THE INFLUENCE OF BANKS SPECIFIC FACTORS, MACRO ECONOMIC FACTORS, AND INDUSTRIAL FACTORS ON NON-PERFORMING FINACING OF SHARIA BANKS IN INDONESIA FOR THE 2013–2022 PERIOD

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Abstract

Indonesia, as a country with the largest Muslim population, requires special attention to sharia banks because these financial institutions can be an alternative that allows people to avoid the practice of usury, which is contrary to sharia financial principles. Through sharia banks, people can access financial services that are in accordance with their religious beliefs. However, this sector faces various types of risks that not only affect its financial well-being, but also endanger the stability of the entire country and are one of the risks of bank financing. Financing problems are a major challenge to the stability of the banking sector. For this reason, this research aims to identify the factors that influence NPF in Islamic commercial banks in Indonesia. on 10 banks listed on the Indonesia Stock Exchange for the 2013-2022 period, and using data analysis methods by applying panel data regression techniques. The research results show that Bank Size, Financing Growth, Bank Diversification, Bank Competition and Inflation have no effect on NPF. On the other hand, Bank Operational Inefficiency, FDR, Bank Profitability, and CAR affect NPF.

Keywords: *Non-performing Financing, macroeconomics, bank specifics, industry competition*

1. INTRODUCTION

Indonesia, as a country with the largest Muslim population, requires special attention to sharia banks because these financial institutions can be an alternative that allows people to avoid the practice of usury, which is contrary to the principles of sharia finance (Khan, 2010). Through Islamic banks, people can access financial services that are in accordance with their religious beliefs and if Islamic banks can tap into potential Muslim clients, this can accelerate economic development in these countries (Imam & Kpodar, 2016). The banking sector is also considered a force that keeps the economy running. Without a banking sector that is stable and facilitates capital flows, sustainable economic growth will be paralyzed and will not function (Naili & Lahrichi, 2020; Rizvi et al., 2020).

However, this sector faces various types of risks that not only affect its financial well-being, but also endanger the stability of the entire country and one of the risks that erodes bank profitability and marks the start of a crisis is credit or bank financing risk (Berger & DeYoung, 1997). In the world of sharia banking, it is known as non-performing financing (NPF), which refers to financial assets that cannot be repaid, and therefore, no installment payments are received by the bank according to plan (Anita et al., 2022). Based on regulations from Bank Indonesia (2021), the maximum size of the NPF ratio is no more than 5%.

The high NPF ratio can be influenced by several factors, including bank size which can be measured by total assets (Andreani & Erick, 2016; Gantino dan Susanti, 2019). With large assets, the greater the flexibility in using them to manage risks arising from financing distribution (Havidz & Setiawan, 2015). Previous research has shown that the larger the bank, the lower the loan risk (Vouldis & Louzis, 2018; Stern & Feldman, 2004; Yulianti et al., 2018).

Other research refutes this statement that the bigger the bank, the higher the loan risk (Haq & Heaney, 2012).

Apart from bank size, capital adequacy is a crucial element that influences the risk of financing used to buffer this excessive risk (Naili & Lahrichi, 2022). A higher level of capital adequacy indicates greater financial resources that can be used to offset losses and reduce poor financial ratios (Muhammad et al., 2020; Shrieves & Dahl, 1992). Other research refutes this statement that banks holding large capital experience higher loan losses (Koehn & Santomero, 1980; Ghosh, 2017).

Another key factor that has a strong influence on credit risk is profitability, which refers to the company's ability to obtain maximum profit or profit (Rofik & Syah, 2020). Banks with higher loan losses experience low profits also due to their poor management skills and ineffective lending strategies (Louzis et al. 2012). banks with higher profits experience lower loan losses (Louzis et al., 2012; Ghosh, 2015; Makri et al., 2014). Other research refutes this statement that banks that earn higher profits experience higher loan losses (García-Marco & Robles-Fernández, 2008).

Apart from that, financing growth is the biggest source of income for banks in distributing financing (Andrianto et al., 2019). The greater the amount of financing distributed to the public, the more it will contribute to a bank's source of income (Wijayanti & Mardiana, 2020). banks that have high financing growth experience high financing losses as well (Foos et al., 2010; Salas & Saurina, 2002; Alhassan et al., 2014). Other research refutes the existence of this positive relationship, namely that banks with high financing growth experience lower financing losses (Boudriga et al., 2010).

Bank efficiency is also a factor in loan risk, where bank efficiency is one of the parameters underlying the measurement of an organization's performance (Hadad et al.,2011). The more inefficient a bank is, the greater the possibility of NPLs occurring because inefficient banks tend to provide riskier loans (Ciałowicz, 2014). The worse the bank's performance, the higher the level of loan losses (Berger & DeYoung, 1997). Other research refutes the existence of this positive relationship, namely that the worse the bank's performance, the lower the level of loan losses (Rossi et al., 2009; Louzis et al., 2012).

And the next determining factor for financing risk is diversification of income sources, by carrying out new activities, investments and activities other than financing that generate income other than Profit-Lost Sharing (PLS) income (Trinugroho et al., 2018). banks that expand into new business areas are more likely to experience loan losses due to increased risk (Louzis et al., 2012; Stiroh, 2004). Bank diversification has an impact on higher loan losses (Louzis et al., 2012; Boyd & Graham, 1986).

Then the Financing to Deposit Ratio (FDR) factor is of concern to researchers because FDR can be used to measure the effectiveness of providing funds. If the FDR is high, it can be concluded that the bank's ability is very good in carrying out its function as a financial intermediary with maximum efficiency. On the other hand, if the FDR is low, it means that the bank has not been able to fully maximize its intermediary role (Muhammad et al., 2020). Previous research has shown that FDR in the long term has a positive effect on NPF (Supriani & Sudarsono, 2018).

Next, the determining factor of financing risk is competition between banks which affects the value of a bank's franchise because it reduces its profitability. This will likely encourage banks to make riskier loans (Hellmann et al., 2000). On the other hand, in concentrated interbank markets, where large banks monopolize low-quality borrowers have difficulty accessing loans to reduce the risk of default (Boudriga et al., 2009). Other researchers confirm these findings such as Turk Ariss (2010) and De Haan & Poghosyan (2012). On the

other hand, competition will pressure bank managers to minimize their financing risks through careful lending decisions and adequate borrower screening (Ozili, 2019).

And finally, inflation which refers to an unavoidable phenomenon, namely the tendency of all prices to rise (Ramdoni & Gantino, 2019). In emerging markets, inflation is a major concern for central banks because wages are often low, which increases the level of bad debt and makes it difficult for the stock market to repay debt (Naili & Lahrichi, 2022). High inflation reduces the real value of borrowers' income and limits borrowers' ability to repay (Amuakwa-Mensah et al., 2017; Klein, 2013). Other research refutes this assertion that labor wages are more likely to adjust to price increases, which ensures continuity of borrower payments (Khemraj & Pasha, 2009).

Regarding the level of credit risk in the banking sector, it has previously been studied by Naili & Lahrichi (2022), however, this study only looked at bank size, capital adequacy ratio, bank profitability, credit growth, bank inefficiency, ownership concentration, banking diversification, product gross domestic (GDP), inflation, public debt, unemployment, and competition between banks. However, in this study the researchers focused more on Islamic commercial banks in Indonesia and added the Financing to Deposit Ratio (FDR) variable. Where the FDR variable can be applied to measure the extent to which the level of bank liquidity influences the level of financing risk (Muhammad et al., 2020). This FDR was added because it is related to the 2015 OJK regulations regarding factors for assessing the level of bank health using the RGEC method which consists of Bank Inneficiency (BOPO), Financing to Deposit Ratio (FDR), Bank Profitability (ROE), and Capital Adequacy Ratio (CAR).). Apart from that, in this study the variables Gross Domestic Product, Public Debt and Unemployment were omitted because financing has no relationship to the NPF variable and the ownership concentration variable was omitted because Islamic commercial banks in Indonesia have not yet implemented it comprehensively for managerial shares.

The aim of this research is to fill existing knowledge gaps by exploring robust evidence on key indicators of future problematic financing. Identification of these factors will help regulators address appropriate interventions, design broad financing policies, and implement regulatory-adjusted prudence, allowing Islamic banks to place emphasis on risk management systems and procedures that minimize default financing losses to prevent financial instability in future.

2. REVIEW OF LITERATURE

Non Performing Financing (NPF)

Non Performing Financing (NPF) refers to a situation where installment payments are past due or there are strong reasons to assume that these payments will never be made in full (Scardovi, 2016). According to Bank Indonesia (2021) NPF is a loan of doubtful quality, substandard and non-performing. Apart from that, this problem is also related to situations where the debtor is unable to pay payments according to the previous agreement, with the maximum NPF ratio being 5%. In addition, when a loan shows that it is past due, it is also called NPF, but if the bank cannot collect the entire principal or interest on the due date and there is no possibility of repayment in the future, this is called problematic financing (Anita et al., 2022).

Bank Operational Inefficiencies

Efficiency involves achieving an optimal balance between income and expenses, effort and results obtained, capital and profits, and costs and satisfaction. Sometimes, efficiency is considered equivalent to accuracy or can be formulated as the best comparison between expenditure and income, as well as between work effort and the results achieved (Rusdiana & Zaqiyah, 2022). Efficiency is also one of the achievements that forms the basis of

organizational performance in general (Ayadi et al., 2015). efficiency plays an important role in determining a bank's riskiness, low efficiency is a signal of poor senior management practices, including their substandard skills in credit assessment and decisions, lower competence in assessing the value of collateral pledged against loans, and difficulties in monitor borrowers to ensure loan contracts are implemented. Therefore, lower efficiency tends to lead to higher risks in banks (Wu et al., 2020).

Financing to Deposit Ratio (FDR)

Financing to Deposit Ratio (FDR) is a comparison between funds provided by banks and third parties (Wasiaturrahma et al., 2020). A high FDR indicates adequate capacity of Islamic banks in providing financing. Therefore, FDR can be an indicator of the effectiveness of providing funds. When FDR is high, it is concluded that the banking performance is very good in carrying out its role as a financial intermediary with maximum efficiency. On the other hand, if the FDR is low, it can be stated that the bank has not been able to fully maximize its intermediary role. However, it should be noted that the higher the FDR, this will indicate a decrease in the bank's liquidity level because more funds are used for financing. Conversely, a low FDR will describe a bank with a higher level of liquidity (Muhammad et al., 2020).

Bank Profitability

Profitability is the company's ability to generate maximum profits or profits (Dilipkumar, 2015). Bank performance is determined to be the primary driver of profitability resulting from their operations. Apart from that, the pillars and objectives of every banking activity (Ferrouhi, 2018). In measuring this ratio, return on assets (ROA) and return on equity (ROE) are generally used (Quoc Trung, 2021). In the aspect of financial analysis, these ratios interpret accounting values based on historical cost principles because they cause latency in performance measurement compared to market value (Quoc Trung, 2021).

Capital Adequacy Ratio (CAR)

Capital Adequacy Ratio (CAR) is an indicator that measures the level of capital adequacy by comparing equity capital with total assets assessed based on bank risk. This ratio is used to assess the bank's position in relation to financing risk, market risk and operational risk (Wiley, 2018). Bank managers and investors use the capital adequacy ratio to evaluate the level of risk faced by banks in paying maturing debt. Banks must ensure that the capital adequacy ratio reaches a certain level in accordance with regulations in the country where the bank operates. Compliance with regulations regarding capital adequacy not only helps banks maintain the stability of the banking sector and the economy as a whole, but also provides a solid direction for bank development. In addition, compliance with capital adequacy ratios provides investors with confidence regarding the safety of their deposits (Sang, 2021).

Bank Size (SIZE)

Bank size is a construct used to describe the relative size of an individual bank relative to other banks and the banking industry as a whole (Slage, 2021). Bank size is an important indicator in measuring a bank's assets (Yulianti et al., 2018). Company size can be measured by total assets (Andreani & Erick, 2016; Gantino dan Susanti, 2019). Bank size can reflect the bank's strength and ability to overcome problems so as to reduce the level of problematic financing and with large assets the bank can carry out financing analysis efficiently which can reduce problematic financing (Marijana Ćurak et al., 2013; Yulianti et al., 2018). Large banks benefit more from competition because they enjoy market power and opportunities to diversify their assets compared to small banks. Thus, large banks can guarantee more stable income without having an incentive to take excessive risks, thereby making these banks financially stable (Albaity et al., 2019).

Financing Growth

Financing growth plays an important role in a bank's operations. Most of the bank's business income comes from the distribution of financing, because most banks still depend on their main source of income from financing activities (Andrianto et al., 2019). The greater the amount of financing provided to the community, the more it will contribute to the bank's source of income (Wijayanti & Mardiana, 2020). So that financing distribution does not cause problems, banks need to pay attention to several aspects. First, the aspect of profit level (return). This refers to the amount of profit obtained from borrowing, which must meet applicable regulations to be considered healthy. Second, the risk level aspect. This refers to the level of risk faced related to the possibility of losing profits generated by bank financing (Wijayanti & Mardiana, 2020).

Bank Diversification

Banking diversification is a strategy implemented by banks with the aim of obtaining additional income from sources other than their main income. Banks' main income usually comes from profit lost sharing (PLS) income obtained from traditional activities such as financing (Trinugroho et al., 2018). Over the past few decades, banks have diversified into various fields moving from traditional deposit-taking and lending towards fee- and commission-based services such as insurance and investments (Abuzayed et al., 2018). In addition, income diversification banks can improve efficiency and reduce total volatility (Wu et al., 2020), which can lead to more bank liquidity creation (Hou et al., 2018), assuming bank profits are provided by providing more financial foundations. strong to meet lending companies' demand for investment funds (Lin et al., 2022).

Bank Competition

Bank competition is the level of competition that occurs in the banking market, which can have an effect on banks' risk-taking behavior and the stability of the banking system (Martín-Oliver et al., 2020). Banking sector competition is generally seen as an important driver of investment and economic growth. This ensures efficient allocation of resources and capital, and prevents a situation where market domination by a few large banks increases financing costs and limits access to financing for small entrepreneurs and the poor. Even though it has potential benefits, increasingly fierce competition can also cause negative side effects in the form of excessive competition from market entrants and reduced profit margins. This in turn could increase risk-taking incentives for incumbent banks (Brei et al., 2020).

Inflation

Inflation is an increase in overall prices that occurs significantly and sustainably over a long period of time. This causes a decrease in the value of money as prices increase. An increase in the price of just one or two goods is not considered inflation, unless the price increase spreads to most other goods. In addition, seasonal price increases, such as before major holidays or occasional events without continuation, are not considered inflation (Aji & Mukri, 2020). Inflation is closely related to a decrease in purchasing power, both at the individual and company level. Therefore, when the inflation rate increases, the impact will reduce company profitability (Ramdoni & Gantino, 2019). Inflation also means an increase in the amount of money and paper money in circulation, but people today use the term "inflation" to refer to the phenomenon that is an inevitable consequence of inflation, namely the tendency of all prices and wage levels to rise (Murphy, 2021).

HYPOTHESES

The Relationship Between Bank Operational Inefficiency and NPF

The more inefficient a bank is, the greater the possibility of an NPF because inefficient banks have poorer asset quality, lack portfolio diversification, and are more likely to provide

riskier loans (Ciałowicz, 2014). When a bank is inefficient, it results in poor management, so the process of financing assessment, financing monitoring and risk control is not optimal. This can result in banks providing financing to borrowers who lack quality or are unable to repay their loans (Berger & DeYoung, 1997). Unexpected events such as an economic downturn can also cause increased financing risks (Naili & Lahrichi, 2022). Previous research proves that inefficiency has an influence on NPF (Wu et al., 2020; Podpiera & Weill, 2008; Berger & DeYoung, 1997). Considering the above discussion, the following hypothesis is formulated:
H1. There is a positive influence of bank efficiency on the risk of sharia banking financing.

Relationship Between Financing to Deposit Ratio (FDR) and NPF

A high FDR can indicate a significant contribution to the NPF level of Islamic banking as a result of an increase in bad financing (Poetry & Sanrego, 2011). Fund distribution by banks carries high risks related to loan quality, especially if it is not supported by good prudence and supervision. Banks need to carry out effective risk management and monitor financing portfolios carefully to avoid the potential for problematic financing. Success in managing financing risks also helps banks maintain their reputation and gain the trust of customers and regulators (Muhammad et al., 2020). Previous research shows that FDR has a positive effect on NPF, both in the short and long term (Supriani & Sudarsono, 2018; Suryanto, 2015). Therefore, the hypothesis for this variable is:
H2. FDR has a positive impact on the risk of sharia banking financing

The Relationship Between Bank Profitability and NPF

According to Louzis et al. (2012) Banks with high loan losses tend to experience low profits, which can be caused by poor management skills and inefficient lending strategies. Banks that succeed in achieving higher profits generally tend to show a tendency not to take high risks in providing loans to their customers (Makri et al., 2014; Ghosh, 2015). Low bank profitability indicates weak bank management as well as in the distribution of financing. Failure to selectively allocate financing increases the likelihood of borrower default, which increases default rates (Berger & DeYoung, 1997). Previous researchers have proven a correlation between bank profitability and NPF (García-Marco & Robles-Fernández, 2008; Rajan, 1994; Ghosh, 2017; Azeez & Ekanayake, 2015). From the review of this study, the researcher proposed a hypothesis:
H3. Bank profitability has a negative effect on the risk of sharia banking financing.

Relationship Between Capital Adequacy Ratio and NPF

The capital adequacy ratio (CAR) has a role in anticipating potential losses that may be experienced by banks. The higher the CAR, the greater the bank's ability to reduce risks related to financing. In other words, banks have the ability to overcome financing risks by using reserve funds that have been obtained (Yulianti et al., 2018; Naili & Lahrichi, 2022). According to Shrieves & Dahl (1992) banks that hold large capital as part of their risk-weighted assets experience lower loan losses. This is because banks that have high capital adequacy are wiser in providing loans to maintain their capital. Based on previous research, it proves the logical statement above (Hassan et al., 2016; Kamran et al., 2019; Shrieves & Dahl, 1992). From the review of this study, the researcher proposed a hypothesis:
H4. The capital adequacy ratio (CAR) has a negative impact on the risk of sharia banking financing.

Relationship between bank size and NPF

The larger a bank, the lower the possibility of experiencing loan losses (Alhassan et al., 2014; Vouldis & Louzis, 2018; Salas & Saurina, 2002; Solttila & Vihriâlâ, 1994). Salas & Saurina (2002) explain that the larger the bank, the better it will be able to filter the right loans with sophisticated risk management techniques. In the same context, the larger the bank, the lower the risk because large banks will apply adequate resources to assessment and analysis to prevent them from providing loans to low-quality borrowers (Vouldis & Louzis, 2018). This is supported by previous research regarding the relationship between bank size and NPF (Alhassan et al., 2014; Salas & Saurina, 2002; Ranjan & Dhal, 2003). Based on existing evidence, the author formulates the following hypothesis:

H5. Bank size has a negative effect on the risk of sharia banking financing

The Relationship Between Financing Growth and NPF

Faster loan growth leads to higher loan losses (Keeton & Morris, 1987). To achieve loan growth targets, banks are likely to relax their financing standards. In this process, banks will provide loans to borrowers with a higher risk profile or do not thoroughly check the borrower's ability to repay. As a result, this may lead to an increased risk of default and an increase in NPF levels in the future (Foos et al., 2010). Financing growth has a significant impact on bank NPF (Keeton & Morris, 1987). Several analysts have conducted empirical studies regarding the effect of financing growth on NPF (Salas & Saurina, 2002; Latif Alhassan et al., 2014; Alihodžić & Ekşİ, 2018; Boudriga et al., 2010). Based on the above study, the following hypothesis is formulated:

H6. Financing growth has a positive effect on sharia banking financing risk.

Bank Diversification Relationship with NPF

Revenue diversification banks can facilitate risk absorption (Abuzayed et al., 2018; Meslier et al., 2014), by increasing efficiency, reducing total volatility (Wu et al., 2020; Sanya & Wolfe, 2011), increasing capital savings (Shim, 2013), diversification can also improve the quality of bank earnings (Abuzayed et al., 2018), and increase bank profits (Meslier et al., 2014; Sanya & Wolfe, 2011), which can lead to more bank liquidity creation (Hou et al., 2018), assuming bank profits are provided by providing a stronger financial foundation to meet lending companies' demand for investment funds (Lin et al., 2022). so that when banks have income coming from multiple sources, they are less dependent on one single source of income. This means that if one source of income experiences difficulties or faces risk, the bank still has income from other sources that can balance and absorb the negative impact (Abuzayed et al., 2018; Meslier et al., 2014). Several researchers have explored the link between diversification and bank risk (Sanya & Wolfe, 2011; Abuzayed et al., 2018; Abuzayed et al., 2018; Meslier et al., 2014). In line with the argument above, the following hypothesis is set:

H7. Bank diversification has a negative impact on the risk of sharia banking financing

The Relationship Between Bank Competition and NPF

Tougher competition can contribute to lower financing risks and greater financial stability, competition can encourage banks to be more careful in providing loans and managing their risks because they have to compete with other banks (Martín-Oliver et al., 2020; Ozili, 2019). low-quality borrowers cannot access credit easily, thereby reducing the likelihood of default (Boudriga et al., 2009). Other researchers confirmed these findings (Wang, 2018; Turk Ariss, 2010; De Haan & Poghosyan, 2012; Caminal & Matutes, 2002). Therefore, this research originates from the following hypothesis:

H8. Bank competition has a negative effect on the risk of sharia banking financing.

The relationship between inflation and NPF

Higher inflation rates on the one hand erode consumers' purchasing power, limiting the amount of goods and services they consume. This impacts loan customers who cannot easily return their items to generate sufficient returns to repay the loan (Amuakwa-Mensah et al., 2017). In emerging markets, inflation is a major concern for central banks because wages are often low, which increases levels of bad debt and makes it difficult for businesses and households to repay (Naili & Lahrichi, 2022). According to Rinaldi & Sanchis-arellano (2006) that higher inflation worsens bank credit risk, high inflation rates erode the real value of borrowers' income, which limits their ability to repay. Previous research shows similar results that under inflationary conditions, the probability of default increases (Amuakwa-Mensah et al., 2017; Klein, 2013; Alhassan, et al., 2014). Based on the discussion above, the hypothesis proposed by the author is:

H9. Inflation has a positive impact on the risk of Islamic banking loans.

Based on the theoretical framework above, the research model can be described as shown in Figure 1 below:

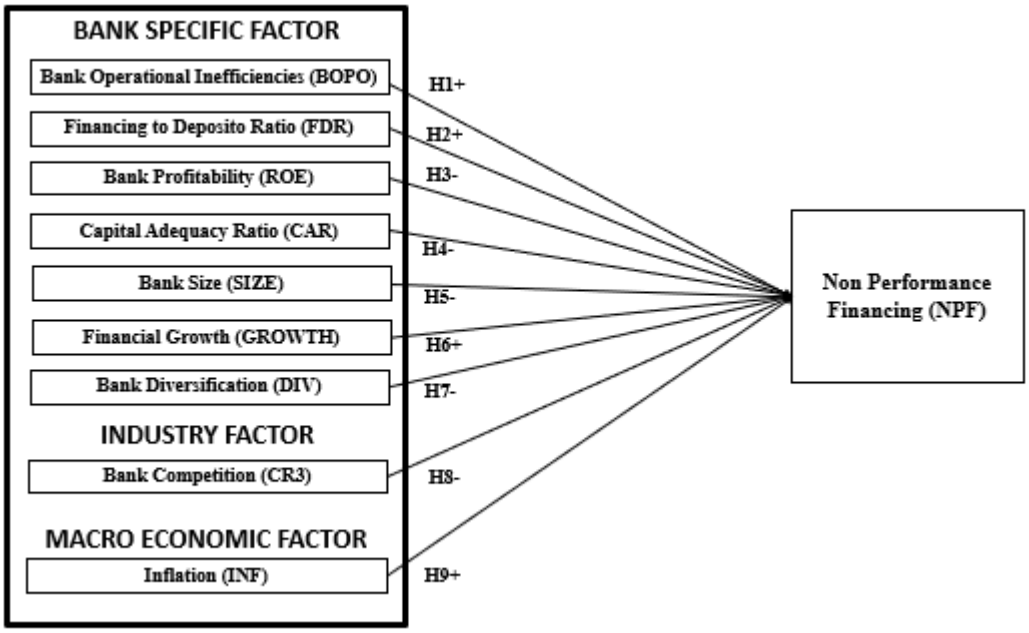

Figure 1. Research Model

3. RESEARCH METHOD

Research can be classified based on the relationship that exists between the variables studied, and is causal in nature where there is a cause and effect relationship between the phenomena as well as describing or depicting a phenomenon. Describe the variables and test the causal relationship between the variables of bank operational inefficiency, financing to deposit ratio, bank profitability, capital adequacy ratio, bank size, financing growth, bank diversification, bank competition, and inflation against NPF.

The type of data used in research is quantitative data. In this research, the data used is panel data, namely a special data collection that combines cross sectional data and time series data. To obtain data and information based on this research, researchers used secondary data, namely data and information obtained from second parties or obtained from company financial reports published on the respective bank websites and Bank Indonesia for the 2013-2022 period.

The population of this research is Sharia Commercial Banks listed on the Indonesia Stock Exchange at the end of 2022, namely 13 banks. The sample used in this research was selected using a purposive sampling method from banks with annual reports that were regularly reported on the Jakarta Stock Exchange from 2013 to 2022.

This research uses a data analysis method by applying panel data regression techniques via Eviews 12 software. Widarjono (2009) explains several regression model estimation methods in panel data analysis, such as the Common Effect Model (CEM), Fixed Effect Model (FEM), and Random Effect Model (REM). The process of selecting the best model is carried out through the Chow test to choose between the Common Effect Model and the Fixed Effect Model, as well as the Hausman test to choose the optimal model between the Fixed Effect Model and the Random Effect Model in estimator panel data regression. Model testing involves applying classical assumption tests, including multicollinearity tests, autocorrelation tests, and heteroscedasticity tests. Analysis of the influence of the independent variable on the dependent variable, as well as determining the weight of the independent variable in explaining changes in the dependent variable, is measured through t-statistics, F-statistics and coefficient of determination (Mudjarad & Suhardjono, 2002).

Tabel 1. Summary of Operational Variables

Variabel penelitian	Simbol	Rumus	Sumber
Variabel Dependen			
Non Performing Financing	NPF	$\frac{Ratio\ of\ non-performing\ financing}{Total\ financing}$	(Ghosh, 2017; Louzis et al., 2012; Salas & Saurina, 2002; Shehzad et al., 2010; Zhang et al., 2016)
Variabel Independen			
Faktor Spesifik bank			
Bank Operational Inefficiencies	BOPO	$\frac{Operating\ expenses}{Operating\ income}$	(Espinoza & Prasad, 2010; Koju et al., 2018; Louzis et al., 2012; Shehzad et al., 2010)
Financing to Deposit Ratio	FDR	$\frac{Total\ Funding\ Provided}{Third-party\ funds}$	(Muhammad et al., 2020)
Bank Profitability	ROE	$\frac{Net\ income}{Total\ Equity}$	(Louzis et al., 2012; Makri et al., 2014; Jabbouri & Almustafa, 2021)
Capital Adequacy Ratio	CAR	$\frac{Tier\ 1\ capital + Tier\ 2\ capital}{Risk\ Weighted\ assets}$	(Ghosh, 2017; Rime, 2001; Shrieves & Dahl, 1992)

Bank Size	SIZE	$Ln\ (Total\ aset)$	(Albaity et al., 2019; Zhang et al., 2016)
Financing Growth	GROWTH	$\frac{financing\ t - financing\ t-1}{financing\ t-1}$	(Peric & Konjusak, 2017; Salas & Saurina, 2002)
Bank Diversification	DIV	$\frac{income\ other\ than\ financing}{Total\ income}$	(Ghosh, 2017; Koju et al., 2018; Louzis et al., 2012; Stiroh, 2004)
Faktor Industri			
Bank Competition	CR3	$\frac{the\ share\ of\ the\ three\ largest\ banks'}{Ttotal\ assets\ of\ all\ banks\ in\ the\ industry}$	(Boudriga et al., 2009; Hendra & Hartomo, 2017; Natsir et al., 2019)
Faktor Makroekonomi			
Inflation	INF	$Annual\ average\ inflation\ rate$	(Ghosh, 2017; Nkusu, 2011; Peric & Konjusak, 2017)

4. RESULTS AND DISCUSSION

Statistics Description of Research Variables

This research used a total of 100 samples covering 10 Sharia Commercial Banks in Indonesia. These banks include Bank Aceh Syariah, BPD West Nusa Tenggara Syariah, Bank Muamalat Indonesia, Bank Victoria Syariah, Bank Jabar Banten Syariah, Bank Mega Syariah, Bank Panin Dubai Syariah, Tbk, Bank Syariah Bukopin, BCA Syariah, Bank Pension Savings National Sharia. The data used in this research is annual data for 10 years from 2013-2022. The following summary statistical description is presented in the table below:

Table 2. Descriptive Statistics

	NPF	BOPO	FDR	ROE	CAR	SIZE	GROWTH	DIV	CR3	INF
Mean	3.398100	92.39450	89.90060	5.512600	25.63000	29.80960	22.92820	11.30540	0.310000	4.162000
Median	2.705000	91.18000	90.92000	4.090000	22.09000	29.69500	9.035000	8.695000	0.305000	3.240000
Maximum	22.04000	217.4000	196.7300	36.50000	149.6800	31.76000	1263.800	100.0000	0.420000	8.380000
Minimum	0.100000	58.07000	38.33000	-94.01000	11.10000	26.43000	-37.97000	0.220000	0.210000	1.680000
Std. Dev.	3.371758	24.30292	19.29208	17.74385	16.83430	0.978929	126.8903	12.64637	0.073306	2.336171
Skewness	2.860284	2.808405	1.911250	-2.402512	4.675957	-0.148960	9.489637	3.940724	0.222662	0.937959
Kurtosis	14.13736	13.88867	13.10158	13.58862	32.26218	3.799266	93.31263	25.99768	1.621488	2.409953
Jarque-Bera	653.1899	625.4650	486.0562	563.3628	3932.223	3.031596	35485.77	2462.544	8.744205	16.11342
Probability	0.000000	0.000000	0.000000	0.000000	0.000000	0.219633	0.000000	0.000000	0.012625	0.000317
Sum	339.8100	9239.450	8990.060	551.2600	2563.000	2980.960	2292.820	1130.540	31.00000	416.2000
Sum Sq. Dev.	1125.507	58472.55	36846.27	31169.57	28055.96	94.87198	1594013.	15833.14	0.532000	540.3116
Observations	100	100	100	100	100	100	100	100	100	100

Source: Data Processing Results with statistical applications.

Based on the descriptive statistical table, it shows that the number of observations (N) from this research is 100 which were obtained from 10 banks and 10 periods. The Non-Performing Financing (NPF) variable is 3,398, with a standard deviation of 3,371, indicating that the level of financing risk is still categorized as healthy because it is below the standard

NPF value of 5%. Meanwhile, the Bank Operational Inefficiency (BOPO) variable has a mean of around 92,394 with a standard deviation of 24,302, showing good results because it is less than the Bank Indonesia determination with a maximum BOPO value of 94%. The Financing to Deposit Ratio (FDR) has a mean of 89,900 and a high standard deviation of 19,292, reflecting good results because it is in accordance with the standards set by Bank Indonesia, namely 80 – 100%. The profitability variable (ROE) has a mean of around 5,512 each with a standard deviation of 17,743, which means that the bank produces an average profit of 5,512% from equity and the Capital Adequacy Ratio (CAR) variable has a mean of 25,630, with a standard deviation of 16,834 which reflects that the capital buffer risk is at a very good level exceeding the value set by Bank Indonesia at 8%. The bank size variable (SIZE) shows an average of 29,809 with a standard deviation of 0.978, indicating that the bank has a fairly stable size. The financing growth variable (GROWTH) has a mean of 22,928 and a high standard deviation of 126,890, this shows that the growth in the distribution of financing funds increased by 22,928 in a 10 year period. Furthermore, the Diversification variable (DIV) has an average value of 11,305 with a standard deviation of 12,646. The Bank Competition variable (CR3) has an average of 0.310 with a standard deviation of 0.073. and the Inflation variable (INF) has an average value of 4,162 with a standard deviation of 2,336.

Based on the table, the Chow test results illustrate the prob value. from Cross-section Chi-square 0.0000 < 0.05 then the Fixed Effect Model (FEM) was chosen. Meanwhile, the Hausman test results table describes the prob value. 0.9682 > 0.05 then the Random Effect Model (REM) was chosen. And based on the Lagrange multiplier test results table, the prob value is obtained. 0.0000 < 0.05 then the Random Effect Model (REM) was chosen.

Classic assumption test

Multicollinearity Test

The results of the multicollinearity test aim to find out whether there is a significant relationship between variable X or not. If multicollinearity occurs, it is not appropriate to use it to determine the contribution of variable X as a whole. According to Widarjono (2015), when testing the multicollinearity regression model, there is a sign of multicollinearity if the correlation coefficient value between independent variables exceeds 0.85. However, based on the results of the multicollinearity test table. It can be concluded that the correlation value between independent variables does not exceed 0.85. Therefore, it can be concluded that the regression model used in this study does not show signs of multicollinearity.

Heteroscedasticity Test

The results of the heteroscedasticity test aim to determine whether there is heteroscedasticity of the residual variance between observations in the regression model. In this research, the Glejser test through statistical applications is used to determine whether there are signs of heteroscedasticity in the regression model. In heteroscedasticity testing, if the significance value is > 0.05, it can be concluded that there is no heteroscedasticity problem. Based on the table of heteroscedasticity test results, it can be concluded that in the regression between the independent variable X and the dependent variable Y, the phenomenon of heteroscedasticity does not occur. This can be seen in the prob value. All independent variables X > 0.05.

Autocorrelation Test

One of the most popular formal tests for detecting autocorrelation is the Durbin-Watson (DW) test. This test is actually based on a correlated error model as shown below:

Noted that:

n = 100

k = 10

dU = 1.8982

4-dU = 2.1018
1.8982 > 1.9049 < 2.1018

The test results can be said that this model does not show signs of autocorrelation, DW 1.9049 is in the area of no autocorrelation or is between dU and 4-dU so this model does not have autocorrelation.

Hypothesis testing

From the results of the three experiments carried out, it can be concluded that the optimal panel data regression model in this research is the random effect model. The following are the results of the random effect model regression:

Table 3. Random Effect Model (REM) Regression Results

Dependent Variable: NPF
Method: Panel EGLS (Cross-section random effects)
Date: 01/17/24 Time: 11:16
Sample: 2013 2022
Periods included: 10
Cross-sections included: 10
Total panel (balanced) observations: 100
Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-14.93610	19.84405	-0.752674	0.4536
BOPO	-0.068498	0.016154	-4.240315	0.0001
FDR	0.030668	0.011387	2.693275	0.0084
ROE	-0.218874	0.023300	-9.393568	0.0000
CAR	-0.028485	0.014230	-2.001754	0.0483
SIZE	0.745605	0.623281	1.196259	0.2347
GROWTH	-0.001139	0.001515	-0.751669	0.4542
DIV	0.014522	0.023787	0.610519	0.5431
CR3	6.724894	4.219639	1.593713	0.1145
INF	-0.145677	0.101256	-1.438699	0.1537

Effects Specification	S.D.	Rho
Cross-section random	2.492599	0.6872
Idiosyncratic random	1.681757	0.3128

Weighted Statistics			
R-squared	0.650493	Mean dependent var	0.709056
Adjusted R-squared	0.615542	S.D. dependent var	2.649768
S.E. of regression	1.642980	Sum squared resid	242.9445
F-statistic	18.61171	Durbin-Watson stat	1.904926
Prob(F-statistic)	0.000000		

Source: Data Processing Results with statistical applications.

Operational inefficiency (BOPO) of Islamic commercial banks in Indonesia has a negative impact on the level of non-performing financing (NPF). This explains that the less efficient a bank is, the more it will contribute to a decrease in the NPF level, because Islamic banking policies tend to strengthen the reserve to capital ratio. Islamic banks often apply high precautionary principles in financing risk management, including procuring larger reserves to anticipate potential future losses (Khudori, 2018). This can cause BOPO to remain high because operational costs related to risk management and reserves are a significant factor. Although a high BOPO can reflect the bank's efforts to minimize financing risk, at the same time, it can also result in high operational expenses. Therefore, even if BOPO increases, a strong risk management policy can result in a decrease in NPF which can be considered a positive consequence of the strategy.

The positive impact of Financing to Deposit Ratio (FDR) on non-performing financing (NPF) in Indonesia can be seen in Islamic commercial banks. The average FDR value for sharia commercial banks from 2013 to 2022 is 89.9%. This shows that banks tend to use more third party capital to finance their customers. Although the strong financial distribution growth achieved by Islamic commercial banks indicates an aggressive income growth strategy, this can

also pose significant financial risks. By using mostly funds from third parties to provide financing, banks can become more vulnerable to risk. Therefore, effective financing risk management and wise financing policies need to be implemented to mitigate potential risks that could cause an increase in NPF along with the growth of Islamic bank financing (Muhammad et al., 2020).

Bank Profitability (ROE) has a negative effect on Non Performing Financing (NPF). These results show that Islamic banks have succeeded in achieving profits by not taking high risks in providing loans to their customers (Makri et al., 2014; Ghosh, 2015). Therefore, Islamic banks need to pay attention to increasing ROE as a strategy to reduce NPF levels and maintain their financial health. The financial success of these banks can be attributed to the implementation of effective financing management practices, which include careful and selective evaluation of financing risks.

Capital Adequacy Ratio (CAR) has a negative effect on Non-Performing Financing (NPF), as reflected in the average CAR value of Islamic commercial banks in Indonesia in the 2013-2022 period which reached 25.6%. This figure indicates the bank's capital ability to cover potential losses, especially in the context of financing risk. The high CAR reflects the existence of quite large capital reserves, enabling sharia commercial banks to more effectively overcome financing risks. Thus, the higher the CAR, the stronger the bank's ability to face potential NPF, because there are sufficient capital reserves to overcome financing risks that may arise (Yulianti et al., 2018; Naili & Lahrichi, 2022).

Bank size does not significantly influence the level of Non-Performing Financing (NPF), and this is due to the adoption of prudent financing policies. Even though larger banks have large assets, financing policies that focus on careful risk analysis can be a key factor in maintaining the quality of the financing portfolio. Banks that are careful in assessing and mitigating financing risks are less likely to encounter NPF problems, regardless of their size. Therefore, the effectiveness of financing policies in preventing the distribution of funds to high-risk parties can be the main explanation for why bank size does not have a significant effect on NPF (Kadir, 2019).

Financing growth has no effect on non-performing financing (NPF). Basically, Islamic banks have their own characteristics in risk management because they must follow the principles of sharia law. The implementation of risk management in Islamic banks cannot be separated from prudence which in turn makes it easier to identify, study, manage and overcome and measure it. risks faced by Islamic banks. easier and inseparable from sharia principles (Akbar. C et al., 2022). Therefore, applying sharia principles to sharia banks at an early age will not affect the NPF mechanism of sharia banks.

Bank diversification has no effect on Non-Performing Financing (NPF). Even though Islamic banks in Indonesia are trying to diversify their income with the aim of increasing performance and stability, in practice this diversification strategy does not have a significant effect on the NPF level (Masruroh, 2018). Diversification does not always guarantee that bank operations will be better and safer, especially when the average income diversification of sharia commercial banks in Indonesia is relatively low, only around 11%. Although a variety of products and services were introduced, the limited proportion of such diversification may indicate that the efforts have not achieved a significant level in reducing potential NPF risks.

Competition between banks does not have a significant relationship to non-performing financing (NPF). In competing for customers, Islamic banks tend to prioritize product innovation, compliance with sharia rules (Sharia Compliance), and a track record of financial stability. The proposed model is expected to encourage the expansion of the sharia banking market at the national level by providing more products that are closer to and accepted by the general public (Apriyanti, 2018). Therefore, the focus of competition is more focused on

innovative aspects and sharia compliance, which indirectly impact risk management and financing quality.

Inflation does not have a significant relationship with the NPF of sharia commercial banks in Indonesia, although inflation does not have a direct relationship with Non-Performing Financing (NPF) of sharia banks in Indonesia, but the role of inflation in eroding people's purchasing power can have an impact on company performance, including sharia banks. Inflation can cause a decrease in people's purchasing power because the prices of goods and services increase, which in turn can result in a decrease in people's income (Amuakwa-Mensah et al., 2017). Even though purchasing power has decreased, companies are still faced with financing obligations that must be met. In the context of Islamic banks, even though people have difficulty getting profits due to reduced purchasing power, bank financing is still based on the principle of profit, which can create challenges in getting optimal results.

5. CONCLUSION

Some of the hypotheses built in this research were successfully proven, the variables bank size (SIZE), financing growth, bank diversification, bank competition, inflation, and bank operational inefficiency (BOPO) were not successfully proven while the variables FDR, bank profitability (ROE), and CAR successfully proven. And the variables bank size (SIZE), financing growth, bank diversification, bank competition, and inflation, have an insignificant influence on NPF, while bank operational inefficiency (BOPO), FDR, Profitability (ROE), and CAR are factors that determine NPF. More precisely, it appears that the systematic determinants, namely bank-specific factors, are greater than macroeconomic factors and industry factors even though only 4 variables have a relationship to NPF. This means that in terms of exposure to financing risk, banks depending on the bank's specific context through effective management of bank-specific factors.

This study still has several limitations or limitations that need to be corrected. First, this research evaluates bank risk by using non-performing financing as an indicator. By using non-performing financing as a benchmark for bank risk, this research focuses more on financing risk, even though banks face various other risks besides financing risk. Additional risks to consider involve liquidity, solvency, interest rate, market, currency, technology and operational risks. Second, this research utilizes annual data, so variations in banking activities that influence bank risk and efficiency in quarters are not included in the scope of this research. Therefore, this research is unable to capture significant events that occur in quarterly intervals that can impact bank efficiency and risk.

Based on the conclusions and limitations above, the researcher provides the following suggestions. First, in the context of banking risk, it is recommended for future researchers to use more holistic risk variables by integrating various variables such as liquidity risk, solvency risk, interest rate risk, market risk, currency risk, technology risk and operational risk. Second, future studies can utilize data that covers quarterly intervals that are not covered in this research, so as to be able to detect important events that occur in each period and have an impact on bank efficiency and risk.

The findings of this research have important implications for regulators and policy makers in the Islamic banking sector in Indonesia. The research provides new evidence regarding the determinants of bank financing risk, which can empower regulators with a more comprehensive understanding of financing risk in Indonesia. Identification of these factors allows regulators to make appropriate interventions, design appropriate financing policies, and adopt prudential regulations tailored to the unique characteristics of Islamic banking. Apart from that, this research encourages Islamic banks to innovate and maximize the development of financing products. Although bank inefficiencies have a negative impact on financing risk,

research shows that Islamic banks tend to strengthen the ratio of reserves to financing as a risk mitigation strategy. The high operating expenses to operating income (BOPO) is a critical note, indicating the need for operational efficiency to reduce financing risk. In contrast, FDR is positively related to financing risk highlighting the importance of selective and careful management of financing growth. Bank profitability, although it has a negative effect on financing risk, shows that Islamic banks can achieve profits without taking high risks in providing financing, by implementing effective and selective financing management practices in evaluating financing risks and with a high CAR not only having resistance to financing risks, but also have a strong foundation to overcome various operational challenges that may arise. Therefore, Islamic banks can maintain their financial stability and health by strengthening risk management and building a good reputation in the market.

REFERENCES

Abuzayed, B., Al-Fayoumi, N., & Molyneux, P. (2018). Diversification and bank stability in the GCC. Journal of International Financial Markets, Institutions and Money, 57, 17–43. https://doi.org/10.1016/j.intfin.2018.04.005

Aji, A. M., & Mukri, S. G. (2020). Strategi Moneter Berbasis Ekonomi Syariah. Deepublish. https://www.google.co.id/books/edition/Strategi_Moneter_Berbasis_Ekonomi_Syaria/73zlDwAAQBAJ?hl=id&gbpv=0

Akbar. C, Eril, Abdullah, M. W., & Awaluddin, M. (2022). Manajemen Risiko Di Perbankan Syariah. Milkiyah: Jurnal Hukum Ekonomi Syariah, 1(2), 51–56. https://doi.org/10.46870/milkiyah.v1i2.230

Albaity, M., Mallek, R. S., & Noman, A. H. M. (2019). Competition and bank stability in the MENA region: The moderating effect of Islamic versus conventional banks. Emerging Markets Review, 38(January), 310–325. https://doi.org/10.1016/j.ememar.2019.01.003

Alhassan, A. L., Kyereboah-coleman, A., & Andoh, C. (2014). Asset quality in a crisis period : An empirical examination of Ghanaian banks. Journal of Advanced Research, 1–13. https://doi.org/10.1016/j.rdf.2014.03.001

Alhassan, A. L., Kyereboah-Coleman, A., & Andoh, C. (2014). Asset quality in a crisis period: An empirical examination of Ghanaian banks. Review of Development Finance, 4(1), 50–62. https://doi.org/10.1016/j.rdf.2014.03.001

Alihodžić, A., & Ekşİ, İ. H. (2018). Credit growth and non-performing loans : evidence from Turkey and some Balkan countries. Journal of European Studies, 9(2), 229–249.

Amuakwa-Mensah, F., Marbuah, G., & Ani-Asamoah Marbuah, D. (2017). Re-examining the Determinants of Non-Performing Loans in Ghana's Banking Industry: Role of the 2007–2009 Financial Crisis. Journal of African Business, 18(3), 357–379. https://doi.org/10.1080/15228916.2017.1308199

Andreani, C. B., & Erick, B. (2016). Analisis Faktor-Faktor yang Mempengaruhi Non Performing Loan pada Bank Umum di Indonesia. Jurnal Wira Ekonomi Mikroskil, 6(2), 113–122. https://www.mikroskil.ac.id/ejurnal/index.php/jwem/article/view/325

Andrianto, Fatihudin, D., & Frimansyah, M. A. (2019). Manajemen Bank. http/:www.qiaramediapartner.blogspot.com

Anita, S. S., Tasnova, N., & Nawar, N. (2022). Are non-performing loans sensitive to macroeconomic determinants? an empirical evidence from banking sector of SAARC countries. Future Business Journal, 8(1). https://doi.org/10.1186/s43093-022-00117-9

Apriyanti, H. W. (2018). Model Inovasi Produk Perbankan Syariah di Indonesia. Economica: Jurnal Ekonomi Islam, 9(1), 83–104. https://doi.org/10.21580/economica.2018.9.1.2053

Ayadi, R., Naceur, S. Ben, Casu, B., & Quinn, B. (2015). Does Basel Compliance Matter for Bank Performance ?

Azeez, & Ekanayake. (2015). Determinants Non-Performing Loans Commercial Banks : Evidence From Sri Lanka. Journal of Asian Economic and FinancialReview, 5(6), 868–882. https://doi.org/10.18488/journal.aefr/2015.5.6/102.6.868.882

Bank Indonesia. (2021). Peraturan Bank Indonesia Nomor 23/2/PBI/2021. Www.Ojk.Go.Id, 53(9), 1689–1699. https://www.ojk.go.id/Files/regulasi/perbankan/pbi/2009/penjelasan_pbi113309.pdf

Berger, A. N., & DeYoung, R. (1997). Problem Loans and Cost Efficiency in Commercial Banks. Finance and Economics Discussion Series, 1997(08), 1–29. https://doi.org/10.17016/feds.1997.08

Boudriga, A., Boulila Taktak, N., & Jellouli, S. (2009). Banking supervision and nonperforming loans: a cross-country analysis. In Journal of Financial Economic Policy (Vol. 1, Issue 4). https://doi.org/10.1108/17576380911050043

Boudriga, A., Taktak, N. B., & Jellouli, S. (2010). Bank specific, business and institutional environment determinants of banks nonperforming loans: Evidence from MENA countries. Operations Research Forum, 53(September), 2662–2556.

Boyd, J. H., & Graham, S. L. (1986). Risk, Regulation, and Bank Holding Company Expansion Into Nonbanking. Quarterly Review, 10(2). https://doi.org/10.21034/qr.1021

Brei, M., Jacolin, L., & Noah, A. (2020). Credit risk and bank competition in Sub-Saharan Africa. Emerging Markets Review, 44(October 2018), 100716. https://doi.org/10.1016/j.ememar.2020.100716

Caminal, R., & Matutes, C. (2002). Market power and banking failures. International Journal of Industrial Organization, 20(9), 1341–1361. https://doi.org/10.1016/s0167-7187(01)00092-3

Ciałowicz, B. (2014). The phenomenon of equifinality in innovative development of the monetary private ownership economy -An axiomatic set-up. Economic Modelling, 38, 1–5. https://doi.org/10.1016/j.econmod.2013.11.026

De Haan, J., & Poghosyan, T. (2012). Bank size, market concentration, and bank earnings volatility in the US. Journal of International Financial Markets, Institutions and Money,

22(1), 35–54. https://doi.org/10.1016/j.intfin.2011.07.002

Dilipkumar, P. (2015). Financial Analysis of Cooperative (First Edition (ed.)). EduPedia Publications.

Espinoza, R., & Prasad, A. (2010). Nonperforming Loans in the GCC Banking System and their Macroeconomic Effects. In IMF Working Papers (Vol. 10, Issue 224). https://doi.org/10.5089/9781455208890.001

Ferrouhi, E. M. (2018). Determinants of banks' profitability and performance: an overview. Munich Personal RePEc Archive (MPRA), 89470, 1–15. https://mpra.ub.uni-muenchen.de/id/eprint/89470

Foos, D., Norden, L., & Weber, M. (2010). Loan growth and riskiness of banks. Journal of Banking and Finance, 34(12), 2929–2940. https://doi.org/10.1016/j.jbankfin.2010.06.007

Gantino dan Susanti. (2019). Perbandingan Pengaruh Profitabilitas , Leverage , dan Ukuran Perusahaan Terhadap Audit Report Lag Pada Perusahaan Food and Beverage & Property and Real Estate Yang Terdaftar Di Bursa Efek Indonesia (BEI) Periode 2013-2017 Laporan keuangan merupakan sala. Jurnal Riset Akuntansi Dan Keuangan, 7(3), 601–618.

García-Marco, T., & Robles-Fernández, M. D. (2008). Risk-taking behaviour and ownership in the banking industry: The Spanish evidence. Journal of Economics and Business, 60(4), 332–354. https://doi.org/10.1016/j.jeconbus.2007.04.008

Ghosh, A. (2015). Banking-industry specific and regional economic determinants of non-performing loans: Evidence from US states. Journal of Financial Stability, 20, 93–104. https://doi.org/10.1016/j.jfs.2015.08.004

Ghosh, A. (2017). Sector-specific analysis of non-performing loans in the US banking system and their macroeconomic impact. Journal of Economics and Business, 93, 29–45. https://doi.org/10.1016/j.jeconbus.2017.06.002

Haq, M., & Heaney, R. (2012). Factors determining European bank risk. Journal of International Financial Markets, Institutions and Money, 22(4), 696–718. https://doi.org/10.1016/j.intfin.2012.04.003

Hassan, M. K., Unsal, O., & Tamer, H. E. (2016). Risk Management and Capital Adequacy in Turkish Participation and Conventional Banks: A Comparative Stress Testing Analysis. Borsa Istambul Review, 16(2), 72–81. https://doi.org/10.1016/j.bir.2016.04.001

Havidz, S. A. H., & Setiawan, C. (2015). Bank Efficiency And Non-Performing Financing (NPF) In The Indonesian Islamic Banks. Asian Journal of Economic Modelling, 3(3), 61–79. https://doi.org/10.18488/journal.8/2015.3.3/8.3.61.79

Hellmann, T. F., Murdock, K. C., & Stiglitz, J. E. (2000). Liberalization, moral hazard in banking, and prudential regulation: Are capital requirements enough? American Economic Review, 90(1), 147–165. https://doi.org/10.1257/aer.90.1.147

Hendra, S. T. N., & Hartomo, D. D. (2017). Pengaruh Konsentrasi Dan Pangsa Pasar Terhadap Pengambilan Resiko Bank. Jurnal Bisnis Dan Manajemen, 17(2), 35–50. https://doi.org/10.20961/jbm.v17i2.17176

Hou, X., Li, S., Li, W., & Wang, Q. (2018). Bank diversification and liquidity creation: Panel Granger-causality evidence from China. Economic Modelling, 71(November), 87–98. https://doi.org/10.1016/j.econmod.2017.12.004

Imam, P., & Kpodar, K. (2016). Islamic banking: Good for growth? Economic Modelling, 59, 387–401. https://doi.org/10.1016/j.econmod.2016.08.004

Jabbouri, I., & Almustafa, H. (2021). Corporate cash holdings, firm performance and national governance: evidence from emerging markets. International Journal of Managerial Finance, 17(5), 783–801. https://doi.org/10.1108/IJMF-07-2020-0342

Kadir, R. D. (2019). Estimasi Jangka Pendek dan Jangka Panjang Risiko Pembiayaan BPR Syariah di Indonesia. NISBAH: Jurnal Perbankan Syariah, 5(2), 100–105. https://doi.org/https://doi.org/10.30997/jn.v5i2.2166

Kamran, H. W., Omran, A., & Arshad, S. B. M. (2019). Risk Management , Capital Adequacy And Audit Quality For Financial Stability : Assessment From Commercial Keyword S. Asian Economic and Financial Review, 9(6), 654–664. https://doi.org/10.18488/journal.aefr.2019.96.654.664

Keeton, W., & Morris, C. (1987). Why do Banks' Loss Differ? In Economic Review (pp. 3–21).

Khan, F. (2010). How "Islamic" is Islamic Banking? Journal of Economic Behavior and Organization, 76(3), 805–820. https://doi.org/10.1016/j.jebo.2010.09.015

Khemraj, T., & Pasha, S. (2009). The determinants of non-performing loans : an econometric case study of Guyana. Munich Personal RePEc Archive, 10(1), 40–48. http://www.ncbi.nlm.nih.gov/pubmed/24827074

Khudori, A. (2018). Analisis Penilaian Tingkat Kesehatan Bank Syariah Berdasarkan Metode Rgec Tahun 2012 - 2016. Jae (Jurnal Akuntansi Dan Ekonomi), 3(1), 12. https://doi.org/10.29407/jae.v3i1.12011

Klein, N. (2013). Non-Performing Loans in CESEE: Determinants and Impact on Macroeconomic Performance. In IMF Working Papers (Vol. 13, Issue 72). https://doi.org/10.5089/9781484318522.001

Koehn, M., & Santomero, A. M. (1980). Regulation of Bank Capital and Portfolio Risk. The Journal of Finance, 35(5), 1235–1244. https://doi.org/10.1111/j.1540-6261.1980.tb02206.x

Koju, L., Koju, R., & Wang, S. (2018). Does banking management affect credit risk? Evidence from the indian banking system. International Journal of Financial Studies, 6(3). https://doi.org/10.3390/ijfs6030067

Leech, D., & Leahy, J. (1991). Ownership Structures, Control and the Performance of Large British Companies. The Economic Journal, 101(409), 1418–1437.

Lin, H. C., Huang, J. C., & You, C. F. (2022). Bank Diversification and Financial Constraints on Firm Investment Decisions in a Bank-Based Financial System. Sustainability (Switzerland), 14(17), 1–20. https://doi.org/10.3390/su141710997

Louzis, D. P., Vouldis, A. T., & Metaxas, V. L. (2012). Macroeconomic and bank-specific determinants of non-performing loans in Greece: A comparative study of mortgage, business and consumer loan portfolios. Journal of Banking and Finance, 36(4), 1012–1027. https://doi.org/10.1016/j.jbankfin.2011.10.012

Makri, V., Tsagkanos, A., & Bellas, A. (2014). Determinants of non-performing loans: The case of Eurozone. Panoeconomicus, 61(2), 193–206. https://doi.org/10.2298/PAN1402193M

Marijana Ćurak, Sandra Pepur, & Klime Poposki. (2013). Determinants of non-performing loans - evidence from Southeastern European banking systems. Banks and Bank Systems, 8(1), 45–53.

Martín-Oliver, A., Ruano, S., & Salas-Fumás, V. (2020). How does bank competition affect credit risk? Evidence from loan-level data. Economics Letters, 196, 109524. https://doi.org/10.1016/j.econlet.2020.109524

Masruroh, M. (2018). Diversifikasi Pembiayaan Sebagai Strategi Manajemen Risiko Kredit Dan Risiko Likuiditas Pada Bank Syariah Di Indonesia. In New England Journal of Medicine (Vol. 372, Issue 2). http://www.ncbi.nlm.nih.gov/pubmed/7556065%0Ahttp://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=PMC394507%0Ahttp://dx.doi.org/10.1016/j.humpath.2017.05.005%0Ahttps://doi.org/10.1007/s00401-018-1825-z%0Ahttp://www.ncbi.nlm.nih.gov/pubmed/27157931

Meslier, C., Tacneng, R., & Tarazi, A. (2014). Is bank income diversification beneficial? Evidence from an emerging economy. Journal of International Financial Markets, Institutions and Money, 31(1), 97–126. https://doi.org/10.1016/j.intfin.2014.03.007

Mudjarad, K., & Suhardjono. (2002). Manajemen Perbankan Teori dan Aplikasi. BPFE.

Muhammad, R., Suluki, A., & Nugraheni, P. (2020). Internal factors and non-performing financing in Indonesian Islamic rural banks. Cogent Business and Management, 7(1). https://doi.org/10.1080/23311975.2020.1823583

Murphy, R. P. (2021). Understanding Money Mechanics. In Mises Institute (Vol. 4, Issue 1).

Naili, M., & Lahrichi, Y. (2020). The determinants of banks' credit risk: Review of the literature and future research agenda. International Journal of Finance and Economics, 27(1), 334–360. https://doi.org/10.1002/ijfe.2156

Naili, M., & Lahrichi, Y. (2022). Banks' credit risk, systematic determinants and specific factors: recent evidence from emerging markets. Heliyon, 8(2), 1–16.

https://doi.org/10.1016/j.heliyon.2022.e08960

Natsir, M., Soedarmono, W., April Yudhi, W. S., Trinugroho, I., & Warokka, A. (2019). Foreign penetration, competition, and credit risk in banking. Borsa Istanbul Review, 19(3), 249–257. https://doi.org/10.1016/j.bir.2019.05.003

Nkusu, M. (2011). Nonperforming Loans and Macrofinancial Vulnerabilities in Advanced Economies. IMF Working Papers, 11(161), 1. https://doi.org/10.5089/9781455297740.001

Ozili, P. K. (2019). Non-performing loans and financial development: new evidence. Journal of Risk Finance, 20(1), 59–81. https://doi.org/10.1108/JRF-07-2017-0112

Peric, B. S., & Konjusak, N. (2017). How did rapid credit growth cause non-performing loans in the CEE Countries? South East European Journal of Economics and Business, 12(2), 73–84. https://doi.org/10.1515/jeb-2017-0019

Podpiera, J., & Weill, L. (2008). Bad luck or bad management? Emerging banking market experience. Journal of Financial Stability, 4(2), 135–148. https://doi.org/10.1016/j.jfs.2008.01.005

Poetry, Z. D., & Sanrego, Y. D. (2011). Pengaruh Variabel Makro Dan Mikro Terhadap NPL. Islamic Finance & Business Review, 6(2), 79–104.

Quoc Trung, N. K. (2021). Determinants of bank performance in Vietnamese commercial banks: an application of the camels model. Cogent Business and Management, 8(1). https://doi.org/10.1080/23311975.2021.1979443

Rajan, R. G. (1994). Why Bank Credit Policies Fluctuate: A Theory and Some Evidence. The Quarterly Journal of Economics, 2(109), 399–441.

Ramdoni, M., & Gantino, D. R. (2019). Analisis Rasio Keuangan Dan Variabel Makro Terhadap Return Saham (Studi Pada Perusahaan Publik Yang Listing Dalam Indeks Lq 45 Periode 2013-2016). JAKK (Jurnal Akuntansi Dan Keuangan Kontemporer), 2(1), 2623–2596.

Ranjan, R., & Dhal, S. C. (2003). Terms of Credit of Public Sector Banks in India : An Empirical Assessment. Reserve Bank of India Occasional Papers, 24(3).

Rime, B. (2001). Capital requirements and bank behaviour: Empirical evidence for Switzerland. Journal of Banking and Finance, 25(4), 789–805. https://doi.org/10.1016/S0378-4266(00)00105-9

Rinaldi, L., & Sanchis-arellano, A. (2006). Household Debt Sustainability What Explains Household Non-Performing Loans? An Empirical Analysis.

Rizvi, S. A. R., Narayan, P. K., Sakti, A., & Syarifuddin, F. (2020). Role of Islamic banks in Indonesian banking industry: an empirical exploration. Pacific Basin Finance Journal, 62(October 2018), 101117. https://doi.org/10.1016/j.pacfin.2019.02.002

Rofik, A., & Syah, T. Y. R. (2020). The effect of fuel mix, moderated by Indonesia crude price

and foreign exchange, and power losses on profitability of PT PLN (PERSERO). International Journal of Energy Economics and Policy, 10(4), 377–383. https://doi.org/10.32479/ijeep.9575

Rossi, S. P. S., Schwaiger, M. S., & Winkler, G. (2009). How loan portfolio diversification affects risk, efficiency and capitalization: A managerial behavior model for Austrian banks. Journal of Banking and Finance, 33(12), 2218–2226. https://doi.org/10.1016/j.jbankfin.2009.05.022

Rusdiana, H. ., & Zaqiyah, Q. Y. (2022). Manajemen Perkantoran Modern. Insan Komunika Jurusan Ilmu Komunikasi UIN SGD Bandung. https://www.google.co.id/books/edition/MANAJEMEN_PERKANTORAN_MODERN/ToBaEAAAQBAJ?hl=id&gbpv=0

Salas, V., & Saurina, J. (2002). Credit risk in two institutional regimes: Spanish commercial and savings banks. Journal of Financial Services Research, 22(3), 203–224. https://doi.org/10.1023/A:1019781109676

Sang, N. M. (2021). Capital adequacy ratio and a bank's financial stability in Vietnam. Banks and Bank Systems, 16(4), 61–71. https://doi.org/10.21511/bbs.16(4).2021.06

Sanya, S., & Wolfe, S. (2011). Can Banks in Emerging Economies Benefit from Revenue Diversification? Journal of Financial Services Research, 40(1), 79–101. https://doi.org/10.1007/s10693-010-0098-z

Scardovi, C. (2016). Holistic active management of non-performing loans. In Holistic Active Management of Non-Performing Loans. Springer. https://doi.org/10.1007/978-3-319-25363-3

Shehzad, C. T., de Haan, J., & Scholtens, B. (2010). The impact of bank ownership concentration on impaired loans and capital adequacy. Journal of Banking and Finance, 34(2), 399–408. https://doi.org/10.1016/j.jbankfin.2009.08.007

Shim, J. (2013). Bank capital buffer and portfolio risk: The influence of business cycle and revenue diversification. Journal of Banking and Finance, 37(3), 761–772. https://doi.org/10.1016/j.jbankfin.2012.10.002

Shrieves, R. E., & Dahl, D. (1992). The relationship between in commercial banks. Journal of Banking and Finance, 16, 439–457.

Slage, R. F. (2021). Quantitative Easing, Bank Size, And Bank Profitability: An Explanatory Study Of U.S. Commercial Banks. Capella University, September.

Solttila, H., & Vihriâlâ, V. (1994). Finnish Banks ' Problem Assets : Result of Unfortunate Asset Structure. In Bank of Finland Discussion Papers.

Stern, G. H., & Feldman, R. J. (2004). Too big to fail: The hazards of bank bailouts. Brookings Institution Press, 1–230. https://doi.org/10.5860/choice.42-1064

Stiroh, K. J. (2004). Diversification in Banking: Is Noninterest Income the Answer? Journal of

Money, Credit, and Banking, 36(5), 853–882. https://doi.org/10.1353/mcb.2004.0076

Supriani, I., & Sudarsono, H. (2018a). Analisis Pengaruh Variabel Mikro Dan Makro Terhadap NPF Perbankan Syariah di Indonesia. EQUILIBRIUM, 6, 1–18.

Supriani, I., & Sudarsono, H. (2018b). Analisis Pengaruh Variabel Mikro Dan Makro Terhadap NPF Perbankan Syariah di Indonesia. Jurnal Ekonomi Syariah, 6(1), 1–18.

Suryanto. (2015). Non Performing Loans on Regional Development Bank in Indonesia and Factors that Influence. Mediterranean Journal of Social Sciences, 6(4), 280–287. https://doi.org/10.5901/mjss.2015.v6n4p280

Trinugroho, I., Risfandy, T., & Ariefiento, M. D. (2018). Borsa _ Istanbul Review Competition , diversification , and bank margins : Evidence from Indonesian Islamic rural banks. Borsa Istanbul Review, 18(4), 349–358. https://doi.org/10.1016/j.bir.2018.07.006

Turk Ariss, R. (2010). On the implications of market power in banking: Evidence from developing countries. Journal of Banking and Finance, 34(4), 765–775. https://doi.org/10.1016/j.jbankfin.2009.09.004

Vouldis, A. T., & Louzis, D. P. (2018). Leading indicators of non-performing loans in Greece: the information content of macro-, micro- and bank-specific variables. Empirical Economics, 54(3), 1187–1214. https://doi.org/10.1007/s00181-017-1247-0

Wang, A. T. (2018). A reexamination on the effect of bank competition on bank non-performing loans. Applied Economics, 50(57), 6165–6173. https://doi.org/10.1080/00036846.2018.1489505

Wasiaturrahma, Ajija, S. R., Sukmana, R., Sari, T. N., & Hudaifah, A. (2020). Breadth and depth outreach of Islamic cooperatives: do size, non-performing finance, and grant matter? Heliyon, 6(7), e04472. https://doi.org/10.1016/j.heliyon.2020.e04472

Widarjono, A. (2009). Ekonometrika Pengantar dan Aplikasinya. Ekonisia.

Wijayanti, E., & Mardiana. (2020). Loan Growth and Bank Profitability of Commercial Banks in Indonesia. Akuntabel, 17(1), 2020–2058. http://journal.feb.unmul.ac.id/index.php/AKUNTABEL

Wiley, J. (2018). Bank Asset and Liability Management. John Wiley & Sons Singapore Pte. Ltd.

Wu, J., Chen, L., Chen, M., & Jeon, B. N. (2020). Diversification, efficiency and risk of banks: Evidence from emerging economies. Emerging Markets Review, 45(July). https://doi.org/10.1016/j.ememar.2020.100720

Yulianti, E., Aliamin, A., & Ibrahim, R. (2018). The Effect of Capital Adequacy and Bank Size on Non-Performing Loans in Indonesian Public Banks. Journal of Accounting Research, Organization and Economics, 1(2), 205–214. https://doi.org/10.24815/jaroe.v1i2.11709

Zhang, D., Cai, J., Dickinson, D. G., & Kutan, A. M. (2016). Non-performing loans, moral hazard and regulation of the Chinese commercial banking system. Journal of Banking

and Finance, 63, 48–60. https://doi.org/10.1016/j.jbankfin.2015.11.010