Investigating Banking Profitability: Evidence from Commercial Banks in Emerging Country

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Abstract: *We empirically analyse the determinants of commercial banking profitability in Indonesia for the period 2014-2018. We contribute to the growing literature in practical ways, first we propose suggestion to the business of the commercial banking sector in Indonesia, especially in decision-making of financial condition, in order to maximize the performance of the company and shareholders, so that the banking company's shares can continue to survive and have large returns. Also, it is expected to provide insight and knowledge about the extent to which the relationship between the banking sound's level variable and its Profitability. The sample in this study amounted to 17 banking companies. This study uses purposive sampling method and we apply multiple linear regression approach with SPSS. We found that credit portfolio quality has a negative and significant effect on profitability, bank solvency has a positive and significant effect on profitability, interest level has a positive and insignificant effect on profitability. Efficiency ratio has a negative and insignificant effect on profitability, and liquidity has a positive and insignificant effect on profitability.*

Keywords: *bank profitability, emerging economy, credit quality, solvency, interest margin, efficiency*

Introduction

As a crucial component of a nation's financial system, banks play a significant role in the economy's success. In fact, there is a direct correlation between the improvement of this sector's performance and the acceleration of a nation's economic growth (Graff, 2003; Rajan & Zingales, 1998). In order to diversify idiosyncratic credit risk by maintaining portfolios of several loans, among other things, banks play a key role in the economy by adjusting liquidity as well as boosting the productive sectors of a nation. Bank Indonesia classified banking industry into business activity groups (Indonesian Banking Booklet, 2013). Commercial Bank for Business Activities is the abbreviation for BUKU, which refers to a level of banking organizations depending on the quantity of core capital. A financial organization known as Commercial Bank Business Activity One (BUKU 1) has a core capital, or minimum capital, that ranges from IDR 100 billion to less than IDR 1 trillion. A minimum of 55% of all loan or funding is given to MSMEs for productive purposes. The core capital of Commercial Bank for Business Activities Two (BUKU 2) is between IDR 1 trillion and IDR 5 trillion. At least 60% of all loans go to lending to MSMEs or to productive finance for them. Commercial Banks Three (BUKU 3) banks with core capital ranging from $5 trillion to $30 trillion conduct business. At only 65% of total loans, productive lending to MSMEs is at its lowest level. In comparison to other BUKU banks, Four Commercial Banks (BUKU 4) are the banks with the largest capital. A bank with basic capital of IDR 30 trillion is called Bank BUKU 4. At least 70% of all loans is the aim for BUKU 4 credit.

A bank's ability and client loyalty will be impacted by its soundness assessment. In accordance with Bank Indonesia Regulation (PBI) No. 6/10 / PBI / 2004 regarding the Rating System for Commercial Bank Soundness and (BI Circular, 2004) regarding the Rating System for Commercial Banks using the CAMELS method, which includes the factors of capital, asset quality, management, earning, liquidity, and sensitivity to market risk.

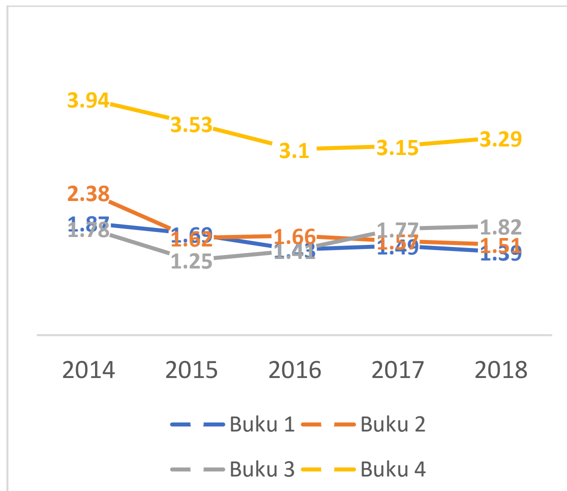


Figure 1. The chart of profitability comparison of Indonesia Commercial Banks 2014 – 2018

In the figure the level of profitability at BUKU 2 in 2014 increased from the previous year to 2.38 while in 2015 it decreased significantly to 1.62 but in 2016 it increased to 1.66 and in the last year 2017 and 2018 it decreased from 1.57 to 1.51. Then in BUKU 3, there was a fluctuation in 2014 of 1.98, while in 2015 it decreased compared to the previous year to 1.25, in 2016 to 2018 profitability increased from 1.43 to 1.82.

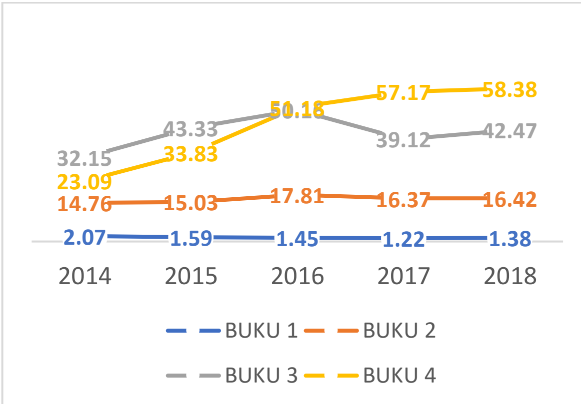


Figure 2. The chart of credit portfolio quality of Indonesia Commercial Banks 2014 – 2018

In figure 2, the level of quality of the credit portfolio in BUKU 2 experienced a slight increase in 2016 while in 2017 and 2018 it decreased slightly from 2016 which tended to be stable. While in BUKU 3 from year to year there has been a very large increase. While in BUKU 4 in 2014-2016 there was an increase but in 2017 it had decreased before increasing again in 2018.

LITERATURE REVIEW

Credit quality rating is the evaluation of the credit risk connected to a particular asset, such as a bond or stock portfolio. In Indonesia, non-performing asset or loans (NPLs) are used to assess a bank's credit portfolio quality. NPL is measured as a percentage of the total credit extended to customers and is used to compare the amount of credit extended to customers and the level of collectability or payment by customers who have not complied with the terms of the agreement. Non-Performing Loans (NPLs) are loans that have been disbursed, but are substandard, doubtful, and non-performing. Based on data obtained from Bank Indonesia, it is known that the development of the NPL ratio of commercial banks in Indonesia during 2007-2011 experienced a downward trend from the beginning to the end of the research year. Irwan (2018), Usman (2016) research results show that credit quality has a positive and insignificant effect. In contrast to the research conducted by Hartono (2017) credit quality has a positive and significant effect on ROA. Dewi (2017), Wulandari dan Purbawangsa (2019), Nurhasanah and Maryono (2021) agree that credit quality with NPL as proxy is important as internal determinants of profitability for the banking sector.

$$NPL = \frac{Non\ performing\ assets}{Total\ loans}\ x\ 100\%$$

In solvency capability, the bank evaluates its capacity to fulfil its debts over the long run. Understanding the bank's ability to fulfill its obligations is necessary. One of the indicators is Capital Adequacy Ratio (CAR), this ratio makes it easier to comprehend how much loss the bank can take before going bankrupt. It is a measurement of the amount of capital a bank has available represented as a share of its risk-weighted credit exposure. CAR is a capital adequacy ratio that functions to accommodate the risk of loss that a bank may face. The higher the solvency, the better the bank's ability to bear the risk of any risky credit (Rahman, 2017). The amount of capital of a bank, will affect the level of public confidence in bank performance (Mawardi, 2005). According to research conducted by Hartono (2017), Avrita and Demi (2016), Sabir et al. (2012) show the results that bank solvency has a positive and significant effect on profitability. Also, Praja and Hartono (2019) found positive effect on profitability in Indonesia National Private Commercial Bank. Therefore, we argue that bank solvency capability has positive effect on profitability. In this regard we apply capital adequacy ratio as follow:

$$CAR = \frac{capital}{risk - weighted\ asset} X\ 100\%$$

Interest level margin is a measurement of the net return on the earning assets of the bank, which include loans, leases, and investment securities. It is calculated by dividing interest revenue less interest expense by assets with a positive yield. The greater this ratio will increase interest income on productive assets managed by the bank so that the bank is in good condition. So, it can be concluded that the greater the change in the Net Interest Margin (NIM) of a bank, the greater the profitability of the bank, which means that its financial performance is increasing (Sudarmawanti, 2017). Khabibah et al. (2020) and Pinasti and Mustikawati support there is positive significant effect of interest level margin on profitability. Claessens et al. (2018) also support that when interest income drops, the profitability falls in banking sector cross country. We hypothesize that there is positive relationship between interest level margin and profitability. We apply NIM ratio, as follow:

$$NIM = \frac{Net\ interest\ income}{Earning\ assets}$$

Operational costs are used to measure the level of efficiency and ability of the bank in carrying out its operational activities. Operational costs are costs incurred by banks in carrying out their main business activities such as (interest costs, labor costs, marketing costs, and other costs). operating income is the main income of a bank, namely interest income obtained from placement of funds in the form of credit and other operating income. there are few studies related to efficiency and profitability, e.g. Guillén et al. (2014) and Chortareas et al. (2011). Both have found a positive relationship between efficiency and profitability. The smaller this ratio, the more efficient the operational costs incurred by the bank so that the possibility of a bank is in good condition. Mukti (2019) present that efficiency ratio with operational cost variable has a direct effect on profitability. Also, Avrita and Pangestuti (2016) and Haruna (2013). Here, we expect that efficiency has adverse effect on profitability

$$BOPO = \frac{Operational\ expenses}{Operational\ income}\ x\ 100\%$$

Liquidity ratio used to measure the level of bank liquidity that shows the demand for credit by using the total assets owned by the bank. (Sudarmawanti, 2017). The provisions of the Loan to Deposit Ratio (LDR) according to Bank Indonesia in the Circular Letter of Bank Indonesia No. 26/5/BPPP dated May 29, 1993 concerning procedures for assessing the soundness of commercial banks, stated that the soundness of banks is for the benefit of all parties concerned, then Bank Indonesia stipulates:

1. For Loan to Deposit Ratio (LDR) of 110%, or more, the credit score is zero (0), meaning that the bank's liquidity is not healthy.

2. For Loan to Deposit Ratio (LDR) below 110%, a credit score of 100 is given, meaning that the bank's liquidity is healthy.

Some empirical evidences present that liquidity has a positive significant effect on profitability, such studies from Harun (2016), Chiaramonte and Casu (2017) and Faridz (2019). We assume that there is positive significant effect of liquidity on profitability, this ratio can be formulated as follows:

$$LDR = \frac{Total\ credit}{Total\ deposit\ of\ third\ party}\ x\ 100\%$$

a. H1: The credit quality rating has a negative and significant effect on profitability

b. H2: The solvency capability has a positive and significant effect on profitability

c. H3: The interest level margin has a positive and significant effect on profitability

d. H4: Efficiency has a negative and significant effect on Profitability

e. H5: Liquidity has a negative and significant effect on profitability

f. H6: Credit quality, solvency capability, interest level margin, efficiency and liquidity have a positive and significant effect on profitability

METHOD AND DATA COLLECTION

Table 1 Descriptive Statistics

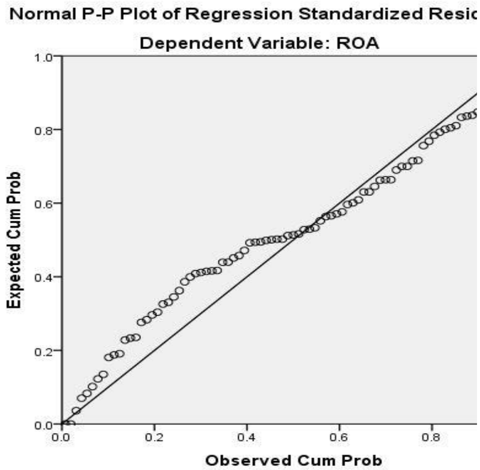
	N	Minimum	Maximum	Mean	Std. Deviation
	Statistic	Statistic	Statistic	Statistic	Statistic
Credit quality	85	.00	.28	.0289	.05146
Banking solven	85	.00	.48	.1670	.09163
Interest level	85	.00	.41	.0480	.05244
Efficiency	85	.01	1.51	.6808	.35134
Liquidity	85	.07	1.13	.7272	.29954
profitability	85	-.04	1.00	.0232	.10824
Valid N (listwise)	85				

Our study applies purposive sampling, a sampling approach that takes into account certain criteria, was utilized in this study to pick the sample. The following criteria are utilized in research sampling as follow: Banking companies that provide complete financial reports for the 2014-2018 period, that have standard financial data according to the needs of this study during the 2014-2018 period, that are listed on the Indonesia Stock Exchange for the period 2014-2018, Banking companies that fall under the category of Commercial Bank Business Activities 2 and 3 (BUKU 2 and BUKU 3). The following is a sample of data that the authors have obtained as many as 17 banking companies.

We test our hypotheses using multiple linear regression is measured using SPSS version 24. Before analysing the data, we remove firms without at least 3 consecutive year balance data for all the variables. This is because such firms cannot be used to calibrate the model. Thus, the models are specified as follows:

$$\begin{aligned} Banking\ profitability &= \beta 0 + \beta 1(credit\ quality) \\ &+ \beta 2(banking\ solvency) \\ &+ \beta 3(interest\ level) \\ &+ \beta 4(efficiency\ ratio) \\ &+ \beta 5(liquidity\ ratio) + \epsilon \end{aligned}$$

RESULTS AND DISCUSSION



Normality test

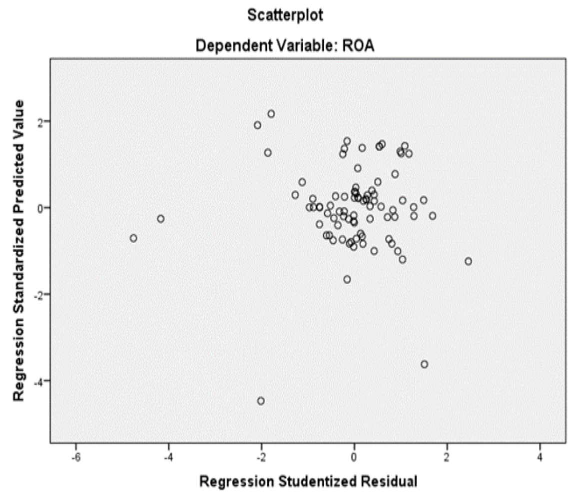
Based on the test results in the image above, it shows that the points spread coincide around the diagonal line and follow the diagonal line. This shows that the variables are normally distributed.

Multicollenearity Test

Model		Collinearity Statistics	
		Tolerance	VIF
1	(Constant)		
	Credit quali	.946	1.057
	Bank solven	.723	1.384
	Interest lev	.859	1.168
	Efficiency	.726	.1.378
	Liquidity	.752	1.330

The multicollenearity test results show that there is no symptoms of multicollinearity because the results meets a tolerance value of more than 0.10 and a VIF value of less than 10.

Heteroscedasticity Test



Based on the test results in the image above, it shows that the dots spread out randomly and do not converge in one place. This shows that there are no symptoms of heteroscedasticity.

Autocorrelation Test

Model	R	R Square	Adjusted R Square	Std. Eror of the Estimate	Durbin-Watson
1	.476 a	.227	.178	.01310	1.993

Based on the test results, the Durbin-Watson value is 1.993, which means that the DW value is between -2 to +2, it can be concluded that there is no autocorrelation problem. Also, from the test results above, the Adjusted R Square value is 0.178. This means that 17.8% of

Profitability (ROA) is influenced by credit quality and bank solvency. While the remaining 82.2% is influenced by other variables.

F Test (Simultaneous)

ANOVA[a]

		Sum of Square	df	Mean Square	F	Sig.
1	Regression	.004	5	.001	4.629	.001[b]
	Residual	.014	79	.000		
	Total	.018	84			

a. Dependen Variabel: profitability
b. Predictors: (Constant), credit quality, bank solvency, interest level, efficiency, liquidity

From the F test result the F value of 4.629 with a significant 0.001, namely <0.05 (specified), it means that all variables together show significant effect on profitability.

T test (partial)

Coefficients[a]

Model		t	Sig.
1	(Constant)	-.743	.460
	Credit quali	-2.983	.004
	Bank solven	2.496	.015
	Interest lev	1.864	.066
	Efficiency	-.221	.826
	Liquidity	1.584	.117

a. Dependent Variabel: profitability

The significant value of T for the credit quality is 0.004 <0.05, so the credit quality partially has a significant negative effect on the profitability. It is found that the credit quality showed a negative and significant effect on profitability in banking companies listed on the IDX for the 2014-2018 period. The worse the credit quality, the lower the profitability, on the contrary, if the credit quality good, the ROA will increase. It is necessary for management to conduct a better analysis when management decides to extend credit to the public (customers), thereby minimizing the occurrence of non-performing loans. This result is in accordance with Ni Kadek Alit Pradina Putri, et al. (2018) which shows that credit quality has a negative significant effect on profitability.

Bank solvency is also positively related with significant value 0.015 <0.05, on the profitability variable. The decline in bank's solvency with CAR proxy reflects a bank's capital is weak, so is profitability. Conversely, the higher the solvency, the higher the profitability, because bank's earning will be higher. (Kuncoro, 2002). If the manager of a banking company can manage its capital properly, namely by optimally utilizing its own capital so that the profits obtained will increase because it is not used to finance capital from outside / externally by increasing its own capital, the soundenss of the bank related to the capital ratio / capital adequacy will also increase customers trust, as the profit increases. This research is supported by research conducted by Ni Kadek Alit Pradina Putri, et al. (2018), Hartono (2017), Avrita and Demi (2016), Sabir et al. (2012)

Interest level margin variable significant value is 0.066> 0.05, so that the interest level margin variable partially has a positive and insignificant effect on the Profitability. The higher the profitability, the greater the level of profit achieved by the bank so that the possibility of a bank in a problematic condition is getting smaller (Taswan, 2010). This condition implies that the change in interest level margin causes little impact on the profitability. Although, there was a decrease in profit from earning interest, the profitability obtained by the bank slightly grows. This is because banks can still obtain other sources of profit such as fee-based income which also has a relatively mild effect on profitability. Our evidence is supported by Ishak et al. (2021) and Rahmi and Sumirat (2021) which shows that the interest level margin has a positive but insignificant effect on profitability.

The significant value of efficiency variable is 0.826> 0.05, so that the efficiency variable partially has a negative and insignificant effect on the Profitability. From the test results of the efficiency variable shows a negative and insignificant effect on profitability in banking companies listed on the IDX for the 2014-2018 period. If the efficiency ratio is getting smaller, it can be concluded that the financial performance of a bank is increasing or improving (Riyadi, 2004). Since the level of efficiency tends to be stable during the research period, so that it does not have a major impact on increasing or decreasing. This result is in line with Naeem et al. (2017) and Gunawan et al. (2020).

The significant value of the liquidity variable is 0.117> 0.05 so that the liquidity variable partially has a positive and insignificant effect on the Profitability. Liquidity has a positive effect on profitability, indicating that the higher the liquidity, the profitability will increase. However, the results of this study indicate that the liquidity is not significant to profitability because the increase in liquidity value which tends to be low in the period pf research data, so it doesn't have a big impact on increase or decrease in profitability. Our finding is supported by Edo and Wiagustini (2014), Al-Homaidi et al. (2018), and Pradnyawati and Widhiastuti (2020).

CONCLUSIONS AND RECOMMENDATIONS

Based on the results of the first statistical analysis, it shows that partially credit portfolio quality and bank solvency in BUKU 2 and BUKU 3 Banking Companies listed on the Indonesia Stock Exchange for the period 2014 – 2018 have a significant negative effect on profitability. Meanwhile, the results of the interest level margin, efficiency ratio and liquidity have insignificant impact on profitability of BUKU 2 and BUKU 3 Banking Companies listed on the Indonesia Stock Exchange for the period 2014 – 2018. For the simultaneous test result shows that all variables have a significant positive effect on profitability as represented

Overall, our research contributes to some policy makers in banking industry. That profitability is not always determined by the interest margin level and liquidity. As the stability of liquidity value does not guarantee earning level of bank. Many customers use internet banking service than previous years that implies fee-based income generates more profit for the bank. In contrast, the soundness of credit portfolio can give great impact to the banking performance bot in short and long period. And the solvency capability that express in the form of the amount of capital a bank has available represented as a share of its risk-weighted credit exposure, completely help banks to co-op with the exposure of many risks. For further studies, it is expected to apply other variables outside of these variables in order to obtain more varied results that can explain what things can affect profitability and to extent the research period. It is also suggested to expand the scope of research on the effect of financial ratios on the ability of bank management to gain overall profits by exercising external factors such as inflation, TPF, SBI and so on in order to produce better result.

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