DETERMINANTS OF BANK PROFITABILITY IN INDONESIA
(CASE STUDY OF INDONESIAN COMMERCIAL BANKS LISTED IN IDX PERIOD 2010-2015)

FAKTOR-FAKTOR YANG MEMPENGARUHI PROFITABILITAS BANK
(STUDI KASUS PADA BANK-BANK KOMERSIAL INDONESIA YANG TERDAFTAR DI BEI PERIODE 2010-2015)

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Abstract: Banks are the most profitable industries that are able to contribute to the economy. The purpose of this study is to determine the profitability factors of commercial banks in Indonesia by using the industry data panel of banks from 2010 to 2015. This study uses quantitative analysis and secondary financial data using linear regression model for bank size profitability, Asset Return (ROA). The fixed effect regression model is applied for depiction of Bank SIZE, CAR, LDR, NPL, and NIM). The results showed that bank size and NIM have a significant and positive relationship with bank profitability. On the other hand, variables such as NPL and LDR have a negative and significant relationship with bank profitability. However, the relationship to CAR is not significant .Banks in Indonesia should not only be concerned about internal structures and policies, but they must consider both the internal environment and the macroeconomic environment together in fashioning out strategies to improve their performance or profits. Indonesian banks should try their best in order to provide new banking services and to participate in risky investment areas which may in turn increases their profitability significantly.

Keywords :*profitability of bank,nim,ldr,npl,size,car,roa*

Abstrak: *Bank adalah industri yang paling menguntungkan yang mampu berkontribusi pada perekonomian. Tujuan dari penelitian ini adalah untuk mengetahui faktor-faktor profitabilitas bank umum di Indonesia dengan menggunakan panel data industri bank daritahun 2010 hingga 2015. Penelitian ini menggunakan analisis kuantitatif dan data keuangan sekunder menggunakan model regresi linier untuk ukuran profitabilitas bank, Asset Return (ROA). Model regresi efek tetap diterapkan untuk penggambaran ukuran bank, CAR, LDR, NPL, dan NIM). Hasil penelitian menunjukkan bahwa ukuran bank dan NIM memilik ihubungan yang signifikan dan positif dengan profitabilitas bank. Di sisi lain, variable lseperti NPL dan LDR memilik ihubungan negative dan signifikan dengan profitabilitas bank. Namun, hubungannya dengan CAR tidak signifikan. Bank di Indonesia seharusnya tidak hanya memperhatikan struktur dan kebijakan internal perbankansaja,tetapimerekajugaharusmempertimbangkanlingkungan internal dan lingkungan ekonomi makro secara bersamaan dalam menyusun strategi untuk meningkatkan kinerja atau keuntungan mereka. Bank-bank Indonesia harus mencoba yang terbaik untuk menyediakan layananperbankanbarudanuntukberpartisipasidalambidanginvestasi yangdapatmeningkatkanprofitabilitasmerekasecarasignifikan.*

Kata kunci:*profitabilitasbank,nim,idr,npl,ukuranbank,car,roa*

INTRODUCTION

Research Background

Banking is a supporting factor in the economic stability of Indonesia, it is necessary to do a series of analysis such that the possibility of financial distress and even the banking business failure can be detected as early as possible.Besides assessment can also be used to determine how much profitability or profit bank by comparing the results of profit in a given year with the profit in the years before and after, or compare the performance of banking with other banks.

With a ratio analysis, financial information is detailed and easy to read and interpret complicated, so the statements of a company is compared with the financial statements of other companies, as well as faster to see the development and performance of companies on a periodic basis.The performance level of profitability of a company can be seen and measured through financial statements by analysing and calculating the ratio of the ratio of financial performance. Financial statement analysis is a very important tool to obtain information relating to the company's financial position and the results that have been achieved in connection with the election of the company's strategy will be applied. By analysing the company's financial statements, then the head of the company can know the state and the development of financial companies with the results that have been achieved at a time when the results of the past and at a time when it is running. In addition, the financial analysis it can be seen in the past the weaknesses of the company and the results were deemed well enough and know the potential failure of a company.

With a ratio analysis, financial information is detailed and easy to read and interpret complicated, so the statements of a company is compared with the financial statements of other companies, as well as faster to see the development and the company's performance on a periodic basis. Banking conditions is interesting to study. To find out how much influence the financial ratio on the level of profitability of banking in Indonesia, then in this study took the case to the bank went public from 2010 to 2015 by analysing its financial performance to determine how much the level of profitability in the future. The level of profitability is measured by using financial ratios Return on Assets (ROA) for ROA is more focused on the company's ability to obtain earnings in the company's overall operations.

Research Objectives

Based on research problem, the objectives of this study are to know the determinant of bank profitability relationship of each of the determinants to bank profitability and Significant the variable effect on Bank Profitability.

LITERATURE REVIEW

Return on Assets (ROA)

The ratio is commonly used to describe bank profitability: Return on Assets (ROA). ROA indicates how effectively a bank manages its assets to generate income. It indicates income earned on each unit of assets. The problem of ROA is that it excludes off-balance sheet items of the bank creating a positive bias in evaluating bank performance of ROE is that banks with lower level of capital will generate a higher ratio. These banks have a high level of financial leverage which is undesirable and associated with high degree of risk. Golin (2001) concludes that ROA is the key measure of profitability for banks.

Capital

Various studies suggest that banks with higher levels of capital perform better than their undercapitalized peers. Staikouras and Wood (2004) claimed that there exists a positive link between a greater equity and profitability among EU banks. Abreu and Mendes (2001) also trace a positive impact of equity level on profitability. Goddard, Molyneux and Wilson (2004) supports the prior finding of positive relationship between capital/asset ratio and bank's earnings.

Non-Performing Loan (NPL)

According to Bank Indonesia Regulation No. 5, 2003, one of the bank's business risk is credit risk, which is defined as the risk arising from counterparty failure to fulfill obligations. Credit risk is the risk faced by banks for distributing the funds in the form of loans to community. If a bank has a high NPL condition it will increase the cost of the provision charge both productive assets and other costs, thus potentially against bank losses. The smaller the NPL, then the less the credit risk borne by the bank (Suyono, 2005). In order for banks to value ratio is good, Bank Indonesia (BI) establish criteria NPL ratio under 5%.

Net Interest Margin (NIM)

Net Interest Margin (NIM) is the ratio of earning assets to interest income. A bank is said to be healthy if it has NIM over 2%. The greater this ratio, the interest income on earning assets managed by banks will increase so that the possibility of the bank in error gets smaller (Kasmir, 2003).

Loan Deposit Ratio (LDR)

Insufficient liquidity is one of the major reasons of bank failures. However, holding liquid assets has an opportunity cost of higher returns. Bourke (1989) found a positive significant link between bank liquidity and profitability. However, in times of instability banks may choose to increase their cash holding to mitigate risk. Unlike Bourke (1989), Molyneux and Thornton (1992) come to a conclusion that there is a negative correlation between liquidity and profitability levels.

Bank Size

The impact of a bank's size on its profitability is not uniform. In a study of European banks for the period of 1992 to1998, Goddard, Molyneuxand Wilson (2004) identified only slight relationship between size and profitability. Some of earlier studies have different results. Smirlock (1985) proved a significant and positive impact of a bank's size on its profitability. Short (1979) claimed that size has a positive influence on profitability through lowering the cost of raising capital for big banks. Later, studies by Bikker and Hu (2002) and Goddard, Molyneuxand Wilson (2004) support the proposition that increasing a bank's size positively affects profitability through cost of capital. However, there is no consensus in the literature on whether an increase in size provides economies of scale to banks. For example, some researches including Berger, Hanweck and Humphrey (1987) claimed that there is no significant relationship between profitability and size.

Previous Research

Davydenko(2010)The evidence of insufficient credit risk monitoring is supported by the negative coefficient obtained for loanta (-.146). The fact that loans as percent of total assets have a significant negative impact on profitability is alarming pointing to a very low quality of bank loans in Ukraine. In light of these findings, the National Bank of Ukraine should endorse credit risk screening measures within banks. For example, one measure could be setting a limit on the maximum credit risk exposure to a single party. The NBU could also provide instructions to banks on effective risk monitoring in line with worldwide best practices. However, when interacted with foreign ownership, loans have a positive coefficient indicating higher quality of loans of foreign banks. The coefficient of capital is positive and significant at a 1% confidence level which is in line with theory. Such result may indicate that Ukrainian banks that increase their equity have a lower cost of capital and thus are more profitable. A policy implication of such results may be for NBU to sanction higher capital requirements to improve the low profitability in the banking system.

Petria, Caprarub, and Ihnatovc(2015).The results It seems that the size of the bank does not influence the return on equity, namely the return of the share-holders investment. On the other hand, the return on assets depends on the total assets of the bank, but the estimated coefficient has a week statistical significance (0.0228, p < 0.10). For the latter case, the coefficient has the expected sign, thus the bank size enhances the management efficiency. The cost to income ratio has the expected (negative) sign and, in this case, it is significant for both dependent variables, although the relative effect of the operating costs is about ten times bigger for ROAE than for ROAA (0.171 versus 0.0183). Credit risk has a negative, statistically significant impact on bank performance. Again the impact on ROAE is much stronger (-1.005) than on ROAA (-0.0726). The liquidity risk is measured as the ratio of loans to customer deposits. If this ratio increases, e.g. banks use less deposits to grant loans or grant more loans without increasing the deposits, then bank performance deteriorates. The capital adequacy ratio has not a statistically significant impact on shareholders return. This may be explained by the fact that a high capital adequacy may reduce the risks of the bank, but, in the same time, the shareholders do not benefit from the leverage effect. The effect of the solvency on ROAA is positive, statistically significant, but pretty weak (about 0.04). Both ROAA and ROAE are influenced by the operating income generated by the offbalance sheet operations. It seems that about 0.75% of the other operating income movements are reflected on the return on equity variable, while only 0.09% has an effect on the return on assets

Francis (2013).The coefficient of the variable representing growth in bank assets is negative and significant at 10 percent significance level. A negative relationship of bank size suggests that the smaller the bank the, the more efficient the bank will be. The coefficient of the variable representing liquidity risk (net loans

to total assets) is negative and significant with expected signs at1 percent, 5 percent and 10 percent levels, respectively. This is consistent with theory that the higher liquidity ratio could influence bank profitability.
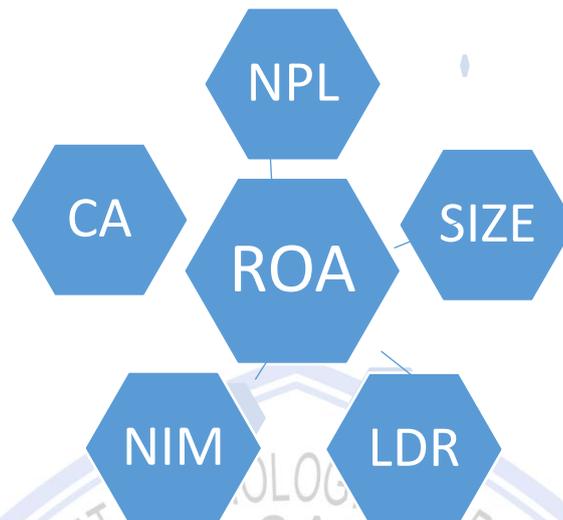
Conceptual Framework

Figure 1. Conceptual Framework

Source: SPSS, 2018

Hypothesis

H_1 :There is an effect of capital adequacy ratio on return on asset partially.

H_2 :There is an effect of non-performing loan on return on asset partially.

H_3 : There is an effect of loan deposit ratio on return on asset partially.

H_4 : There is an effect of net interest margin on return on asset partially.

H_5 : There is an effect of bank size on return on asset partially.

H_6 :There is an effect of car, npl, ldr, nm, bank size on roa simultaneously.

RESEARCH METHODOLOGY

Type of Research

This research is exploratory and quantitative in nature. The main purpose of quantitative research is the detective of Casual relationship between variables. In quantitative research information of observed behaviors of samples is obtained through statistical data collecting of the observed behaviors of the sample.

The Information Gathered based on secondary data which is from annual report of banks, it adopted the longitudinal time dimension, specifically the panel Data method. The panel data method set covers a 6 year period from 2010-2015 of Banks listed in IDX in Indonesia.

Place and Time of Research

This research will be done in banks listed in idx period 2010-1015. This research is conducted in September - December 2018.

Population and Sample

According to Sugiyono (2014), Population is a generalization region consisting of the objects or subjects that have certain qualities and characteristics defined by the researchers to learn and then drawn conclusions. The population used as a sample in this study is 43 commercial banks to go public listed on the Indonesia Stock Exchange period 2010 to 2015. Of the existing population will be taken a certain amount of sample. The names of the banks that will be used in a sample obtained from the official website of the Indonesia Stock Exchange (IDX). Sampling technique used in this research is purposive sampling method, the sample is drawn using judgment. Criteria for selection of the sample to be studied were:

The Bank listed on the Stock Exchange that have the most financial statements complete and has been published in Bank Indonesia which is accessed from 2010 to 2015. A maximum at the beginning of 2010 has

been listed on the Indonesia Stock Exchange.The total number of banks that go public are listed on the Stock Exchange are as many as 43 banks, but which meet the above criteria only 27 banks. Then the samples used in this study is much 27 banks went public in the years 2010 to 2015.

Data Collection Method

The data used in this research is quantitative data, this data is measured in a numerical scale (figures). The secondary data that were collected through structured document reviews are mainly from the records held by IDX and the banks themselves.

Operational Definition and Measurement of Research Variable

Dependent variables are variables that explain or influence another variables .Variables described /influenced by independent variables. The variable in this study was measured profitability aspect with ROA. Independent variable is suspected as the cause in the dependent variable. Independent variables in this study are: Capital Adequacy Ratio (CAR), Net Interest Margin (NIM), Non-Performing Loan/Credit Risk (NPL), Bank Size (SIZE), and Liquidity/Loan Deposit Ratio (LDR).

Data Analysis Method

To achieve the broad research objective, the paper was primarily based on panel data, which was collected through structured document review. Thus, the collected panel data was analyzed using descriptive statistics, correlations and multiple linear regression analysis. Mean values and standard deviations were used to analyze the general trends of the data from 2010 to 2015 based on the sector sample of 27 banks and a correlation matrix was also used to examine the relationship between the dependent variable and explanatory variables. A multiple linear regression model was used to determine the relative importance of each independent variable in influencing profitability.

In this Research, the researcher used Fixed Effects model. In this model, panel estimates will be selected where residuals may be interconnected between time and between individuals. Therefore, in this model it is assumed that there are different intercepts for each individual and the intercept is a random or stochastic variable. So in this model there are two residual components, the residual as a whole, which is a combination of time series and cross section, and individual residuals that are random characteristics of i-unit observations and fixed all the time.

Multiple Linear Regression:

$$Yit = \alpha + \beta 1 X 1 it + \beta 2 X 2 it + \cdots + \beta n X n it + \mu i + \varepsilon it$$

As noted in Brooks (2008) there are basic assumptions required to show that the estimation technique, OLS, had a number of desirable properties, and also so that hypothesis tests regarding the coefficient estimates could validly be conducted. If these Classical Linear Regression Model (CLRM) assumptions hold, then the estimators determined by OLS will have a number of desirable properties, and are known as Best Linear Unbiased Estimators (BLUE). Therefore, for the purpose of this study, diagnostic tests are performed to ensure whether the assumptions of the CLRM are violated or not in the model. Thus, the following section discusses about the nature and significance of the model misspecification tests.

RESULT AND DISCUSSION

Regression Result

Table 1. Estimates of Fixed Effects[a]

Parameter	Estimate	Std. Error	df	t	Sig.	95% Confidence Interval Lower Bound	95% Confidence Interval Upper Bound
Intercept	-2.844731	.911312	144	-3.122	.002	-4.646008	-1.043454
CAR	-.007972	.016893	144.000	-.472	.638	-.041362	.025419
NPL	-.252067	.048071	144.000	-5.244	.000	-.347084	-.157051
LDR	-.015044	.005505	144.000	-2.733	.007	-.025926	-.004163
NIM	.288098	.036018	144	7.999	.000	.216905	.359290

SIZE	.670609	.101594	144.000	6.601	.000	.469802	.871417

a. Dependent Variable: ROA.

Source: Data Processed, 2017

A. Testing the first hypothesis (H1)
   The significant value for the effect of CAR on ROA is 0.638 > 0.05. And the value of t-arithmetic is -0.472 < t-table 2.08. This means that CAR is not significant to profitability (ROA) in banking companies listed on BEI ,so it can be concluded that H1 is rejected, which means CAR has no effect on ROA.

B. Testing the Second hypothesis (H2)
   The significant value for the effect of NPL on ROA is 0.000 < 0.05. And the value of t-arithmetic is -5.244 < t-table 2.08, so it can be concluded that H2 is Accepted, meaning that NPL has significant effect on ROA, but the influence is negative significant.

C. Testing the Third hypothesis (H3)
   The significant value for the effect of LDR on ROA is 0.007 < 0.05. And the value of t-arithmetic is -2.733 < t-table 2.08, so it can be concluded that H3 is Accepted, meaning that LDR has significant effect on ROA, but the influence is negative significant.

D. Testing the Fourth hypothesis (H4)
   The significant value for the effect of NIM on ROA is 0.000 < 0.05, and the value of t-arithmetic is 7.999 > t-table 2.08, so it can be concluded that H4 is Accepted, meaning that NIM has positive significant effect on ROA,

E. Testing the Fifth hypothesis (H5)
   The significant value for the effect of SIZE on ROA is 0.000 < 0.05, and the value of t-arithmetic is 6.601 > t-table 2.08, so it can be concluded that H5 is Accepted, meaning that NIM has positive significant effect on ROA,

F. Testing the Sixth hypothesis (H5)

Table 2.Anova[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	149.495	5	29.899	44.640	.000[b]
	Residual	96.448	144	.670		
	Total	245.943	149			

a. Dependent Variable: ROA

b. Predictors: (Constant), SIZE, NPL, LDR, CAR, NIM

Source : Data Processed, 2017

Based on the output of table 2. Note, the significant values for the effects of CAR, NIM, LDR, NPL and SIZE simultaneously to ROA is 0.000 < 0.05 and the value of F arithmetic is 44.640 > F-table 2.66. So it can be concluded that h6 received, which means there is an effect all independent variables simultaneously or together to dependent variable ROA.

Discussion
CAR
        The results of the research can be seen that the variable of capital adequacy ratio has a positive and insignificant effect to return on asset at banking company listed in BEI. Where the partial test calculation obtained count equal to -0.472 <t-table 2.08 with significance value 0.638> 0.05. This means that the higher level of adequacy of capital adequacy (CAR) of a bank is not a benchmark of bank management success in obtaining high profits.

        A positive CAR indicates that in accordance with capital theory, capital is an important factor for the bank in the framework of business expansion and losses. Where the capital adequacy ratio (CAR), means the amount of capital itself required to cover the risk of loss that may arise from the planting of risk-bearing assets (Veithzal, Veithzal and Idroes(2007). The non-significant CAR on ROA is probably due to a BI regulation requiring each bank to maintain a CAR with a minimum of 8%, so that bank owners to increase bank capital by providing fresh money to anticipate the scale of business in the form of credit expansion or loans provided for the capital adequacy ratio (CAR) of the bank can meet BI requirements. While the condition of banks listed on

the IDX at the time of poor research that is marked by the level of public confidence is still low visible from third party funds in the form of public funds deposits are not too large. Where funding of third party funds (DPK) at the end of 2010 there is fund settles 24,5% from total DPK 572 trillion Rupiahs more to LDR end of 2010 equal to 75,5% with increasing trend in 6 period last year (Yuda, 2011).

As a result of this incident, banks are less likely to disburse loans, banks and owners of capital more dominantly buy Bank Indonesia Certificates (SBIs) in which Risk Weighted Assets (ATMR) SBI by banks is 0. Thus the Risk Weighted Assets (ATMR) of banks is relatively small so that Capital Adequacy Ratio (CAR) remains large, this may be due to the banking crisis (www.bi.go.id). So it is reasonable if the CAR is not significant to ROA, because although the capital owned by the bank is high, but the public trust is still low, this will not affect the profitability of the bank. Or because banks tend to invest their funds more carefully and put more emphasis on bank survival so that CAR does not have much effect on bank profitability.

The findings of this study are consistent with the results of research conducted by Ahmad (2009) on non-go public banks stating that CAR has positive and significant impact on ROA.

NPL

Risk: Based on the literature, risk can be analyzed through various ways, namely credit risk, market risk, liquidity risk, overall risk etc. In this study, we consider only credit risk. In the literature, credit risk is measured by the ratio of non-performing loan to total loans (NPL), and a higher ratio indicates that there is more risk for losses from loan defaults Zhang,et al (2013). Changes in credit risk may reflect changes in the health of a bank's loan portfolio (Cooper, Jackson, and Patterson, 2003). Previous studies regarding credit risk show a mix picture about the relationship with profitability. Studies of Davydenko (2012), depicted that provisions for loans are significant and have a strong negative effect on profitability. Another measure of credit risk is loan loss provision to total loans which indicates the ability of banks to absorb losses from non-performing loans Zhang et al (2013). Syafri (2012) found that loan loss provision to total loan has a positive effect on profitability. A low level of credit quality is reported by a high level of ratio, and hence a low level of profitability.

LDR

LDR negative and significant effect on Return on Asset means that the higher the LDR, the smaller the profitability level (ROA) of a bank. Conversely, the smaller the LDR then the Return on Asset rate will be higher. This may be due to an increase in LDR that is not always followed by an increase in ROA. Another possibility is that the BUSN of foreign exchange is more aggressive in instilling the funds for the loans given to customers even though the guarantee from the customers' deposit is not too great. While these results are not in line with research Defri (2012) and Mahardian (2008) that the CAR has a positive and significant impact on ROA.

NIM

The results of this study support the results of previous research from Mahardian (2008) that the NIM has a positive and significant effect on Return On Asset means the greater the NIM the greater the rate of Return On Assets obtained by a bank. NIM is also positively and significantly related with lagged value of NIM proxied by NIM(-1) which reveals that banks with a high level of NIM in previous year earn more NIM in current year.

Bank Size

The natural logarithm of total assets (SIZE) was used as proxy for size in the regression model according to the study of Boyd and Runkle(1993). The result indicates that the size is positive and statistically significant to bank profitability. This implies that bank size induces economies of scale there by making larger banks more profitable. Economies of scale will reduce the cost of gathering and processing information. The larger the bank size, the more profitable the bank. It could also mean that bank size is associated with diversification which may impact favorably on risk and product portfolio. The data of this study shows the size of the Ethiopian commercial bank which is measured by the log of total assets of 12 years. Consequently, this improvement leads to the profitability of banks in Indonesia. The result implies that larger banks enjoy the higher profit of smaller banks in Indonesia banking sector because they are exploiting the benefits of economies of scale. The finding of this study was in consistent with the findings of Akhavein, Berger and Humphrey

(1997), Smirlock (1985) and Damena (2011). Similarly, the result of the regression analysis is fully supported. That is Indonesian banks profitably increases the profitability of the banks.

Conclusion

It is fact, a strong and healthy financial system is a prerequisite for sustainable economic growth of a given country. In order to survive negative shocks and maintain a good financial stability, the financial managers and policy maker should identify the key performance determinants of commercial banks. Because of this, the current study specified an empirical framework to investigate the effect of bank-specific, industry specific and macroeconomic determinants on the profitability of Indonesian commercial   banks from 2010 to 2015. The main objective of the study was to identify the main bank-specific, and economic factors that can affect Indonesian banks profitability and to what extent these determinants exert impact on Indonesian banks profitability. In doing so, previous studies on bank profitability have been reviewed and it is summarized that the profitability of bank is usually expressed as a function of determinants.The determinant factor in this study we can be from internal factors that have been studied and selected in order to determine the factors that are important in the study. A number of factors such as CAR, NPL, NIM, LDR and Bank Size are independent factors, in which some factors positively affect the growth of a bank. from the existing study results, we can see that there are only two factors that can positively affect the ROA, such as NIM and Bank Size, where the level of the adequacy of a bank can have a good effect in the bank's income, in contrast to the increase in the amount of Liquidity that can be at risk negative against a bank. We can see the bank banks in Indonesia, where a bank that has a large capital, has a good advantage. But bank size is not a benchmark in a bank's earnings, we also need to look at the growth of other factor factors, which can affect revenue.

Recommendation

Banks in Indonesia should not only be concerned about internal structures and policies, but they must consider both the internal environment and the macroeconomic environment together in fashioning out strategies to improve their performance or profits.

In general, as many literatures supports financial intermediation in Indonesia is still in its early stages even by the standards of other low-income countries: more than 90 percent of the population is unbanked (versus an average of 60-70 percent elsewhere in ASIA); and many other metrics such as the total number of banks, banks contribution to GDP, bank accounts per person, branches per person, and bank credit per person are lower in Indonesia compared to other Asia countries. Thus, Indonesia commercial banks should focus to reach this unmet demand of finance by adjusting their strategy with the government regulation.

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