA) (FP). Meanwhile, the independent variable of this study is foreign currency risks. This study uses two proxies of currency risks, namely transaction risk and translation risk. Transaction risk is measured by transaction gain or loss divided by total asset (TRSC), while translation risk is measured by translation gain or loss divided by total asset (TRSL).

This study also uses five control variables that may affect banks performance. Firstly, operational risk variable, which is measured by operating costs and operating income ratio (*BOPO*). The higher value of BOPO, the bank is more inefficient, so BOPO is expected has negative effect on banks performance. Secondly, interest rate variable, which is measured with BI-7day (reverse) repo rate (*INTEREST*). According to Tumwine et al. (2018) interest rates are bridges or links between income and capital. The higher value of INTEREST, the banks interest margin is lower, so INTEREST is expected has negative effect on banks performance. Thirdly, credit risk which is measured by non-performing loan ratio (*NPL*). According to Ozili (2019), the comprehensive understanding of the factors that may influence the level of NPL is very important as a function of bank risk management and also the sign of banks financial stability. The higher value of NPL, the bank credit risk is higher, so NPL is expected has negative effect



on banks performance. Fourthly, bank size variable, which is measured by natural logarithm form total assets (*SIZE*). According to Raz (2018) the relationship between bank risk and size can be either positive or negative. Bigger banks tend to have a more complex business, which increases their risks. Accordingly, SIZE is expected has positive effect on banks performance. Fifthly, bank capital risk ratio variable (*CAR*), which is measured by capital adequacy ratio. According to Liao (2013) risk management is crucial to the banking industry. Since the Basel Accord was introduced, the minimum CAR requirement has become a major regulatory tool in various jurisdictions. The higher value of CAR, the bank capital risk is lower because bank have a buffer against good earnings volatility, then bank profitability will be higher, so CAR is expected has positive effect on banks performance.

Empirical result Descriptive statistic

	FP	TRSC	TRSL	BOPO	INTEREST	NPL	SIZE	CAR
Mean	0.009360	0.000747	0.000043	0.873161	0.061514	0.029353	17.86848	0.187653
Median	0.009036	0.000526	0.000000	0.878100	0.055800	0.027100	17.94924	0.182300
Maximum	0.031343	0.005773	0.002554	1.806200	0.075000	0.089000	20.98324	0.394600
Minimum	-0.064000	-0.001470	-0.001655	0.582000	0.045600	0.000800	14.49578	0.104400
Std. Dev.	0.01132	0.001038	0.000367	0.146728	0.011893	0.017136	1.660791	0.045660
Observations	133	133	133	133	133	133	133	133

Table I presents descriptive statistics of variables of this study.

Table I. Descriptive statistics

Based on Table I, the mean value of bank performance (*FP*) variable is 0.009360. The median value of *FP* is 0.009036, the maximum value is 0.031343 belongs to Bank Central Asia for the period 2018, while the minimum value is -0.064000 belongs to Bank MNC Internasional for the period 2017. In addition, the standard deviation value of *FP* is 0.01132.

The mean value of first currency risk variable, transaction risk (*TRSC*) is 0.000747. The median value of *TRSC* is 0.000526, the maximum value is 0.005773 belongs to Bank QNB Kesawan for the period 2018 and the minimum value is -0.00147 belongs to Bank Central Asia for the period 2014. The standard deviation value of *TRSC* is 0.001038. The mean value translation risk (*TRSL*) is 0.000043. The median value of *TRSL* is 0, the maximum value is 0.002554 belongs to Bank Of India Indonesia for the period 2014, while the minimum value is -0.001655 belongs to Bank CIMB Niaga for the period 2015. The standard deviation value of *TRSL* is 0.000367.

The mean value of *BOPO* variable is 0.873161. According to Bank Indonesia, the banks operation, in average, is efficient, because the mean value of *BOPO* does not exceed 90%. The median value of *BOPO* is 0.878100, the maximum value is 1.806200 belongs to Bank MNC Internasional for the period 2017, while the minimum value is 0.582000 belongs to Bank Central Asia for the period 2018. The standard deviation value of *BOPO* is 0.146728. The mean value of interest rate (*INTEREST*) variable is 0.061514. The median value of *INTEREST* is 0.058800, the maximum value is 0.075000 in 2014 and 2015, while the minimum value is



0.045600 in 2017. The standard deviation value of *INTEREST* is 0.011893. The mean value of non-performing loan (*NPL*) variable is 0.029353. According to Bank Indonesia, *NPL* in average 2.9353% is efficient, because the mean value of *NPL* does not exceed 5%. The median value of *NPL* is 0.027100, the maximum value is 0.089000 belongs to Bank of India Indonesia for the period 2015, while the minimum value is 0.000800 belongs to Bank KEB Hana for the period 2014. The standard deviation value of *NPL* is 0.017136. The mean value of bank size (*SIZE*) is 17.86848. The median value of *SIZE* is 17.94924, the maximum value is 20.98324 belongs to Bank Rakyat Indonesia for the period 2015. The standard deviation value of *SIZE* is 1.660791. The mean value of capital adequacy ratio (*CAR*) variable is 0.187653. According to Bank Indonesia, *CAR* in average 19.02% is efficient, because the mean value of *CAR* does exceed 8%. The median value of *CAR* is 0.182300, the maximum value is 0.394600 belongs to Bank Mayapada International for the period 2014. The standard deviation value of *CAR* is 0.182300, the maximum value is 0.104400 belongs to Bank Mayapada International for the period 2014. The standard deviation value of *CAR* is 0.045660.

Estimation model result

Table II presents estimation result of the model that examine the impact of currency risks on banks performance.

The Variables	Expected Sign	Coefficient	Std. Error	t-Statistic	Prob.		
С		0.068522	0.004485	15.27807	0.0000		
TRSC	+/-	0.246451	0.143304	1.719774	0.0886*		
TRSL	+/-	-0.022341	0.499494	-0.044727	0.9644		
BOPO	-	-0.077164	0.001564	-49.33106	0.0000***		
INTEREST	-	-0.039779	0.012448	-3.195605	0.0019**		
NPL	-	-0.016011	0.011373	-1.407821	0.0623*		
SIZE	+	0.000311	0.000186	1.676962	0.0967*		
CAR	+	0.002392	0.004276	0.559290	0.0572*		
R-squared		0.990227	Mean dependent var		0.00936		
Adjusted R-squared		0.986969	S.D. dependent var		0.01132		
F-statistic		303.9617	Durbin-Watson stat		1.962286		
Prob(F-statistic)		0.000000					
Notes: TRSC=Transaction risk; TRSL=Translation risk; BOPO= Operational efficiency ratio; INTEREST=Interest rate (BI-7d							
RR); NPL=Non-performing loan; SIZE=Bank size; CAR=Capital adequacy ratio. P-value are reported in Table II; ***, **, *							
correspond to the 1, 5 and 10% levels of significance, respectively, for a two- tailed distribution and accept the alternative							
hypothesis.							

Table II. The estimation result of the model

Based on Table II, the currency risk and the other variables that are included in the model have simultaneous significant effect on banks performance and has explanation power for



98.6969%, ceteris paribus. The both currency risk variables, namely transaction risk (*TRSC*) did have significant effect on banks performance, while translation risk (*TRSL*) did not have significant effect on banks performance. Therefore, the first result did support the hypotheses that transaction risk (*TRSC*) have impact the bank performance and the second result did not support the hypotheses that translation risk (*TRSL*) may have impact the bank performance. Of the five control variables, as expected, *BOPO*, *INTEREST*, and *NPL* has negative significant impact on banks performance, while *CAR* and *SIZE* has positive significant impact on banks performance, namely transaction risk as currency risk did have significant effect on banks performance.

Discussion

Previous study Kamau et al. (2015), found that impact of currency risk on financial performance of multilateral banks was insignificant. This study also confirms previous study that one of the currency risk variable namely translation risk in this finding was insignificant. According to Table II, a two-tailed t test of the b regression coefficient indicated transaction risk support for the hypothesis and translation risk no support for the hypothesis. The result of two tailed test on the b regression coefficient suggest that the relationship between *TRSC* with *FP* is statistically significant and *TRSL* with *FP* is statistically insignificant. Which means that there is significant impact of transaction risk on the banks performance of commercial banks, while there is no significant impact of translation risk on the banks performance of commercial banks

For control variable, first, BOPO has significant impact on financial performance. Leepsa & Mishra (2015) also found significant improvements in BOPO on financial performance on merged firms, same as in Indonesia, many commercial banks in mergers and acquisitions. Second, *INTEREST* has significant impact on financial performance. This study also confirm that the higher value of interest rate, the bank interest margin is lower because cost of fund that must be issued continues to increase that make bank performance lower. Third, NPL has significant impact on financial performance, this is also confirms with findings of Raz (2018) that NPL and financial performance are expected had negative significant impact because the magnitude of bank credit risk affects the banks performance. Fourth, SIZE has significant impact on financial performance, this is also confirms with findings of Raz (2018) and Orlitzky (2001). Micco et al. (2007), found that bank performance of state-owned bank less profitable than private national bank, while in this study, we uses commercial banks that included both of state-owned bank and private national bank. Last, CAR has significant impact on financial performance, this is also confirms with findings of Morekwa Nyamongo & Temesgen (2013) and Jha & Hui (2012) that CAR reflects the company's capital, the higher value of CAR, the greater opportunity for banks to generate profits.

Conclusion

The purpose of this study is to investigate the impact of currency risk on banks performance of commercial banks in Indonesia. The result shows that transaction risk did has significant impact on the commercial banks performance in Indonesia and translation risk did not has significant impact on the commercial banks performance in Indonesia. In addition, of the five control variables, namely credit risk (*NPL*), capital risk (*CAR*), operational risk (*BOPO*), interest rate (*INTEREST*) and bank size (*SIZE*) have significant impact on banks performance.



This finding complements the main result of this study that high risk high return for banks performance, namely transaction risk as currency risk did have significant effect on banks performance.

The result of this study adds empirical evidence that banks risks are more determines banks performance. This study also has several limitations. This study only used commercial banks in Indonesia that listed in Indonesia Stock Exchange (BEI), so further study may include all commercial banks in Indonesia. This study did not address the possible impact of governance and risk management ability of banks to mitigate the currency risk exposure on banks performance. Therefore, future study may consider both variables to be included in the model.

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Appendix 1. Table commercial banks

No.	Commercial Banks	Code	No.	Commercial Banks	Code
1	Bank Negara Indonesia	BBNI	16	Bank QNB Kesawan	BKSW
2	Bank Rakyat Indonesia	BBRI	17	Bank Mayapada	MAYA
				Internasional	
3	Bank Mandiri	BMRI	18	Bank Mega	MEGA
4	Bank Rakyat Indonesia	AGRO	19	Bank Mualamat Indonesia	BBMI
	Agroniaga				
5	Bank Artha Graha	INPC	20	Bank Jtrust Indonesia	BCIC
	Internasional				
6	Bank BNI Syariah	BBSY	21	Bank OCBC NISP	NISP
7	Bank Bukopin	BBKP	22	Panin Bank	PNBN
8	Bank Bumi Arta	BNBA	23	Bank Permata	BNLI
9	Bank MNC Internasional	BABP	24	Bank Sinarmas	BSIM
10	Bank Central Asia	BBCA	25	Bank Of India Indonesia	BSWD
11	Bank CIMB Niaga	BNGA	26	Bank UOB Indonesia	BBIA
12	Bank Danamon Indonesia	BDMN	27	Bank Capital Indonesia	BACA
13	Bank Ganesha	BGTG	28	Bank Agris	AGRS
14	Bank KEB Hana	KEHA	29	China Construction Bank	MCOR
				Indonesia	
15	Bank Maybank Indonesia	BNII			L

Source: Indonesia Stock Exhange

share

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