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*Article*

# The Impact of Financial Risk and Capital Adequacy on the Financial Performance of Commercial Banks in Indonesia

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## ABSTRACT

The aim of this research is to prove empirically the influence of financial risk and capital adequacy on the financial performance of conventional and sharia commercial banks in Indonesia for the 2019-2022 period. Financial risk consists of liquidity risk, credit risk, market risk and operational risk. This research uses quantitative methods, where secondary data is obtained from banking financial reports registered with the Financial Services Authority (OJK) in the 2019-2022 period. The data collection method in this research uses purposive sampling techniques or with certain criteria. This research used the panel data analysis method with a sample size of 103 banks and obtained 412 data. The research data was then processed using EViews version 12. The research results prove that market risk and operational risk influence financial performance. Different results prove that liquidity risk, credit risk and capital adequacy have no effect on financial performance. This research has implications for developing more effective risk management strategies and optimizing financial performance in commercial banking.

***Keywords:*** *Financial Risk, Capital Adequacy, Financial Performance*

**JEL Classification:** G21; G23; G32

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## INTRODUCTION

Banking institutions are pivotal and significant entities in influencing economic stability (Korompis et al., 2020). As intermediary institutions, banks' primary role is to collect and distribute funds to support national development and stimulate economic growth (Pinasti & Mustikawati, 2018). This position necessitates banks to maintain their existence as a healthy industry continuously. A critical aspect for banks in preserving their existence is their financial performance (Agustini et al., 2017). According to Table 1.1, the percentage of Return on Assets (ROA) for banking institutions fluctuated during the 2019-2022 period. Table 1.1 shows a decline in the ROA percentage in 2020. From 2019 to 2020, the ROA percentage decreased by 0.65%, from 2.41% in the previous year to 1.68%. However, the banking sector also experienced an increase in ROA during the 2021-2022 period, with the Financial Services

Authority (OJK) noting a rise of 0.49% during these years.

Table 1
Financial Performance and Banking Risk for the 2019-2022 Period

| | 2019 | 2020 | 2021 | 2022 |
|---|---|---|---|---|
| ROA | 2.414 | 1.76 | 1.688 | 2.174 |
| LDR/FDR | 86.17 | 79.45 | 73.8 | 77.08 |
| NPL/NPF | 4.23 | 5.52 | 5.5 | 4.81 |
| NIM/NOM | 3.41 | 2.95 | 3.14 | 3.31 |
| BOPO | 81.92 | 86.06 | 83.94 | 77.99 |
| CAR | 21.99 | 22.76 | 25.69 | 25.95 |

In addition, to changes in financial performance, the financial risk of banks also fluctuated during the 2019-2022 period. Liquidity risk (LDR/FDR) declined in 2020 and 2021. This was followed by a consecutive decrease in credit risk (NPL/NPF) from 2020 to 2022. Market risk (NIM/NOM) decreased in 2020 but gradually increased in the following year. Operational risk rose in 2020 but decreased in 2021 and 2022. Furthermore, the capital adequacy requirement for commercial banks increased each period. The decline in financial performance in 2020 and 2021 necessitates further research to identify its causative factors. Additionally, banks operate in an environment that is not always stable, and companies are also susceptible to risks. Without proper management, these risks can lead to a company's bankruptcy due to its inability to meet financial obligations (C. R. et al., 2019). Therefore, to manage operational risks, banks must implement risk management systems to prevent instability in targeted revenues and avoid losses that could lead to operational failure (Hunjra et al., 2020).

Liquidity risk is a significant challenge faced by banks (Hermuningsih et al., 2022). It arises when a bank fails to meet its current liabilities upon maturity due to an inability to generate cash flows from liquid or productive assets (Rahma & Nurfauziah, 2022). Banks with high liquidity risk indicate a high level of loan distribution, which in turn improves financial performance, and vice versa. Consequently, banks must control their liquidity risk to maintain long-term viability. Research by Hasmiana et.,al (2022) and Issack (2022) demonstrates that liquidity risk positively impacts financial performance. Credit risk can be the largest failure factor in banking (Bhattacharya et al., 2020). While it contributes significantly to profits, it also poses greater risks compared to other types (Hunjra et al., 2020). Credit risk emerges from the inability of borrowers to repay loans and interest on time (Inegbedion et al., 2020). Studies by Sari et.,al (2022) and Kwashie et al., (2022) indicate that credit risk negatively affects financial performance. Loan distribution is a major source of bank income. Therefore, if borrowers fail to meet their obligations, bank revenue declines, leading to a deterioration in financial performance (Bastomi et al., 2017).

Market risk also affects the financial performance of banks. According to Rahma (2022), market risk arises from sudden and uncontrollable market changes. This risk can be hedged but not entirely diversified (Inegbedion et al., 2020). Interest rate and currency exchange risks are prevalent in the market. An increase in interest rates due to uncontrollable market conditions can decrease a company's stock returns. Pinasti (2018) found that market risk positively impacts financial performance, indicating that high bank interest rates can positively affect the bank. Operational risk results from company operational failures caused by human errors and external issues related to banking activities (Bonsall et al., 2017). It can impact the financial performance of banks. Research by Issack (2022) and Rahma (2022) suggests that operational risk negatively affects financial performance. This implies that a lower BOPO value indicates that a bank can manage its operations effectively and efficiently, thereby mitigating operational risks that could lead to losses.

On the other hand, capital adequacy is another factor influencing financial performance. It is a key internal determinant of banking performance (Jayanti & Sartika, 2021). Capital adequacy refers to a bank's ability to maintain sufficient capital to cover potential losses in its operations (Suroso, 2022). Studies by Nadillah (2021) and Uddin (2022) show that capital adequacy positively affects financial performance. Hence,

higher capital adequacy enhances the stability of a bank's operations, improving financial performance (Ogunode et al., 2022).

Based on the aforementioned discussion, this study will examine the impact of financial risks on the financial performance of conventional and Islamic banks during the 2019-2022 period. The motivation for revisiting this research is twofold: previous studies have combined variables like liquidity risk, credit risk, market risk, operational risk, and capital adequacy to assess financial performance, but inconsistent results were found. Secondly, although there are studies focusing on conventional and Islamic banks, this research incorporates capital adequacy as a variable within this combined scope. The chosen timeframe of 2019-2022 is significant as the COVID-19 pandemic pressured the global economy, including Indonesia. The Central Statistics Agency (BPS) recorded a negative 5.32% economic growth in Indonesia in the second quarter of 2020. Additionally, COVID-19 negatively impacted the banking industry.

## LITERATURE REVIEW

### Signalling Theory

Signalling Theory (1973) explains the relationship involving the sender and receiver, where relevant pieces of information are conveyed in the form of signals. The received information is then interpreted by the recipient according to their understanding of the signal to make decisions. Signalling Theory serves as a cornerstone for understanding financial management (Gumanti, 2009). The signals provided must have signalling content to alter the recipient's assessment (Agustina et al., 2022). This theory conveys information about the company's condition to the users of financial statements. Signalling Theory links financial risk and capital adequacy with financial performance. It posits that companies use certain information as signals to communicate the condition and performance of management to shareholders and the market. Furthermore, financial risk significantly influences stakeholders' perceptions of the company's financial performance and health. Hence, this information (signal) becomes a consideration for investors in making investment decisions in the company (Supriyadi & Setyorini, 2020).

### Financial Performance

Financial performance represents a company's achievement in conducting its operational activities over a specific period (Sari et al., 2022). In the context of banking, financial performance is the effectiveness of a bank in utilizing its assets to generate returns for stakeholders' investments (Onsongo et al., 2020). As intermediary institutions, banks are responsible for performance related to fund collection and distribution (Pinasti & Mustikawati, 2018). Therefore, financial performance is crucial for evaluating the company. It is the utilization of the company's financial data to assess the performance of an organization (Mardiana et al., 2018).

### The Impact of Loan to Deposit Ratio (LDR) / Financing Deposit Ratio (FDR) on Return On Assets (ROA)

Bank Indonesia sets the healthy LDR/FDR threshold at 78.71%–100%. If the LDR/FDR is below this range, credit distribution is less effective, resulting in suboptimal profit generation. A higher LDR/FDR value indicates increased profitability, reflecting the bank's effective credit distribution performance. According to signaling theory, the signals analyzed can be either positive or negative, influencing investors' decision-making. Research by Issack et al. (2022), Hermuningsih et al. (2022), Hasmiana et al. (2022), and Agustina et al.

(2022) reveals that liquidity risk positively affects financial performance.

H1: Loan to Deposit Ratio (LDR) / Financing Deposit Ratio (FDR) Positively Influences Return On Assets (ROA)

### The Impact of Non-Performing Loan (NPL) / Non-Performing Financing (NPF) on Return On Assets (ROA)

Credit risk arises from the inability of borrowers to repay loans and interest on time (Rahma & Nurfauziah, 2022). Bank Indonesia sets the maximum NPL/NPF limit at 5%. According to signaling theory, signals can be positive or negative. If the NPL/NPF ratio is below 5%, the bank manages its credit well, improving financial performance. This positive signal assures stakeholders that the bank effectively manages its funds. However, a high NPL/NPF indicates ineffective credit management and a high number of bad loans, worsening financial performance. High NPL/NPF values result in suboptimal bank profits and poor financial performance (Nadillah & Muniarty, 2021). Studies by Rahma et al. (2022), Sari et al. (2022), Uddin et al. (2022), and Kwashie et al. (2022) indicate that high credit risk deteriorates financial performance.

H2: Non-Performing Loan (NPL) / Non-Performing Financing (NPF) Negatively Influences Return On Assets (ROA)

### The Impact of Net Interest Margin (NIM) / Net Operating Margin (NOM) on Return On Assets (ROA)

Net Interest Margin measures conventional banks, while Net Operating Margin measures Sharia banks. Bank Indonesia sets the minimum NIM/NOM at 6%. According to signaling theory, the signals provided can be positive or negative. High NIM/NOM values increase company revenue, improving financial performance. High margins indicate that the bank's interest income and managed assets are substantial, enhancing financial performance (Olivia et al., 2022). Consequently, investors will trust that the bank manages its assets well. Research by Agustina et al. (2022), Sunaryo (2020), and Korompis et al. (2020) shows that market risk positively and significantly affects financial performance. Agustina et al. (2022) state that high market risk improves financial performance, while low market risk deteriorates it.

H3: Net Interest Margin (NIM) / Net Operating Margin (NOM) Positively Influences Return On Assets (ROA)

### The Impact of Operating Expenses to Operating Income (BOPO) on Return On Assets (ROA)

Operational risk occurs when a company's operating income is lower than its operating expenses. BOPO ratio measures operational risk. Bank Indonesia sets the maximum BOPO percentage at 94%. A BOPO value exceeding this limit indicates inefficiency (Sukma et al., 2019). According to signaling theory, signals provided by management through financial statements can be positive or negative. Exceeding the maximum BOPO percentage lowers financial performance, making investors reconsider their investments. A BOPO percentage below the maximum indicates effective cost management, improving financial performance. Consequently, investors will perceive the company as being in good condition, increasing their confidence to invest. This aligns with research by Issack et al. (2022), Agustina et al. (2022), and Rahma et al. (2022), which reveal that operational risk negatively affects financial performance. Higher operational risk leads to lower financial performance.

H4: Operating Expenses to Operating Income (BOPO) Negatively Influences Return On Assets (ROA)

### The Impact of Capital Adequacy Ratio (CAR) on Return On Assets (ROA)

Capital adequacy reflects the capital sufficiency required by a company, primarily to mitigate potential losses (Hasmiana et al., 2022). The Capital Adequacy Ratio (CAR) measures a bank's capital adequacy level. According to Financial Services Authority (OJK) Regulation Number 11/POJK.03/2016, banks must maintain a minimum capital of 8% of weighted assets. According to signaling theory, analyzed signals can be positive or negative. A CAR percentage above the minimum indicates sufficient capital for operations. Consequently, the company can address risks arising from banking operations using its capital, improving financial performance (Kepramareni et al., 2022). For stakeholders, this is a positive signal, providing hope and optimism. Conversely, a low CAR percentage signals insufficient capital to cover risks, deteriorating financial performance (Olivia et al., 2022). Research by Nadillah et al. (2021), Suroso (2022), Uddin et al. (2022), and Muliyanti et al. (2023) reveals that capital adequacy positively affects financial performance. Adequate capital allows banks to cover potential operational costs, improving financial performance, and vice versa.

H5: Capital Adequacy Ratio (CAR) Positively Influences Return On Assets (ROA)

### Research Framework

This section of the research framework illustrates the relationships between the study's variables. According to theory, company risks—comprising liquidity risk, credit risk, market risk, operational risk, and capital adequacy—can have both positive and negative impacts on financial performance. The research framework can be presented as follows:

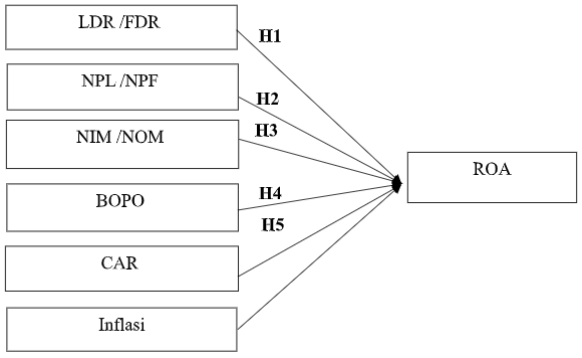


Figure 1
Research Framework (Olivia et al., 2022; Nadillah et al. 2021; Suroso, 2022; Uddin et al. ,2022)

## METHODOLOGY

The population of this study consists of conventional and Sharia banks listed with the Financial Services Authority (OJK) during the period 2019-2022. The sample selection method employed is purposive sampling. Based on the sample selection criteria, there are 103 banks from the population of conventional and Sharia banks within the 2019-2022 period, resulting in 412 observations. The type of data used in this research is panel data, which is a combination of time series and cross-sectional data. The data source for this study is secondary data obtained from www.ojk.go.id by examining the financial statements of each bank. This study utilizes panel data regression analysis techniques, processed using Eviews version 12 software.

This panel data test is conducted to determine the relationship between the independent variables, which include five variables: liquidity risk, credit risk, market risk, operational risk, and capital adequacy, and the dependent variable, which is financial performance. The panel data regression model is as follows:

$Y_{it} = \alpha + \beta\ 1\ LDR/FDR_{it} + \beta\ 2\ NPL/NPF_{it} + \beta\ 3\ NIM/NOM_{it} + \beta\ 4\ BOPO_{it} + \beta\ 5\ CAR_{it} + + \beta\ 6\ Inf_{it} + e$

Information:

| | |
|---|---|
| Y | : Financial Performance |
| $\alpha$ | : Konstanta |
| $\beta$ | : Koephicin |
| LDR /FDR | : Liquidity Risk |
| NPL /NPF | : Risiko Kredi |
| NIM /NOM | : Market Risk |
| BOPO | : Operational Risk |
| CAR | : Capital Adequacy |
| Inf | : Inflation |
| $e$ | : Error term |
| $t$ | : Time |
| $i$ | : company |

## Variable Operational Definition

### Financial Performance

Financial performance is measured using *Return On Assets* (ROA). *Return On Assets* (ROA) focuses on the ability of banks to earn profits in their operational activities (Laan et al., 2022). Based on the Circular Letter of Bank Indonesia (SEBI) number 13/24/DPNP of 2011 Return *On Assets* (ROA) is calculated by the formula:

$$ROA = \frac{interest\ before\ tax}{total\ aktiva}\ x\ 100\%$$

### Liquidity Risk

Liquidity risk is measured using the *Loan to Deposit Ratio* (LDR) for conventional commercial banks and *the Financing Deposit Ratio* (FDR) for Islamic commercial banks. Based on Bank Indonesia Circular Letter No. 13 /12 //24 /DPNP, liquidity risk is calculated by the formula:

$$LDR = \frac{total\ loan}{total\ DPK} x100\%$$

$$FDR = \frac{total\ financing}{Total\ DPK}\ x100\%$$

### Credit Risk

Credit risk is measured by the *Non-Performing Loan* (NPL) ratio for conventional commercial banks and *Non-Performing Financing* (NPF) for Islamic commercial banks. Based on Bank Indonesia Circular Letter No. 13 /12 //24 /DPNP, liquidity risk is calculated by the formula:

$$NPL = \frac{total\ non\ performing\ loan}{total\ credit} x100\%$$

$$NPF = \frac{total\ non\ performing\ financing}{total\ financing} x100\%$$

### Market Risk

Market risk is measured by the *Net Interest Margin* (NIM) ratio for conventional commercial banks and *Net Operating Margin* (NOM) for Islamic commercial banks. Based on Bank Indonesia Circular Letter No. 13 /12 //24 /DPNP, liquidity risk is calculated by the formula:

$$NIM = \frac{(interest\ income - interest\ expense)}{total\ assets} x100\%$$

$$NOM = \frac{interest\ income\ after\ tax}{aktiva\ produktive} x100\%$$

### Operational Risk

Operational Risk is measured by the ratio *of Operating Costs to Operating Income* (BOPO) for conventional and sharia commercial banks. Referring to previous research, Agustina (2022) uses the formula:

$$BOPO = \frac{total\ operational\ cost}{operational\ income} x100\%$$

### Capital Adequacy

Capital adequacy is measured by the *Capital Adequacy Ratio* (CAR) ratio for conventional and sharia commercial banks. Referring to previous research, Jayanti & Santika (2021) used the formula:

$$CAR = \frac{modal}{ATMR} x100\%$$

### Inflation

Inflation is a continuous increase in the price of general goods caused by a continuous decline in the value of the currency (Raharjo et al., 2020). The consumer price index is an indicator of inflation

measurement by comparing the current price with the price in the base year. Consumer price index data is obtained through the official website of Bank Indonesia www.bi.go.id.

## RESULT AND DISCUSSION

### Descriptive Analysis

Based on statisficaly result (see Table 2), shows that the results of the descriptive statistical test of the financial performance variable (Y) show a mean value of 0.997961. The highest value of the financial performance variable was 13.58000 from Bank Tabungan Pensiunan Nasional Syariah Tbk (BTPN Syariah) and the lowest value was -15.89000 from Bank Jago. Based on this *range*, a range of 29.47 was obtained. The deviation value is 2.882054 where the value is greater than the average value, this shows that the data is heterogeneous due to the varied distribution of data so that the average financial performance has a high level of deviation. This datapat means that the variation in the data distribution is quite good.

Table 2.
Results of Descriptive Statistical Analysis of Dependent Variables, Independent Variables, and Controls

| | ROA | LDR/FDR | NPL/NPF | NIM/NOM | BOPO | CAR | Inflation |
|---|---|---|---|---|---|---|---|
| Mean | 0.997961 | 89.94172 | 2.907112 | 4.279417 | 89.13655 | 37.64303 | 2.945000 |
| Median | 1.285000 | 83.16000 | 2.635000 | 4.320000 | 84.13000 | 25.01500 | 2.295000 |
| Maximum | 13.58000 | 971.6500 | 22.27000 | 19.30000 | 428.4000 | 820.8800 | 5.510000 |
| Minimum | -15.89000 | 0.000000 | 0.000000 | -12.24000 | 0.800000 | 0.180000 | 1.680000 |
| Std. Dev | 2.882054 | 60.51665 | 2.324281 | 2.910033 | 38.56227 | 55.03428 | 1.53667 |

Source: EViews Processing Output12, 2024

Liquidity risk (X1) as an independent variable that shows a mean value of 89.94172. The highest value of the liquidity risk variable of 971.6500 came from Bank Digital BCA and the lowest value of 0.000000 came from two different companies, namely Bank Digital BCA and Bank Aladin Syariah. Based on this range, a range of 971.65 was obtained. The deviation value of 60.51665 is lower than the average value, which indicates that the data is homogeneous. Credit risk (X2) as an independent variable that shows a mean value of 2.907112. The highest value of the credit risk variable of 22.27000 came from the local government bank (d.h Sandi) and the lowest value of 0.000000 came from seven different banks, namely Bank Capital Indonesia, Bank Digital BCA, Bank Jago, JP Morgan Chase bank, bank of America, Bank Deutschie, and Bank Aladin Syariah. Based on this range, a range of 22.27 was obtained. The deviation value of 2.324281 is lower than the average value, which indicates that the data is homogeneous.

Furthermore, Market risk (X3) as an independent variable that shows a mean value of 4.279417. The highest value of the market risk variable of 19.30000 came from Bank Amar Indonesia and the lowest value of -12.24000 came from Bank Aladin Syariah. Based on this *range*, a range of 31.54 was obtained. The deviation value of 2.910033 is lower than the average value, which indicates that the data are homogeneous or uniform. Operational risk (X4) as an independent variable that shows a mean value of 89.13655. The highest value of the operational risk variable of 428.4000 came from Bank Aladin Syariah and the lowest value of 0.800000 came from the Regional Government Bank of West Java and Banten. Based on this *range*, a range of 427.6 was obtained. The deviation value of 38.56227 is lower than the average value, which indicates that the data is homogeneous.

Capital adequacy (X5) as an independent variable that shows a mean value of 37.64303. The highest value of the capital adequacy variable of 820.8800 came from Bank Digital BCA and the lowest value of 0.180000 came from Bank Governments of West Java and Banten. Based on this *range*, a range of 820.7 was obtained. The deviation value is 55.03426 where the value is greater than the average value, this shows that the data is heterogeneous due to the varied distribution of data so that the average financial performance

has a high level of deviation. This can be interpreted that the variation in the data distribution is quite good. Lastly, Inflation (K) as a control variable that shows a mean value of 2.945000. The highest value of the inflation variable was 5.510000 from all banks in the 2019 period and the lowest value was 1.680000 from all banks in the 2022 period. Based on this *range*, a range of 3.83 was obtained. The deviation value of 1.533667 is lower than the average value, which indicates that the data is homogeneous.

## Panel data regression estimation tests

Based on the model fit test, from the three types of panel data regression estimation tests, the selected model is the *Random Effect Model (REM)* (see Table 3). The constant has a positive regression coefficient value of 4.7510, which means that if the value of liquidity risk (X1), credit risk (X2), market risk (X3), operational risk (X4), capital adequacy (X5), inflation (K) and financial performance (Y) is 0, then the financial performance is 4.7510.

Table 3.
Results of Random Effect Model *(REM)* Panel Data Regression

| Variable | Coefficient | Std. Error | t-Statistic | Prob |
|---|---|---|---|---|
| C | 4.751079 | 0.3253 | 14.60522 | 0.0000 |
| LDR/FDR | 0.001929 | 0.001098 | 1.756481 | 0.0798 |
| NPL/NPF | -0.045986 | 0.036547 | -1.258276 | 0.2090 |
| NIM/NOM | 0.178149 | 0.033735 | 5.280869 | 0.0000 |
| BOPO | -0.054357 | 0.002006 | -27.09175 | 0.0000 |
| CAR | 0.001592 | 0.001435 | 1.109401 | 0.2679 |
| Inflasi | 0.078076 | 0.03645 | 2.142000 | 0.0328 |
| R-sqeuared | 0.716829 | | | |
| Adjusted R-Square | 0.712634 | | | |
| S.E of regression | 1.100907 | | | |
| F-statistic | 170.8722 | | | |
| Prob (F-statistic) | 0.000000 | | | |

Sumber: Output EViews 12, 2024

Liquidity risk variable (X1) has a positive regression coefficient value of 0.0019, which indicates that each liquidity risk variable (X1) increases by one unit, then the magnitude of financial performance will increase by 0.0019, assuming the value of the other variable is fixed. Credit risk variable (X2) has a negative regression coefficient value of 0.0459, which indicates that if the liquidity risk variable (X2) increases by one unit, then the amount of profit management will decrease by 0.0459, or every improvement in financial performance by one unit requires a decrease in the credit risk variable (X2) by 0.0459, assuming the value of the other variable remains fixed. Market risk variable (X3) has a negative regression coefficient value of 0.1781, which indicates that if each market risk variable (X3) increases by one unit, then the magnitude of financial performance will increase by 0.1781, or that for every decrease in financial performance by one unit, a decrease in the market risk variable (X3) is required by 0.1781, assuming the value of the other variable is fixed. Operational risk variable (X4) has a negative regression coefficient value of 0.0543, which indicates that if each operational risk variable (X4) increases by one unit, then the magnitude of financial performance will decrease by 0.0543, or that for every increase in financial performance by one unit, a decrease in the operational risk variable (X4) is required by 0.0543, assuming the value of the other variable is fixed. Capital adequacy variable (X5) has a positive regression coefficient value of 0.0016, which indicates that if each capital adequacy variable (X5)

increases by one unit, then the magnitude of financial performance will increase by 0.0016, or that for every decrease in financial performance by one unit, a decrease in the capital adequacy variable (X3) is required by 0.0016, assuming the value of the other variable is fixed. Inflation variable (K) has a positive regression coefficient value of 0.0780, which indicates that if each inflation variable (K) increases by one unit, then the magnitude of financial performance will increase by 0.0780, or that for every decrease in financial performance by one unit, a decrease in the inflation variable (K) of 0.0780 is required, assuming the value of the other variable is fixed.

## Discussion

### The Effect of Liquidity Risk on Financial Performance

The results of the first test show that the size of the company's liquidity level does not affect the level of financial performance of commercial banks. The comparison between loans given and deposits has no effect because the proceeds from the credit/financing profits are most likely to be channeled directly to depositors, for the company's operational costs and can also be used to provide employee salaries. Based on signalling *theory*, management can provide a good or bad signal that will have an impact on investors' views regarding the company's financial performance. Companies that have a good level of liquidity risk management will provide strong signals such as their ability to pay consistent dividends and have a stable capital structure, then they will convey to the market that they have sufficient liquidity levels and can meet their short-term obligations. Although liquidity risk management may not necessarily improve financial performance, it is possible that investors are interested in investing because the company can manage its funds properly. The results of this study are supported by the research of Agustina et al (2022), Harban et al., (2021), Sari et al., (2022), Olivia et al., (2022), Kepramareni el al., (2022), Ali & Oudat (2020) which shows that financial performance is not affected by the existence of liquidity risk. It can be concluded that the increase or decrease in LDR/FDR does not affect the size or size of the financial performance of commercial banks. However, the results of this study are contrary to the results of Issack et research. Al., (2022), Hermuningsih et al., (2022), Hasmiana et al., (2022), which proves that the high and low level of LDR/FDR affects the financial performance of banks.

### The Effect of Credit Risk on Financial Performance

The results shown that financial performance is not affected by credit risk. There is no influence between credit risk variables and financial performance variables because the average credit risk in this study is lower than the maximum credit risk limit set by Bank Indonesia of 5%. The acquisition of this low average score shows that the credit risk of commercial banks in Indonesia is still below the maximum number, allowing the non-performing loans/financing faced by commercial banks to be relatively low and can be overcome. Therefore, it does not have a significant effect on financial performance (ROA). Based on *signalling theory*, management can provide a good or bad signal which will have an impact on investors' views regarding the company's financial performance. Good credit risk management can show that management can manage its credit risk well. Good credit risk management will show that the company's financial condition is in good condition, although it is not necessarily the same actual situation as it seems. Therefore, the magnitude of credit risk shown by the company may not affect investors' decision-making in investing their funds in the company. The results of this study are in line with Agustina el al., (2022), Olivia et al., (2022), Uddin (2022), Kepramareni et al., (2022), that financial performance (ROA) is not affected by credit risk (NPL/NPF). However, the results of this study are contrary to the research of Sari et al., (2022), Rahma & Fauziah (2022) which proves that financial performance (ROA) is negatively affected by credit risk (NPL/NPF).

### The Effect of Market Risk on Financial Performance

The test results presented that any increase in market risk will affect financial performance. Thus, the higher the market risk (NIM/NOM) will increase the bank's income such as the increase in margin earned by the bank, thus indicating that the bank's income on interest and assets is higher, which will increase the company's profit. The ability of bank management to generate net interest can affect the level of a bank's income to its total assets (Olivia et al., 2022). Based on *signalling theory*, management can provide a good or bad signal which will have an impact on investors' views regarding the company's financial performance. Good market risk management will have a good impact on the company because the company's income from the interest margin can be recognized as the company's profit so that it can affect financial performance. Therefore, good market risk management will improve financial performance. So, investors will be interested in investing their funds in the company. The results of this study support the results of research by Korompis et al., (2020), Sunaryo (2020), Olivia et al., (2022), which prove that financial performance is positively and significantly affected by credit risk. However, the results of this study contradict the research of Issack et al., (2022), which states that financial performance is not affected by market risk.

## The Effect of Operational Risk on Financial Performance

The fourth test is to test the influence of operational risk on the financial performance of commercial banks. Previous test results show that an increase or decrease in operational risk (BOPO) will negatively affect financial performance (ROA). The BOPO ratio is used to measure the level of efficiency in managing its operational activities. Bank efficiency can be done in several ways, one of which is by reducing operational costs to increase operating income thereby increasing bank profitability. Thus, the level of efficiency of banks in carrying out their operational activities affects the income earned by banks. If banks are able to carry out their operational activities efficiently (low BOPO ratio), the income earned by banks will be recognized as an advantage and have an impact on improving bank performance (Olivia et al., 2022). Based on *signalling theory*, signals can be good or bad information. The magnitude of financial risk will be able to affect financial performance and will have an impact on the company such as improving the financial performance of banks. The management of risks that arise in a company's operations effectively shows that the company's operational management is working well. Therefore, investors will assume that the company is in a stable state. So investors will be interested in investing in the company. The results of this study are in line with the research of Issack et. Al., (2022), Agustina et al., (2022), Rahma & Nurfauziah (2022) which stated that financial performance is negatively affected by operational risks. However, the results of this study contradict the results of research by Ali & Oudat (2020), and Harban et al., (2021) which prove that financial performance is not affected by operational risks.

## The Effect of Capital Adequacy on Financial Performance

The fifth test is to test the effect of capital adequacy on the financial performance of commercial banks. The test results show that capital adequacy has no effect on the financial performance of commercial banks. The size of a bank's capital adequacy (CAR) does not necessarily determine the size of the bank's profits. Based on the average value of liquidity risk which is still within a normal percentage, it can be concluded that banks use more third-party funds to be embarrassed to debtors, so that companies do not use too much of their capital for credit distribution/financing. The lack of influence of capital on financial performance can be attributed to the fact that banks operating during the observation period did not use much of their capital (Kepramareni et al., 2022). Based on *signalling theory*, signals can be good information or bad information. Investors will look at the level of capital owned by banks to ensure that banks have enough capital to operate. Although the adequacy of capital cannot be used by the company to

improve its financial performance, investors will feel safe if the bank has sufficient capital. Therefore, investors will be able to still choose to invest in the bank. The results of this study are in line with Jayanti & Santika (2021) and Kepramareni et al., (2022) which prove that there is no influence of capital adequacy on financial performance. However, this result is contrary to Nadillah et al., al (2021), Suroso (2022), Uddin et al., (2022) and Muliyanti et al., (2023) which prove that there is an influence between capital adequacy and financial performance.

## CONCLUSION AND RECOMMENDATION

Based on research conducted using 103 commercial banks in Indonesia, it can be concluded that partially liquidity risk (LDR/FDR), credit risk (NPL/NPF) and capital adequacy (CAR) have no effect on financial performance (ROA) so that the first, second, and fifth hypotheses are rejected. It is hoped that banks can optimize third-party funds and pay attention to the quality of loans disbursed and their capital. The market risk variable (NIM/NOM) has a positive effect on financial performance (ROA), meaning that if NIM/NOM increases, the ROA obtained also increases. The operational risk variable (BOPO) has a negative effect on financial performance (ROA), so the fourth hypothesis is accepted. If the BOPO value increases, it will cause the bank's financial performance to decrease. However, simultaneously all independent variables, namely liquidity risk variables (LDR/FDR), credit risk (NPL/NPF), market risk (NIM/NOM), operational risk (BOPO) and capital adequacy (CAR) as well as inflation control variables have an effect on the financial performance of conventional and sharia commercial banks.

The theoretical implications explain that it is increasingly urgent for signalling theory to work to explain banking financial risk. This is because risks in the banking industry are often not known or fully understood by stakeholders that can affect financial performance. Through this signalling theory, the results of this study also imply the need for early warning about the governance of information asymmetry related to financial risks in commercial banks. This research also has practical implications for the development of a more effective risk management strategy and optimizing financial performance in banks. The findings of this study have limitations, this study only uses bank financial institutions, namely commercial banks. while bank financial institutions in Indonesia are commercial banks and People's Credit Banks. In addition, the time span used in this study is also limited, namely 4 years from 2019 to 2022. Suggestions for future research can be to add research samples such as non-bank financial institutions and also time ranges.

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