The Influence of Financial Risk on the Financial Performance of Commercial Banks Listed on the IDX

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ABSTRACT

This study aims to analyze financial risks, including capital risk, liquidity risk, and operational risk, in relation to financial performance, measured by Return on Assets (ROA) and return on equity (ROE). The study also includes bank size as a control variable in assessing financial performance. The research employs purposive sampling to select samples, focusing on conventional commercial banks listed on the Indonesia Stock Exchange (IDX) over a five-year period from 2019 to 2023. Data were collected from 33 banks and analyzed using descriptive statistiks and a fixed effects model for hypothesis testing. Data analysis was conducted through panel data regression analysis using E-views 9.0. The findings of this study indicate that capital risk does not impact financial performance, liquidity risk has no effect on financial performance, operational risk has a significant negative effect on financial performance, and bank size does not influence financial performance. Based on this research, it is recommended that banks thoroughly evaluate operational risks. Future researchers are encouraged to include additional independent variables and extend the sample period for more accurate results.

Keywords: *Financial Risk, Financial Performance, Capital Risk, Liquidity Risk, Operational Risk*

ABSTRAK

Penelitian ini bertujuan untuk menganalisis risiko finansial seperti risiko permodalan, risiko likuiditas, risiko operasional terhadap kinerja keuangan yang diukur dengan pengembalian atas aset (ROA) dan pengembalian atas ekuitas (ROE). Terdapat juga variabel kontrol yaitu ukuran bank terhadap kinerja keuangan. Penelitian ini menggunakan purposive sampling sebagai metode pengambilan sampel. Sampel yang diambil adalah perusahaan bank umum konvensional yang terdaftar di Bursa Efek Indonesia (BEI) periode lima tahun dari 2019-2023. Data dikumpulkan dari 33 bank dan dianalisis menggunakan statistik deskriptif dan model efek tetap untuk pengujian hipotesis. Pengujian data dilakukan dengan metode analisis regresi data panel dengan E-views 9.0. Hasil dari penelitian ini menunjukkan bahwa risiko permodalan tidak berpengaruh terhadap kinerja keuangan. Risiko likuiditas tidak berpengaruh terhadap kinerja keuangan. Risiko operasional berpengaruh negatif signifikan terhadap kinerja keuangan. Ukuran bank tidak berpengaruh terhadap kinerja keuangan. Berdasarkan penelitian ini, bank disarankan untuk mengevaluasi risiko operasional dengan mendalam. Peneliti merekomendasikan agar penelitian

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selanjutnya dapat menambah variabel independent lain dan juga jangka waktu sample yang lebih panjang agar hasil lebih akurat.

***Kata kunci**: Risiko Keuangan, Kinerja Keuangan, Risiko Permodalan, Risiko Likuiditas, Risiko Operasional*

INTRODUCTION

In facing the increasingly dynamic global economy, the banking sector has a great responsibility in managing financial risk, which is an important part of banking activities and can greatly affect the financial performance of commercial banks. Factors such as capital risk, liquidity risk, and operational risk can have various impacts on a bank's financial performance (Harban et al., 2021). Financial risk is one of the main challenges for many listed companies, especially those whose valuations depend on market conditions. Understanding the impact of financial risk on bank performance is crucial to optimizing risk management strategies to ensure the continuity and financial health of the banking industry. In Indonesia, the financial performance of the banking sector is supervised by the Financial Services Authority (*Otoritas Jasa Keuangan*/OJK). Based on OJK data for the period 2017 to 2019, banking financial performance showed a slight increase of 0.02%, from 2.45% to 2.47%. However, in 2021 there was a significant decline of up to 1.85%, down by 0.62%. This decline was accompanied by an increase in the loan at risk rate, which increased from 9.93% in 2019 to 19.48% in 2021. This period marks a critical challenge for the profitability of the banking sector, so that credit risk management receives more attention.

Financial performance can be measured through Return on Assets (ROA) and Return on Equity (ROE) (Evoney & Margaretha, 2024; Arif et al., 2024). ROA measures how well a bank uses its assets to generate profits, while ROE shows how efficiently a bank utilizes shareholder funds to maximize net profit. Higher ROA and ROE values reflect good managerial efficiency, while low values indicate poor management efficiency (Azura et al., 2023). Bank capital plays an important role in risk mitigation, especially when protection in banking institutions is inadequate (Abdelhay et al., 2022). In addition, research Temesi et al. (2023) found that capital risk has a positive and significant effect on bank performance, where each unit increase in capital risk significantly contributes to improved financial performance. Another study by Binsaddig et al. (2023) also supports a significant relationship between capital risk and bank performance. Liquidity risk arises from the potential inability of a bank to meet its short-term obligations, such as withdrawals by depositors or repayment of maturing obligations. This risk is very critical because it can trigger a domino effect, resulting in solvency problems and damaging public confidence in the banking system (Rudhani & Balaj, 2019). Research by Oudat et al. (2024) shows that capital risk has a significant effect on bank performance, which means that increasing capital risk can improve financial performance as measured by ROA and ROE. However, research from Ejike & Agha (2018) reports a negative relationship between liquidity risk and financial performance.

Operational risk is also an important factor in banking performance, especially after various crises that show that failure in operational risk management can have a significant impact on the financial system. Ali & Oudat (2020) found a positive relationship between operational risk and financial performance. Conversely, Aruwa & Musa (2014) reported that operational risk did not have a significant effect on bank performance. Research by Ghenimi et al. (2017) shows that bank size has a negative effect on financial stability, indicating that the larger the bank size, the greater the risk that can reduce financial performance and stability. Conversely, Ilaboya & Ohiokha (2016) show that a company's financial success can be positively influenced by its size. Financial risk management, including capital, liquidity, and operational risks, is an important aspect in determining the financial performance of banks in Indonesia. With strict supervision from the OJK and the influence of global economic dynamics, banks need to design adaptive and effective risk management strategies to increase ROA and ROE. This research is relevant

for banks listed on the Indonesia Stock Exchange (IDX), because it provides deeper insight into the direct impact of financial risk on bank performance as measured by ROA and ROE.

LITERATURE REVIEW

Financial performance is a comprehensive picture of the company's condition in a certain period and the achievements influenced by operational activities in utilizing its resources. On the other hand, financial performance is often measured through profitability, which is often identified as one of the leading indicators in reviewing a company's financial performance (Khalaf et al., 2024). Capital risk reflects the bank's ability to absorb fluctuations in the value of its assets (Mousa et al., 2018). A common measuring instrument used to assess this risk is the Capital Adequacy Ratio (CAR), which is calculated using the formula Equity Capital / Total Assets. Based on the Basel II standard, the minimum adequate CAR is 8%. Previous research results show mixed results, such as Irons (2019), who reported a positive impact on bank financial performance. While Mousa et al. (2018) found a significant negative relationship between capital risk and bank financial performance.

Liquidity risk is an important factor in a company's financial performance, especially in the banking sector. Liquidity refers to an entity's ability to meet financial obligations without experiencing difficulties. Effective liquidity management ensures that a company has sufficient resources to meet its financial commitments, thereby reducing the risk of default (Kimondo, 2014). A common measure used to assess liquidity risk is the Loan Deposit Ratio (LDR), which is calculated by dividing total loans by total deposits; the higher the LDR, the greater the liquidity risk. Research shows a negative relationship between liquidity risk and financial performance. Ejike & Agha (2018) and Huong et al. (2021) found that increasing liquidity risk has a negative impact on financial performance. These findings underscore the importance of good liquidity risk management to support stable financial performance. Operational risk measurement is generally carried out using the Operating Expense to Operating Income (*Biaya Operasional terhadap Pendapatan Operasional*/BOPO). This ratio is calculated using the formula Total Operating Expense x 100%. A high BOPO ratio indicates inefficiency in operational activities, with a reasonable limit below 70% and a maximum limit set by Bank Indonesia of 90%. The higher the BOPO value, the lower the bank's operational efficiency.

Research by Riyadi et al. (2024) shows that operational risk as measured by BOPO has a negative and significant effect on bank profitability as measured by Return on Assets. Similar results were also found in research by Wasiuzzaman & Gunasegavan (2013), which showed a negative relationship between operational risk and financial performance. Bank size plays an important role in determining financial performance. According to Athanasoglou et al. (2008), the scale of the company has a significant positive effect on financial success. Research by Al-Fehani et al. (2021) shows that banks with larger assets can provide wider services, which contributes to higher profitability. Bank size is measured using the natural log of total assets (Kafidipe et al., 2021). Research by Marie et al. (2021) also found that bank size has a positive effect on bank financial performance and stability. Banks have an important role in collecting funds from the public and allocating them through credit provision, with the main income obtained from interest, commissions, and loan provisions (Saleh & Paz, 2023).

However, banks are also faced with certain risks, including liquidity risk and credit risk (Fadun & Silwimba, 2023). Based on research, Irons (2019) found that capital risk positively impacts financial performance, suggesting it can enhance financial outcomes. However, Mousa et al. (2018) reported a negative effect, indicating that higher capital risk may harm financial performance. This contrast highlights varying impacts depending on study contexts and methods. Liquidity risk generally impacts financial performance negatively, as indicated by Ejike & Agha (2018). However, Huong et al. (2021) found the opposite effect, suggesting that under certain conditions, liquidity risk may positively influence financial performance. Thus, the relationship between liquidity risk and

financial performance varies based on different studies and contextual factors. Operational risk has been shown to have a positive impact on financial performance, as seen in Al-Tamimi & Al-Mazrooei (2007). However, other studies have reported a negative impact or no significant impact at all, indicating mixed results on how operational risk affects financial results (Wasiuzzaman & Gunasegavan, 2013; Aruwa & Musa, 2014). Finally, bank size has a positive effect on financial performance (Adewale et al., 2023). The conceptual framework of this study describes the impact of the variable's capital risk, liquidity risk, operational risk, and bank size on financial performance.

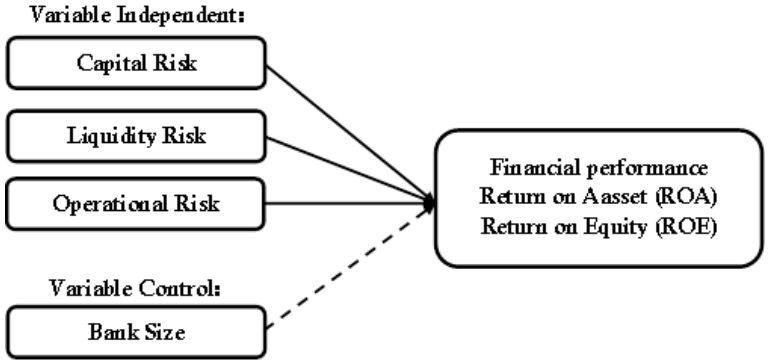

Figure 2. Framework of thinking

H1: Capital risk has significant effect on bank financial performance.
H2: Liquidity risk has significant effect on bank financial performance.
H3: Operational risk has significant effect on bank financial performance.
H4: Bank size has significant effect on bank financial performance.

METHODS

This study is a quantitative study using panel data regression analysis, including the Chow test and the Hausman test, within an explanatory research framework (Hsiao, 2022). Explanatory research aims to describe the causal relationship between several variables through statistical testing. This relationship can be shown through correlation between variables or measuring the influence of one variable on another. This study relies on quantitative secondary data collected for five years, from 2019 to 2023. The research sample includes conventional banks listed on the Indonesia Stock Exchange (IDX), with all secondary data taken from the relevant bank's annual financial reports. The focus of this study is to analyze the influence of Financial Risk, including Capital Risk (CAPR), Liquidity Risk (LIQR), Operational Risk (OPR) and one control variable, namely Bank size, on banking financial performance as measured by Return on Assets (ROA) and Return on Equity (ROE).

RESULTS

The purpose of the normality test is to determine whether the obtained data is normally distributed or not. The Table 1 Chow Test, it shows that the value of the cross-section chi-square probability of Model 1 (Return on Assets) and Model 2 (Return on Equity) is $0.0000 \leq 0.05$, so H0 is rejected. Thus, the conclusion that can be drawn is that the best model selected is the fixed effect model. Based on the Hausman Test, it shows that the value of the cross-section chi-square probability of Model 1 (Return on Assets) is 0.0096 <0.05, so H0 is rejected. The value of the cross-section chi-square probability of Model 2 (Return on Equity) is 0.0445 <0.05, so H0 is rejected. Thus, the conclusion that can be drawn is that the best model selected is the fixed effect model. Based on the results of the F Test, it shows that the value of Prob (F-Statistic) Model 1 (Return on Assets) is $0.0000 \leq 0.05$, so H0 is rejected. This means that there is at least 1 independent variable that affects the dependent variable so that the model is feasible to use. For the value of Prob (F-Statistic) Model 2 (Return on Equity) of $0.0000 \leq 0.05$, then H0 is rejected. This means

that there is at least 1 independent variable that affects the dependent variable so that the model is feasible to use.

Table 1. Chow test, Hausman test and F test result

	Effects Test	Model	Prob.	Conclusion
Chow test	Cross-Section Chi-Square	Model 1 (Return on Assets)	0.0000	H0 is rejected
	Cross-Section Chi-Square	Model 2 (Return on Equity)	0.0000	H0 is rejected
Hausman test	Cross-Section Random	Model 1 (Return on Assets)	0.0096	H0 is rejected
	Cross-Section Random	Model 2 (Return on Equity)	0.0445	H0 is rejected
F test	Prob. (F-Statistic)	Model 1 (Return on Assets)	0.0000	H0 is rejected
	Prob. (F-Statistic)	Model 2 (Return on Equity)	0.0000	H0 is rejected

The ROA model produces an adjusted R square value of 0.404397, which means that the variation or behaviour of the independent variables, namely CAPR, LIQR, OPR and the bank size control variable, is able to explain the variation or behaviour of the dependent variable, namely ROA, by 40.43%. While the remaining 59.57% is the variation or behavior of other independent variables that affect ROA but are not included in this research model.

Table 2. Results of the goodness of fit test

Testing	Model	Value
Adjusted R-Squared	Model 1 (Return on Assets)	0.404397
Adjusted R-Squared	Model 2 (Return on Equity)	0.432612

The ROE model produces an adjusted R square value of 0.432612, which means that the variation or behavior of the independent variables, namely CAPR, LIQR, OPR and the bank size control variable is able to explain the variation or behavior of the dependent variable, namely REO, by 43.26%. While the remaining 56.74% is the variation or behavior of other independent variables that affect ROE but are not included in this research model.

Table 3. Results of descriptive analysis test

Variable	Minimum	Maximum	Mean	Std. Deviation
ROA	-18.06000	4.140000	0.658121	2.190438
ROE	-123.9300	80.98000	4.774121	16.62812
CAPR	0.500000	96.34000	12.63630	15.68670
LIQR	11.98000	354.9900	106.1014	58.57803
OPR	14.61000	1300.520	90.94624	109.4800
SIZE	153862.0	304395.0	197822.0	37044.54

This analysis summarizes data variation by displaying the minimum, maximum, average (mean), and standard deviation values. The minimum value reflects the smallest number of the variables analyzed, while the maximum value shows the largest number. The average represents the middle value of each variable, and the standard deviation describes the level of variation in the research data, allowing researchers to assess whether the data distribution is homogeneous or fluctuating. The results of the analysis in table 5 show that Return on Asset (ROA) has an average of 0.658121 with a standard deviation of 2.190438, where the maximum value of 4.140000 was achieved by Allo Bank Indonesia Tbk in 2021, while the minimum value of -18.06000 came from Bank Raya Indonesia Tbk in the same year. Furthermore, Return on Equity (ROE) shows an average of 4.774121 and a standard deviation of 16.62812, with a maximum value of 80.98000 from Bank Negara Indonesia Tbk in 2023 and a minimum value of -123.9300 from Bank Raya Indonesia Tbk in 2021.

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Table 4. T Test Result

Model	Variables		Coefficient	Prob.	Conclusion
Return on Assets (ROA)	Dependent	Constanta	-14.52814	0.2193	
		CAPR	0.032702	0.0740	H0 Failed to be rejected
		LIQR	0.000868	0.9018	H0 Failed to be rejected
		OPR	-0.004695	0.0038	H0 rejected
		Bank Size	0.0000764	0.2011	H0 Failed to be rejected
Return on Equity (ROE)	Independent	Constanta	-79.55167	0.3634	
		CAPR	0.140805	0.2971	H0 Failed to be rejected
		LIQR	-0.006838	0.8956	H0 Failed to be rejected
		OPR	-0.038300	0.0015	H0 rejected
		Bank Size	0.000439	0.3212	H0 Failed to be rejected

For Capital Risk (CAPR), the average value is recorded at 12.63630 with a standard deviation of 15.68670, where the maximum value of 96.34000 is owned by Bank Raya Indonesia Tbk in 2023 and the minimum value of 0.500000 by Bank Central Asia Tbk in the same year. Liquidity Risk (LIQR) has an average of 106.1014 and a standard deviation of 58.57803, with a maximum value of 354.9900 obtained from Bank Ganesha Tbk in 2021, and a minimum value of 11.98000 from Bank Capital Indonesia Tbk in the same year. Operational Risk (OPR) shows an average of 90.94624 and a standard deviation of 109.4800, where the maximum value reaches 1300.520 from Bank J Trust Indonesia Tbk in 2020 and a minimum value of 14.61000 from Allo Bank Indonesia Tbk in the same year. Finally, the bank size (Size) has an average of 197822.0 and a standard deviation of 37044.54, with a maximum value of 304395.0 from Bank Mestika Tbk in 2022 and a minimum value of 153862.0 from Bank Ganesha Tbk in 2019. The results of the panel data regression analysis equation can be described as follows:

Model 1: ROAit = -14.52814 + 0.032702CAPR + 0.00868LIQR - 0.004695OPR + 0.0000764Size
Model 2: ROEit = -79.55167 + 0.140805CAPR - 0.006838LIQR - 0.038300OPR + 0.000439Size

If sig t ≤ α 0.05 (alpha 5%) then H0 is rejected, this means that there is an influence between the independent variable and the dependent variable. If sig t > α 0.05 (alpha 5%) then H0 fails to be rejected. This means that there is no influence between the independent variable and the dependent variable.

The t-test is used to test the hypothesis by conducting a gradual test in measuring whether Capital Risk, Liquidity Risk, Operational Risk and Bank size control variables affect the dependent variable Return on Asset (ROA). The t-test is also used to see the significance of the relationship between each independent variable and the dependent variable by assuming the other variables are constants. In tables 6 and 7 of the processing results for individual testing (t-test) shows that capital risk has a p-value of 0.0740> 0.05, which means that H0 fails to be rejected so that it is not proven that Capital Risk has an effect on ROA. Liquidity risk has a p-value of 0.9018> 0.05, which means that H0 fails to be rejected so that it is not proven that Liquidity Risk has an effect on ROA. Operational risk has an estimated coefficient of -0.004695, which means that increasing OPR will decrease ROA and conversely decreasing OPR will increase ROA. The p-value is 0.0038 ≤ 0.05, which means that H0 fails to be rejected, so it can be concluded that Operational Risk has a significant negative effect on ROA. Bank size has a p-value of 0.0000764> 0.05, which means that H0 fails to be rejected, so it is not proven that Bank Size has an effect on ROA.

CONCLUSION

This study's regression analysis found that Capital Risk has no significant effect on bank financial performance, measured by ROA and ROE, despite a slight positive association. This result contrasts with previous studies indicating a positive link between capital risk and bank performance. Liquidity Risk also showed no significant impact on ROA and ROE, although a slight negative tendency was observed, suggesting increased liquidity risk could marginally lower financial performance. However, this relationship did not reach statistical significance. Past research suggested that maintaining liquidity could positively impact ROA, though it aligns with the finding here that Liquidity Risk does not affect ROE. Operational Risk was found to have a significant negative effect on bank performance; as operational risk increases, financial performance, particularly ROA and ROE, tends to decline. This finding aligns with studies highlighting the potential losses banks face due to operational failures, such as system inefficiencies, technology issues, or procedural mistakes. Meanwhile, Bank Size displayed a minimal and statistically insignificant relationship with financial performance, though a very slight positive trend was noted. This result aligns with certain research but contrasts with findings that suggest larger banks may struggle to manage assets efficiently, negatively impacting performance. This study focused only on banks listed on the Indonesia Stock Exchange, using three independent variables (capital risk, liquidity risk, operational risk) and two dependent variables (ROA, ROE), along with bank size as a control variable. The study suggests that future research could incorporate additional factors, such as Return on Sales, and extend the research period to gather more comprehensive insights.

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