

Assessing the internal factor affecting the bank profitability in Indonesia: Case of dual banking system

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Abstract

Purpose – In an uncertain economic condition, maintaining companies' profitability is essential. This study aims to analyze and assess the factors that affect bank profitability by focusing on internal factors such as capital, size, asset quality, and liquidity risk. This study also observed the effect of Islamic and conventional banking in Indonesia with a comprehensive profitability analysis as measured by ROA, ROE, and NIM/NOM.

Methodology – The method used in this research was panel data regression. The data studied were derived from the quarterly reports of Islamic and conventional banking in Indonesia for five years, from 2016 to 2020.

Findings – The results showed that conventional banking in Indonesia had a higher level of profitability than Islamic banking. The profitability of conventional banks is significantly influenced by the level of equity, size, CKPN, and LDR. On the other hand, Islamic banking in Indonesia generally has a lower level of profitability, but in terms of individual performance, the value was not inferior to conventional banking. Variables that significantly influence the profitability of Islamic banking included equity, CKPN, and FDR.

Implication – Banks in Indonesia must improve their performance so that the development of asset size can be in line with the level of profitability generated, maintain asset quality so that the health of the bank is maintained, and has proportional equity and LDR/FDR value.

Originality – This research used three profitability ratios: ROA, ROE, and NIM/NOM, and analyzed Islamic and conventional banking, considering that Indonesia has a dual banking system, so the analysis carried out was more comprehensive.

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Introduction

Banking has a vital role in the economy for having an economic function in providing financial intermediation and aims to create economic growth. Maintaining banking stability is critical to keep the financial system running efficiently. Increasing profitability is the key to achieve banking efficiency (Menicucci & Paolucci, 2016). Indonesia has a dual banking system, namely Islamic and conventional banking, that operates in tandem. In general, Islamic banks and conventional banks are organisations that share the same business goal of achieving profit. The difference between conventional banks and Islamic banks is in the principles of the funding structure and operating

activities. In Islamic banking practice, there is a prohibition on interest rates, gharar, speculation, and there must be actual activities that underlie each activity (Zarrouk et al., 2016).

Islamic banking and conventional banking have different principles and characteristics. In conventional banking, transactions carried out are based on interest which in Islam is included in the category of usury which is prohibited. In Islamic banks, every transaction must be based on certain contracts based on Islamic principles and rules and have real value in the economy. Islamic banking transactions are based on the PLS (Profit Loss Sharing) system, which divides profits and losses so that the transacting parties must share risks, and this, according to several studies, can stabilise banking performance during the crisis times (Alqahtani & Mayes, 2018; Beck et al., 2013; Said & Ali, 2016). In Indonesia, Islamic banks are still relatively new in development compared to conventional banks. The initiation of Islamic banking began to be introduced in 1980, and the first Islamic bank in Indonesia was established on November 1, 1991 (Otoritas Jasa Keuangan, 2021b).

Banking in Indonesia has developed and changed from time to time. Based on the Indonesian banking statistics report of July 2020, conventional commercial banks in Indonesia had the total assets of 9,412,187 billion Rupiahs with 107 operating banks and 9,427,147 billion rupiahs in the distribution of funds, while Islamic banks had the total assets of 616,078 billion Rupiahs with 32 operating banks including sharia business units (Otoritas Jasa Keuangan, 2021c). The current and future condition of Volatility, Uncertainty, Complexity, Ambiguity (VUCA) is a challenge for every organisation, including banking (Giones et al., 2019; Schoemaker et al., 2018). Based on a report as quoted from the Indonesian banking booklet, the Covid-19 pandemic has impacted banking profitability. In 2020 the profitability of Conventional Commercial Banks decreased as reflected in the ROA ratio of 1.59%, lower than the previous year of 2.47%, and the NIM ratio, also decreased by 0.46% from the previous year. In Islamic banking, the COVID-19 pandemic has also reduced business activities, as reflected in a decline in financing growth and lower profitability. The ROA value in 2020 was 1.40%, lower than the previous year at 1.73%, while the NOM value decreased from 1.92% to 1.46% (Otoritas Jasa Keuangan, 2021a).

Profitability is measured by the difference between the income received and the costs incurred by the company (Alsharari & Alhmoud, 2019). Measuring profitability is important for banks because it is a measure of success and became the basis for assessing banking health to compete and survive as a business organisation (Bank Indonesia, 2007; Dao & Nguyen, 2020; Menicucci & Paolucci, 2016). In measuring profitability, various measurement ratios can be used, including Return on Assets (ROA), Return on Equity (ROE), and Net Interest Margin (NIM)/Net Operation Margin (NOM) (Batten & Vo, 2019; Dao & Nguyen, 2020). ROA is a profitability ratio that shows a bank's ability to manage its assets to generate profits, while ROE is a profitability ratio that indicates a bank's ability to use equity financing to generate profits. In addition to ROA and ROE, another profitability ratio is NIM/NOM, which is a ratio that assesses bank profitability through interest income generated or operational activities carried out (Batten & Vo, 2019).

Various studies related to banking profitability have been carried out including those related to company internal factors such as those conducted by Ali and Puah (2019) at banking in Pakistan and Alsharari and Alhmoud (2019) at Islamic banking in Jordan. Related to internal and macroeconomic factors conducted by Alharbi (2017) that worked in Islamic banking in 25 countries during 1992-2008 and Purwasih and Wibowo (2021) on Islamic banking in Indonesia. The next focus was on Islamic banking, as done by Said and Ali (2016) and Amzal (2016), then focused on conventional banking done by Menicucci and Paolucci (2016). Several studies chose the object of research on two banking systems, namely conventional banking and Islamic banking as was done by Achsani and Kassim (2021) in Indonesia and Ben Selma Mokni and Rachdi (2014) in countries that are members of Middle Eastern and North Africa (MENA).

This study aims to analyse and assess the factors that affect the profitability of banking in Indonesia, especially those related to the company's internal factors. According to the firm effect model concept, differences in profitability are mainly influenced by the company's internal characteristics which then affect at a broader or macroeconomic level, hence it is important to assess the level of profitability based on the influence of internal factors (Varghese, 2009). Kasri

and Azzahra (2020) also stated the importance influence of internal bank factors in maintaining bank stability so it is necessary to pay attention to these factors. Internal variables used in this study included the aspects of capital or equity, banking size, asset quality aspects through Reserve for Impairment Losses (CKPN), and liquidity risk as measured by Loan Deposit Ratio (LDR) for conventional banks/Financing to Deposit Ratio (FDR) for Islamic banks. This research is novel because the profitability analysis uses three ratios consisting of ROA, ROE, and NIM/NOM. Previous studies such as Said and Ali (2016), Achsani and Kassim (2021), Purwasih and Wibowo (2021) only used profitability measurements through ROA and other studies used ROA and ROE (Alsharari & Alhmoud, 2019). Some studies used three ratios of ROA, ROE, NIM/NOM, namely those conducted by Batten and Vo (2019) and Menicucci and Paolucci (2016), but the research was not conducted in Indonesia.

This research was conducted in Indonesia, which has a dual banking system, namely sharia and conventional banking. Seeing the differences in characteristics between the two existing systems, it becomes interesting to comprehensively see what factors affect the profitability of the two systems and whether there are differences in the influencing factors. This research is especially useful for banking management to increase the profitability value and to maintain banking health. For the government as a regulator, this research is useful as input in setting regulations that can create both healthy climate for banking in Indonesia and a stable economy.

Literature Review

Banking Profitability

Profitability is measured by the difference between the income received and the costs incurred by the company (Alsharari & Alhmoud, 2019). Measuring profitability is important for banks because it is a measure of success and become the basis for assessing banking health to compete and survive as a business organisation (Bank Indonesia, 2007; Dao & Nguyen, 2020; Menicucci & Paolucci, 2016). The bank's profitability performance indicates the success of management and it is an important performance indicator for investors. With the profitability or profits obtained, banks will be able to increase their company's cash flow so that it can become a source of financing to increase business productivity. By generating profitability effectively, investor and customer confidence will also increase in banking so that they are expected to improve the economy (Menicucci & Paolucci, 2016).

Regarding profitability, there are two streams of related concepts; the first is the structure conduct performance model (SCP) and the second is the firm effect model. Structure conduct performance model (SCP) views that profitability is influenced by factors in the concentration of an industry and market structure including market regulations, economic growth, inflation, interest rates, and ownership. The firm effect model is the view that profitability is influenced by individual company characteristics such as operating efficiency, management structure, or quality which will then affect the industry and market structure. The firm effect model assumes that each company has different conditions, causing differences in productivity and profitability. The relatively higher level of productivity is a competitive advantage owned by the company in which it is then reflected in its level of profitability (Alsharari & Alhmoud, 2019; Varghese, 2009).

Banking profitability can be measured and evaluated through accounting data reflected in financial ratios. Ratios and measurements that can be used to measure profitability include ROA, ROE, and NIM/NOM. ROA is a comparison between the rate of return with assets owned which describes how effective the company is in managing assets to earn a profit. ROE is a comparison between the rate of return with the value of equity which describes how effective the company is in managing equity to earn a profit, and NIM/NOM is a comparison between the rate of return generated from interest or operational activities with the average asset which describes how much profit is earned from interest for conventional banks and operational activities for Islamic banks (Batten & Vo, 2019; Dao & Nguyen, 2020). In terms of the dependent variable, ROA, ROE and NIM are the selected calculation ratios used to measure banking profitability performance (Adelopo et al., 2018; Alharbi, 2017; Alsharari & Alhmoud, 2019; Menicucci & Paolucci, 2016).

From various previous studies on banking profitability, there was a research focused on the company's internal factors by Ali and Puah (2019), Alsharari and Alhmod (2019), Menicucci and Paolucci (2016) and combined internal factors and external macroeconomic factors (Alharbi, 2017; Purwasih & Wibowo, 2021; Said & Ali, 2016). Macroeconomic variables that were widely used in previous studies were GDP and inflation followed by other variables such as exchange rates, interest rates, taxes, and oil prices. Research focused on the company's internal factors was conducted by Ali and Puah (2019) using the variables of bank size, liquidity risk, credit risk, funding risk, and bank stability, with the results showing that almost all variables had a significant effect on banking profitability. Variables in this research that had no significant relationship included liquidity risk in times of crisis and credit risk when conditions were stable. Alsharari and Alhmod (2019) used internal variables in the form of previous year's profitability, company size, debt level, industrial sector, type of ownership, and the current ratio with research results showing that three of six variables namely size, type of ownership, and liquidity ratio had an insignificant effect. Menicucci & Paolucci (2016) conducted a study using internal variables in the form of size, capital ratio, loan ratio, time deposit, and loan loss provisions. The results showed that all variables in the model had a statistically significant impact on profitability, but the relationship's direction was different.

Previous research has also focused on two types of banking: Islamic and conventional banking. A study conducted by Achسانی and Kassim (2021) in Indonesia states that the internal variables that affect bank profitability are size and equity with a positive direction of the relationship. Research conducted by Zarrouk et al (2016) in MENA country states that the internal variable that has a positive effect is equity while the loan loss provision has a negative relationship direction. This study also states that the determinant factors affecting bank profitability do not significantly differ between Islamic banks and conventional banks. Other research conducted by Alsharari and Alhmod (2019) shows that the factors that affect profitability as measured by ROA are previous year's ROA, company size, debt level, accounting firm size; and ownership ratio, while profitability as measured by ROE is influenced by the previous year's ROE, debt level, audit firm size and level of voluntary disclosure. Chowdhury (2015), who examined Islamic banking in Malaysia, found that internal banking factors namely the capital adequacy ratio had a significant positive effect, and the overhead variable had a negative effect on the profitability of Islamic banks. In this case, the researcher mentions that Islamic banks must increase their equity financing portfolio compared to debt financing, which means Islamic banking must increase contracts that have risk-sharing principles such as *mudharabah* and *musyarakah* contracts.

Hypotheses

The current research focuses on internal banking factors with the following variables:

Equity (EQTA)

Equity is a ratio of capital strength that refers to the amount of bank equity that is sufficient to overcome a crisis that may be experienced. The higher the equity ratio, the lower the need for external funding, and the expectation is that the profitability will be higher. Several studies that analyse banking profitability through this variable include (Achسانی & Kassim, 2021; Alharbi, 2017; Almaqtari et al., 2019; Javid & Alalawi, 2018; Zarrouk et al., 2016).

H₁: Equity affects bank profitability

Size

Bank size is usually used to assess the economies of scale in the banking sector. A bank that has a large size can reduce costs due to the economies of scale and large scope. On the other hand, if the assets owned are not managed efficiently, a large bank size can reduce bank profitability. Bank size is used as a proxy to see the cost advantage associated with banking size or assets. Bank size is expected to have a positive relationship to profitability. Previous studies that used this

variable include (Alharbi, 2017; Ali & Puah, 2019; Batten & Vo, 2019; Ben Selma Mokni & Rachdi, 2014; Dao & Nguyen, 2020)

H₂: Size affects bank profitability

CKPN (Allowance for Impairment Losses)

CKPN (Allowance for Impairment Losses) is a ratio used to measure the quality of banking assets. By definition, based on Bank Indonesia Regulation No.14/15/PBI/2012, CKPN is an allowance made based on a decrease in the carrying value of a financial asset that is less than the initial carrying amount (Bank Indonesia, 2012). It functions to anticipate the existence of non-performing assets that must be formed by banks if there is objective evidence of impairment as a result of events that occur after the initial asset recognition value. CKPN is important for banks in anticipation of credit risk that may arise so that it is expected that it can be used to improve banking health. The higher the reserve for losses formed by the bank, the lower the bank's capacity to channel credit, thereby eliminating the bank's opportunity to obtain higher profits (Sutriani et al., 2018). Theoretically the relationship between CKPN and Profitability is in a negative direction, where the formation of CKPN will be charged as a cost that will reduce profit, meaning that profitability also decreases. Several previous studies that used quality variables to see their effect on banking profitability include (Javaid & Alalawi, 2018; Menicucci & Paolucci, 2016; Zarrouk et al., 2016; Zulfikar et al., 2019)

H₃: CKPN (Allowance for Impairment Losses) affects banking profitability

LDR (Loan Deposit Ratio)/FDR (Financing Deposit Ratio)

LDR/FDR is the ratio between the amount of credit/financing provided by the bank and the funds received by the bank. This ratio looks at the bank's ability to channel credit or financing. In the distribution process, banks must apply the precautionary principle because there is a risk of withdrawal of funds from depositors. This ratio is used as an assessment of banking liquidity. Based on Bank Indonesia regulations, the standard LDR value is between 78%-92% (Bank Indonesia, 2013), while in Islamic banking, the term credit is unknown, so that the liquidity assessment uses the Financing to Deposit Ratio (FDR) ratio. The higher the LDR/FDR ratio, the better the bank carries out its intermediation function. The relationship between the Financing Deposit Ratio (FDR) on the profitability of Islamic Banking is positive, that is, the greater the FDR, the greater the profitability of Islamic Banking. Several previous studies examining the relationship between bank liquidity and profitability include (Fathoni, 2020; Purwasih & Wibowo, 2021; Said & Ali, 2016).

H₄: LDR (Loan Deposit Ratio)/FDR (Financing Deposit Ratio) affects banking profitability

Conceptual framework

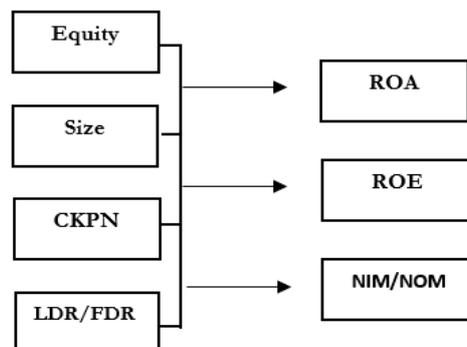


Figure 1. Conceptual model

This study aims to assess and explain the internal factors that affect conventional and Islamic banking profitability in Indonesia. This research is based on the view of the firm effect

model, which assumes that changes in company profitability are more influenced by internal factors inherent in the company. Assessing banking profitability is important because it is a benchmark for the company's success and reflects the health of the banking sector, especially in times of increasing uncertainty and competitive challenges from other companies. With good profitability, banks are expected to be able to survive amid intense competition and increase their business. This study measures banking profitability through three proxies of ratios that are often used in previous studies, namely ROA (Return On Assets), ROE (Return On Equity), NIM/NOM (Net Interest/Operation Margin). The use of these three ratios is expected to provide a more comprehensive analysis of the profitability of conventional and Islamic banking in Indonesia. There are four independent variables used in this study, including equity or capital value compared to total assets to measure the ability of capital to finance the company, bank size (size) to see assets that can be used to manage the company, CKPN (Reserve for Impairment Losses) for measuring the quality of banking assets, as well as the LDR (Loan Deposit Ratio)/FDR (Financing Deposit Ratio) to see the risk of banking liquidity. This study consists of a total of six test models that describe the relationship between the four independent variables with three dependent variables consisting of ROA, ROE, and NIM in conventional banking and Islamic banking. The conceptual model proposed by the researcher in this study is shown in Figure 1 above.

Research Methods

Data

The data in this study are panel data from 10 Islamic banks and 10 conventional banks during the period of 2016 to 2020 every quarter so that there were 400 observations. The research sample is banking in Indonesia, consisting of 10 Islamic commercial banks and 10 conventional banks registered with the OJK (Financial Services Authority). 10 Islamic commercial banks were selected because they operated during the study period and included complete reports. The 10 selected conventional banks include the banks with the largest book values and include quarterly reports for the period 2016 to 2020. The source of data in this study was secondary data obtained from banking financial reports that have been published on the OJK (Financial Services Authority) website. Quarterly data were selected to match the bank's obligation to disclose its financial statements to the public.

Variables and Measurements

To comprehensively analyse the internal factors that affect banking profitability, this study used three types of profitability ratios, namely ROA, ROE, NIM, as done by (Menicucci & Paolucci, 2016). In Table 1 is the definition of variables and measurements used in this study.

Estimated Research Model

This study uses panel data regression analysis techniques, namely the regression method that is carried out on the type of combined data between cross-section and time series. This study tested 6-panel data regression models with endogenous variables consisting of ROA, ROE, and NIM in two types of banking, namely Islamic commercial banks and conventional banks. The model application in this study is as follows (Kuncoro, 2003):

$$ROA_{KONVEN\ it} = \beta_0 + \beta_1 EQTA_{it} + \beta_2 size_{it} + \beta_3 CKPN_{it} + \beta_4 LDR_{it} + \epsilon_{it}$$

- (1) $ROA_{it} = \beta_0 + \beta_1 EQTA_{it} + \beta_2 size_{it} + \beta_3 CKPN_{it} + \beta_4 LDR_{it} + \epsilon_{it}$
- (2) $ROE_{it} = \beta_0 + \beta_1 EQTA_{it} + \beta_2 size_{it} + \beta_3 CKPN_{it} + \beta_4 LDR_{it} + \epsilon_{it}$
- (3) $NIM_{it} = \beta_0 + \beta_1 EQTA_{it} + \beta_2 size_{it} + \beta_3 CKPN_{it} + \beta_4 LDR_{it} + \epsilon_{it}$
- (4) $ROA_{it} = \beta_0 + \beta_1 EQTA_{it} + \beta_2 size_{it} + \beta_3 CKPN_{it} + \beta_4 FDR_{it} + \epsilon_{it}$
- (5) $ROE_{it} = \beta_0 + \beta_1 EQTA_{it} + \beta_2 size_{it} + \beta_3 CKPN_{it} + \beta_4 FDR_{it} + \epsilon_{it}$
- (6) $NOM_{it} = \beta_0 + \beta_1 EQTA_{it} + \beta_2 size_{it} + \beta_3 CKPN_{it} + \beta_4 FDR_{it} + \epsilon_{it}$

Information: ROA = Return On Assets, ROE = Return On Equity, NIM/NOM = Net Interest Margin/Net Operating Margin, EQTA = Equity, Size = Banking Size, CKPN = Allowance for Impairment Loss, LDR/FDR = Loan Deposit Ratio/Financing Deposit Ratio, ϵ = error term

Models (1), (2), and (3) are measurements for profitability in conventional banking while models (4), (5), (6) are measurements for Islamic banking. These six models were then tested using the panel data regression method by performing the Chow test and Hausman test to determine between CEM (Common Effect Model), FEM (Fixed Effect Model), and REM (Random Effect Model).

Table 1. Definition of Variables and Measurements

Category	Variable	Definition	Measurement	Data source
Endogenous Variables	ROA	A bank's profitability ratio that shows the ability to manage assets to generate profits.	Earnings before tax/total assets x 100% (Fathoni, 2020)	OJK Report
	ROE	The profitability ratio shows the ability of banks to use equity financing to generate profits.	Earning after-tax/total equity x 100% (Zarrouk et al., 2016)	OJK Report
	NIM/NOM	Ratio to measure bank profitability from interest income or operational activities that carried out.	Net interest income (operational income)/total assets x 100%(Menicucci & Paolucci, 2016)	OJK Report
Exogenous Variable	Equity	The ratio that shows capital adequacy compared to total assets owned	Equity/Total Asset (Zarrouk et al., 2016)	OJK Report
	Size	Asset value that describes the size of the bank	LN total Asset (Sufian & Kamarudin, 2015)	OJK Report
	CKPN	Asset quality ratio in the form of an allowance formed if the carrying amount of financial assets after impairment is less than the initial carrying amount	Allowance for impairment losses/Total loan (financing) x 100% (Fathoni, 2020)	OJK Report
	Liquidity (LDR/FDR)	Ratio to measure the bank's ability to channel debt or financing as well as the availability of liquidity to pay depositors	Total financing (credit)/Total third party funds x 100% (Fathoni, 2020)	OJK Report

Results and Discussion

Descriptive statistics

Table 2 shows the result analysis of statistical descriptions of each variable in research, both conventional banking and Islamic banking. For the value of profitability measured by ROA, ROE, and NIM/NOM, the average value of the three higher ratios was in conventional banks with ROA (2.142850), ROE (11.97210), NIM (5.415600), while the value average in Islamic banking was lower as big as ROA (1.933150), ROE (5.565550), and NOM (0.026450). When viewed from the maximum value, the Islamic banking group had a value that was superior to ROA (17,23000), ROE (37,16000), and NOM (14,97000), while conventional banks had a maximum value of ROA (4.020000), ROE (26.55000), and NIM (11,66000). Although Islamic banking had a higher maximum value, the average was lower because the standard value of the deviation is higher so that the data varied more with a minimum value that also different is much smaller than the data on conventional banking. For exogenous variables in research, conventional banking had a greater average asset size than sharia banking, with a value of 19.60179 compared to 16.15445. For other variables, namely, the ratio of equity, CKPN, and FDR of Islamic banks, had a larger average, as seen in the table. This meant that Islamic banking had a higher equity composition than assets with greater value (CKPN) reserves value and a higher financing distribution ratio.

Table 2. Descriptive Statistics Result

Variable	Mean	Median	Max	Min	Std.Dev	Obs
Conventional Bank						
ROA	2,142850	2,245000	4,020000	-4,890000	1,193631	200
ROE	11,97210	12,17500	26,55000	-38,33000	6,771674	200
NIM	5,415600	5,290000	11,66000	3,060000	1,267794	200
Ekuitas	0,152462	0,149311	0,264366	0,049348	0,041173	200
Size	19,60179	19,38123	21,07518	17,94524	0,884608	200
CKPN	2,804950	2,675000	7,670000	0,320000	1,454566	200
LDR	87,90405	89,57000	114,2400	55,35000	11,67771	200
Islamic Bank						
ROA	1,933150	0,880000	17,23000	-11,02000	4,292933	200
ROE	5,565550	3,925000	37,16000	-58,64000	12,61257	200
NOM	0,026450	0,320000	14,97000	-37,74000	7,521376	200
Ekuitas	0,205687	0,145249	0,898891	0,064301	0,178746	200
Size	16,15445	15,91550	17,93774	13,39978	1,135968	200
CKPN	3,181350	2,025000	34,33000	0,010000	4,336303	200
FDR	101.7401	91.10000	506.6000	55.00000	59.28991	200

Model Specification Test

To find out the best model between Common Effect Model (CEM), Fixed Effect Model (FEM), and Random Effect Model (REM) to be used in panel data regression, the Chow Test and Hausman Test were carried out on each model in the study. Table 3 below is the result of the specification test on each model:

Table 3. Summary of Model Selection Test Results

Model	Test	Prob.	Conclusion
1 (variable exogenous to conventional ROA)	Chow Test	0,0000	FEM
	Hausman Test	0,0000	FEM
2 (variable exogenous to conventional ROE)	Chow Test	0,0000	FEM
	Hausman Test	0,0000	FEM
3 (variable exogenous to NIM)	Chow Test	0,0000	FEM
	Hausman Test	0,0000	FEM
4 (variable exogenous to sharia ROA)	Chow Test	0,0000	FEM
	Hausman Test	0,2537	REM
5 (variable exogenous to sharia ROE)	Chow Test	0,0000	FEM
	Hausman Test	0,0554	REM
6 (variable exogenous to NOM)	Chow Test	0,0000	FEM
	Hausman Test	0,0000	FEM

From the results of the Chow test, if the Chi-square probability value was more than 0.05, the model chosen was the common effect, while if the Chi-square probability value was less than 0.05, the model that should be used was the fixed effect. For the Hausman test, if hypothesis 0 was rejected or the Chi-square probability was less than 0.05, the conclusion used FEM. On the other hand, if H_a was rejected or the probability was more than 0.05, the model used was REM. The results of the tests carried out on the six models concluded that four models in the study used FEM (Fixed Effect Model), and two models in the study used REM (Random Effect Model). Models that used FEM included model 1, which measured factors on the endogenous variable ROA of conventional banking, model 2, which measured factors on the endogenous variable of ROE of conventional banking, model 3, which measured factors on the endogenous variable NIM of conventional banking, and model 6 which measured the factors on the endogenous variable NOM in Islamic banking. Models that used REM include model 4, which measured factors on the endogenous variable ROA of Islamic banking, and model 5, which measured factors on the endogenous variable of ROE of Islamic banking.

Influence of Internal Variables on the Profitability of Conventional Banking**Table 4.** Panel Data Regression Results in Conventional Banking

Model 1 Variabel Endogen ROA	Coefficient	Std. Error	t-Statistic	Prob.	Sig.
C	33,53893	9,170333	3,657329	0,0003	
Equity	0,199795	0,247491	0,807279	0,4206	-
Size	-10,37532	3,093176	-3,354262	0,0010	1%
CKPN	-0,589959	0,077440	-7,618280	0,0000	1%
LDR	-0,248593	0,288008	-0,863145	0,3892	-
Effect specification					
R-squared	0,787035	Mean dependent var		0,667624	
Adjusted R-squared	0,771823	S.D. dependent var		0,571219	
S.E. of regression	0,272859	Akaike info criterion		0,309025	
Sum squared resid	13,55025	Schwarz criterion		0,543176	
Log-likelihood	-16,28444	Hannan-Quinn criteria.		0,403820	
F-statistic	51,73854	Durbin-Watson stat		1,135926	
Prob(F-statistic)	0,000000				
Model 2 Variabel Endogen ROE	Coefficient	Std. Error	t-Statistic	Prob.	Sig.
C	25,99194	14,77324	1,759393	0,0802	
Equity	-0,797507	0,398704	-2,000247	0,0470	5%
Size	-10,23378	4,983058	-2,053718	0,0414	5%
CKPN	-0,424962	0,124754	-3,406392	0,0008	1%
LDR	1,276964	0,463976	2,752217	0,0065	1%
Effect specification					
R-squared	0,539512	Mean dependent var		2,409038	
Adjusted R-squared	0,506620	S.D. dependent var		0,625803	
S.E. of regression	0,439571	Akaike info criterion		1,262712	
Sum squared resid	35,16646	Schwarz criterion		1,496863	
Log-likelihood	-109,7458	Hannan-Quinn criteria.		1,357508	
F-statistic	16,40250	Durbin-Watson stat		1,640323	
Prob(F-statistic)	0,000000				
Model 3 Variabel Endogen NIM	Coefficient	Std. Error	t-Statistic	Prob.	Sig.
C	45,84470	2,693277	17,02190	0,0000	
Equity	0,170364	0,068898	2,472710	0,0143	5%
Size	-14,02930	0,908192	-15,44750	0,0000	1%
CKPN	-0,049225	0,022064	-2,230949	0,0269	5%
LDR	-0,465566	0,084524	-5,508066	0,0000	1%
Effect specification					
R-squared	0,882444	Mean dependent var		1,663422	
Adjusted R-squared	0,874228	S.D. dependent var		0,226587	
S.E. of regression	0,080358	Akaike info criterion		-2,137232	
Sum squared resid	1,201064	Schwarz criterion		-1,906350	
Log-likelihood	227,7232	Hannan-Quinn criteria.		-2,043798	
F-statistic	107,4021	Durbin-Watson stat		0,946418	
Prob(F-statistic)	0,000000				

Table 4 presents the results of the significance test of each variable in conventional banking. It can be seen that almost all of the variables had a significant effect on profitability, both as measured by ROA, ROE, and NIM. Two variables had no significant relationship, namely equity and LDR. The first model that measured the effect on bank profitability through ROA had an Adjusted R-square value of 0.771823, meaning that the four exogenous variables described 77% of the effect on ROA. Bank size and CKPN (Allowance for Impairment Losses) had a significant negative effect on ROA at the 1% level, but equity and LDR had no significant effect. The second model that measured the effect on banking profitability through ROE had an Adjusted R-square value of 0.506620, meaning that the exogenous variable could explain its effect on endogenous variables by 50% while the other 50% was explained by other variables.

Equity and size variables had a significant negative effect on ROE at the 5% level, while the CKPN and LDR variables had a significant effect at the 1% level with different directions of relationship. CKPN had a negative relationship with a coefficient value of -0.424962 and LDR had a positive relationship with a coefficient value of 1.276964 on conventional banking ROE. The third model that measured the effect on the profitability of conventional banking through NIM has an Adjusted R-square value of 0.874228, indicating that the four exogenous variables could explain their effect on NIM up to 87% and the rest was determined by other variables not tested in the study. For the influence of each variable in model 3, it can be seen in the table that all of them had a significant effect with different levels. Equity had a positive relationship directly with a coefficient value of 0.170364 and CKPN had a negative relationship directly with a coefficient value of -0.049225 at the 5% level. The variables of bank size and LDR both had a negative relationship direction at the 1% level with coefficient values of -14.02930 and -0.465566. For the influence of variables simultaneously or together, the three models showed a significant effect at the 1% level with an F-statistic value of 51.73854 in model one, 16.40250 in model two, and 107.4021 in model three.

Influence of Internal Variables on the Profitability of Islamic Banking

Table 5. Panel Data Regression Results in Islamic Banking

Model 4 Variabel Endogen ROA	Coefficient	Std. Error	t-Statistic	Prob.	Sig.
C	3,823486	9,764560	0,391568	0,6958	
Equity	13,59903	2,953524	4,604341	0,0000	1%
Size	-0,143807	0,583831	-0,246317	0,8057	-
CKPN	-0,340285	0,049487	-6,876307	0,0000	1%
FDR	-0,012599	0,003958	-3,182790	0,0017	1%
R-squared	0,385340	Mean dependent var		0,414744	
Adjusted R-squared	0,372732	S.D. dependent var		3,010879	
S.E. of regression	2,384623	Sum squared resid		1108,854	
F-statistic	30,56220	Durbin-Watson stat		1,556895	
Prob(F-statistic)	0,000000				
Model 5 Variabel Endogen ROE	Coefficient	Std. Error	t-Statistic	Prob.	Sig.
C	38,97007	30,99208	1,257420	0,2101	
Equity	2,238481	9,500415	0,235619	0,8140	-
Size	-1,769708	1,850061	-0,956567	0,3400	-
CKPN	-1,083783	0,159768	-6,783463	0,0000	1%
FDR	-0,017971	0,012839	-1,399752	0,1632	-
R-squared	0,230183	Mean dependent var		1,267693	
Adjusted R-squared	0,214392	S.D. dependent var		8,823639	
S.E. of regression	7,820790	Sum squared resid		11927,13	
F-statistic	14,57675	Durbin-Watson stat		1,200762	
Prob(F-statistic)	0,000000				
Model 6 Variabel Endogen NOM	Coefficient	Std. Error	t-Statistic	Prob.	Sig.
C	26,83155	26,62488	1,007762	0,3149	
Equity	35,82813	6,581212	5,444002	0,0000	1%
Size	-1,976025	1,634217	-1,209157	0,2281	-
CKPN	-0,259538	0,108304	-2,396390	0,0175	5%
FDR	-0,014028	0,008055	-1,741480	0,0833	10%
Effect specification					
R-squared	0,631993	Mean dependent var		0,026450	
Adjusted R-squared	0,606272	S.D. dependent var		7,521376	
S.E. of regression	4,719494	Akaike info criterion		6,008710	
Sum squared resid	4142,894	Schwarz criterion		6,239592	
Log-likelihood	-586,8710	Hannan-Quinn criteria.		6,102144	
F-statistic	24,57116	Durbin-Watson stat		1,271316	
Prob(F-statistic)	0,000000				

Table 5 shows the significance test on Islamic banking. In model 4, it can be seen the effect of exogenous variables on Islamic banking ROA which showed three of the four variables had a significant influence at the 1% level. Variables that had a significant effect included equity, CKPN, and LDR while size did not have a significant effect. In model 5 which describes the effect on banking ROE, only one variable had a significant effect at the 1% level, and the other three variables had no significant effect. The variable that had a significant effect was CKPN, with a negative relationship direction and a coefficient value of -1.083783. In model 6, which showed the relationship between exogenous variables and NOM, Islamic banking had different results at the level of significance. Equity had a significant positive effect at the 1% level, CKPN had a significant negative effect at the 5% level, and LDR had a significant negative effect at the 10% level. One other variable, namely the size of the bank, had a negative effect, but the results were insignificant. Model 4 had an Adjusted R-square value of 0.372732, so it can be seen that the model explained 37% of the effect on ROA. Model 5 had an Adjusted R-square value of 0.214392 so that it explained the effect on ROE of 21%, and model 6 had an Adjusted R-square value of 0.606272 so that it could explain the NOM of Islamic banking of 60%. Of the three models in the table above, all of them had a significant simultaneous effect, or the variables in the study affect the endogenous variables simultaneously significantly

Discussion

From the results of the significance test of the four variables described above, the variable that had a significant relationship in the overall model both in conventional banking and Islamic banking was CKPN (Allowance for Impairment Losses). The CKPN variable had a negative and significant relationship, so that the higher allowance for impairment losses formed by the bank will reduce the level of profitability both as measured by ROA, ROE, and NIM. These results are the same with research conducted by Menicucci & Paolucci (2016) on banking in Europe and Zarrouk et al (2016) on Islamic banking in MENA countries (the Middle East and North Africa). Low profitability causes a decrease in profitability because banks must establish reserve funds when there is an increase in credit risk. Based on this, banks must be able to maintain their performance to manage credit risk effectively and make it efficient in the formation of reserve funds and disbursement of credit or financing.

On the variable size, the results showed a significant negative influence on bank profitability, both ROA, ROE, and NIM. These results only occurred in conventional banking while in Islamic banking, although they showed a negative direction, they were insignificant. These results are the same as previous research conducted in Vietnam and Thailand (Batten & Vo, 2019; Dao & Nguyen, 2020). The size of the bank can have a positive effect on profitability because the bank is expected to be able to achieve efficiency with a large number of assets, but the size of the bank can also have a negative effect when the assets owned are not managed properly. This is evident in this study when the size of the banking sector is getting bigger, the profitability of conventional banking in Indonesia is decreasing. Conventional banking in Indonesia which has smaller assets shows a better performance in generating profitability. This is because the larger the size of the bank, the greater the risk of inefficiency at the level of management, bureaucracy, and other reasons (Batten & Vo, 2019).

The equity variable that measures the comparison between the value of equity and assets showed that four of the six models obtained significant results with the majority of the direction relationship being positive. The equity variable had a significant positive effect on the NIM of conventional banking and the ROA and NOM of Islamic banking. Based on these results, it means that the higher bank's equity, will increase the profitability. The increase in equity can affect the increase in profitability because the higher the equity ratio, the lower the need for external funding and its hope to reduce funding costs to increase profitability (Zarrouk et al., 2016). The results of this study are in line with research conducted by Javaid and Alalawi (2018) on Saudi Arabian banking, Zarrouk et al. (2016) in MENA countries, Almaqtari et al. (2019) on commercial banking in India. The direction of the negative relationship between equity and conventional ROE occurs because both variables' measurements use equity values as

comparisons with different relationships (Zarrouk et al., 2016). Another reason, according to Dao and Nguyen (2020), is explained in the capital structure theory of Modigliani and Miller (1958), which considers tax rules on the company's capital structure.

The next variable is LDR/FDR, which measures the distribution of bank financing and credit. From the results of the significance test, four of the six models showed significant results, with the majority of the direction of the relationship being negative. This negative relationship indicated that a high LDR/FDR value caused a decrease in profitability as measured by ROA, NIM, and NOM. This result can be explained because the LDR and FDR ratios that were too high caused liquidity risk when there was a withdrawal of funds from depositors (Muhammad & Triharyono, 2019). The same results were also found in research conducted by Majid and Ulina (2020) on conventional banking in Indonesia in the pre-crisis period. Banks must be able to manage their funds efficiently and prioritize the precautionary principle by maintaining the ratio according to the specified standard, which is between 78% and 92% (Bank Indonesia, 2013).

Conclusion

From the overall results, it can be seen that conventional banking in Indonesia has a higher level of profitability than Islamic banking. The profitability of conventional banks is significantly influenced by the level of equity, size, CKPN, and LDR. On the other hand, Islamic banking in Indonesia generally has a lower level of profitability, but in terms of individual performance, the value is not inferior to conventional banking. Variables that significantly influence the profitability of Islamic banking are equity, CKPN, and FDR. Conventional banks in Indonesia have the higher levels of assets and equity, and Islamic banks have the higher levels of CKPN and FDR. Based on the results in this study, efforts to achieve efficient performance and maintain bank soundness must be carried out by considering the company's internal factors such as equity, size, CKPN, and LDR/FDR. Banks in Indonesia must be able to improve their performance so that the development of asset size can be in line with the level of profitability generated, maintain asset quality so that the health of the bank is maintained, and has proportional equity and LDR/FDR value. This research has a number of important implications for banks, regulators, and academics in their respective fields. It is expected that further research can use a more comprehensive concept so that the research findings are more complete.

Author Contributions

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