Jurnal Ekonomi Bisnis dan Kewirausahaan (JEBIK)
2024, Vol.13, No.1, 148-167

MARKET POWER, BANK-SPECIFIC FACTORS, AND MACROECONOMIC EFFECTS ON BANKING PROFITABILITY IN INDONESIA: BEFORE AND AFTER THE COVID-19 PANDEMIC

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ABSTRACT

This paper examines the impact of market power, bank-specific factors, and macroeconomic changes on profitability in conventional and Islamic banking in Indonesia before and after the COVID-19 pandemic. The data was collected quarterly from 6 conventional banks and 6 Islamic banks during the period from the second quarter of 2014 to 2023, and analyzed using a panel data regression model approach. The dependent variable is bank profitability, measured using the return on asset proxy (ROA) and net interest margin (NIM) / net operating margin (NOM); while the independent variables are concentration ratio (CR), third-party funding (TPF), capital adequacy ratio (CAR), non-performing loan (NPL), operating expenses to operating income (BOPO ratio), gross domestic product (GDP), inflation, exchange rate, and dummy variables. The findings demonstrate that the COVID-19 pandemic has had a detrimental impact on both types of banking, with Islamic banking experiencing a more significant impact than the conventional banking. Furthermore, the TPF, BOPO ratio, exchange rate, and inflation have a comparable impact on the profitability in both types of banking. Similarly, the market power, NPL, CAR, and GDP have distinct impact on the two types of banking, demonstrating disparities in operational features and industry competitiveness levels.

JEL: L16, E32, G21.

Keywords: *profitability, market power, bank-specific factors, macroeconomic, COVID-19 pandemic.*

1. INTRODUCTION

The COVID-19 pandemic has had a significant impact on the healthcare and economic sectors due to social restriction policies (Tisdell, 2020), and brought disruptions in various fields (Potti & Pillai, 2022). No one was prepared for the pandemic (Nie, Yow, & Wei, 2021), nor the industry (Takyi, Dramani, Akosah, & Aawaar, 2023). Businesses, especially the banking sector, were forced to adapt their operations to ensure their sustainability (Susamto, Octavio, Risfandy, & Wardani, 2023).

The COVID-19 pandemic had caused reduced demand for various types of loans, while banks had tightened credit standards to anticipate increased risks (Nie *et al*., 2021). The banks also had experienced a decrease in both assets (Tran, Viet, Bui, Nguyen, & Hoang, 2023) and profits (Ramlall, 2022). In some cases, employing major efficiency measures might increase the banks' resilience to crisis shocks, as observed in Indian banks (Gulati, Charles, Hassan, & Kumar, 2023).

Indonesia follows to a dual banking system model in which conventional and Islamic banks coexist to provide opportunities, expansion, and optimization for achieving financial stability. The business model of Islamic banking, which is focused on the real sector and

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Received: 30-10-2023, Accepted: 16-08-2024, Published: 29-08-2024
P-ISSN: 2087-9954, E-ISSN: 2550-0066. DOI: http://dx.doi.org/10.26418/jebik.v13i1.72197

underlying assets, makes it "perceived" to be more resilient to shocks and uncertainties. This is demonstrated by the events of the 2008 global financial crisis (Ghouse, Ejaz, Bhatti, & Aslam, 2023), which had a greater impact on the conventional banking compared than on the Islamic banks (Mobarek & Kalonov, 2014). The more effectively a bank manages and mitigates risks, the higher its profit.

Profitability serves as the primary measure for evaluating a bank's internal performance in terms of earning generation. According to the literature, factors influencing the level of banking profitability include firm size, financial structure, potential risks, management efficiency (Davis, Karim, & Noel, 2022), competitive conditions, market concentration, and changes in macroeconomic conditions (Ramlall, 2009), such as inflation, interest rates, economic growth, and monetary policies (Jumono, Sugiyanto, & Mala, 2019).

This study examines the impact of market power, bank-specific factors, and macroeconomic changes on the profitability in both conventional and Islamic banking in Indonesia before and after the COVID-19 pandemic. The market power is measured by the concentration ratio (CR), based on the differences in the characteristics of competition in the banking industry. In this context, the Islamic banking exhibits a relatively high level of concentration (classified as an oligopolistic market structure (Al Arif, 2017), while the conventional banking is less concentrated (similar to a monopolistic market). This study employs the New Empirical Organization Industrial Theory proposed by Schmalensee in 1989 and Martin in 2002 as the foundation for developing the hypotheses. This theory combines the structure-conduct-performance (SCP) paradigm with an empirical one. The SCP paradigm was initially popularized by Smirlock in 1985 and further refined by Berger and Hannan in 1989, incorporating concentration and profit analysis. The SCP paradigm suggests that a concentrated banking industry provides greater market power and market share for each bank, which can lead to increased profits (Chan, Koh, Zainir, & Yong, 2015). Furthermore, in this study, the bank profitability is measured using the return on asset proxy (ROA) and net interest margin (NIM) / net operating margin (NOM). Other bank-specific factors measured include third-party funding (TPF), capital adequacy ratio (CAR), non-performing loan (NPL), operating expenses to operating income (BOPO ratio), gross domestic product (GDP), inflation, and exchange rate.

Extensive researches have been conducted on banking profitability, resulting in the development of several empirical study categories. To begin, several studies have examined the bank's internal performance in terms of its profitability, as evidenced by the works of Adhikara, Jumono, & Mala (2016); El-Kassem (2017); Farkasdi, Septiawan, & Alghifari (2021); Ghouse *et al*. (2023); Kustina, Dewi, Prena, & Suryasa (2019); and Le & Ngo (2020). Second, there are investigations that delve into the impact of market power on the profitability, as demonstrated by studies conducted by Jumono, Abdurrahman, & Mala (2017); Khattak, Ali, & Khan (2022); Majid, Abdul, & Sulfian (2007); Malini & Putri (2020); Syamlan, Wahyuni, & Sudiharto (2023); and Talpur (2023) as well as researches on the efficiency and its relationship with profitability, such as Hassan, Mohamad, & Bader (2009); Ismail, Majid, & Rahim (2013); and Zuhroh, Ismail, & Maskie (2015). Third, further researches have explored the market power and efficiency in terms of the profitability, as seen in studies by Al Arif & Awwaliyah (2019); Ayadi & Ellouze (2013); González, Razia, Búa, & Sestayo (2019); Mala, Hosen, & Al Arif (2023); Mala, Rodoni, & Yaman (2018); Trinugroho, Risfandy, & Ariefianto (2018); and Widarjono & Anto (2020). Last, there are studies that focus on internal performance and macroeconomics, such as those conducted by Al-

Homaidi, Tabash, Farhan, & Almaqtari (2018); Hasanov, Bayramli, & Al-Musehel (2018); O'Connell (2023); Rahman, Yousaf, & Tabassum (2020); and Sufian & Kamarudin (2012). The novelty of this study expands the scope of observation to bank-specific factors and macroeconomic changes, as well as giving evidence of financial performance throughout the COVID-19 pandemic in relation to the banking profitability.

This paper is presented in five sections, where the first section discusses the background, the second section elaborates theoretical framework and empirical studies, the third section presents the data and methodology, the fourth section demonstrates the results and discussion, and the final section summarizes the conclusions, suggestions and recommendations.

2. THEORETICAL FRAMEWORK AND EMPIRICAL STUDIES

2.1. Profitability

Profitability ratios refer to values used to assess the overall management effectiveness by measuring the company's earnings (Kustina *et al.*, 2019). The ROA compares earnings (after tax) to total assets. The NIM represents the amount of profit a company earns after deducting all expenses, including the interest and taxes. In the Islamic banking, the NOM is utilized since the income is based on Sharia financial models. VanHoose (2010) stated that the ROA can be used to measure a bank's historical performance with a retrospective profitability approach, while the NOM is utilized to evaluate the present performance.

Berger, Klapper, & Turk-Ariss (2009) found that information disclosure, industry competition, and overall economic performance all have a major impact on the banking profitability. The 2008 financial crisis in the United States demonstrated that macroeconomic and regional economic shocks were the key determinants of bank profit persistence (VanHoose, 2010). Tan & Floros (2012) claimed that there are three different groups of determinants affect the banking profitability, including bank-specific, industry-specific, and macroeconomic variables. Further, Al-Homaidi *et al*. (2018) explained that the profitability of commercial banks is influenced by bank-specific factors and macroeconomic variables. The bank-specific factors include firm size, asset quality, capital adequacy, liquidity, operational efficiency, deposits, leverage, and asset management, while the macroeconomic variables include growth, inflation, interest rates, and exchange rates.

2.2. Market Power

Joe Bain argued that the extent of company concentration in an industry affect industry competition, which in turn affect corporate behavior, competitiveness, and performance (Mala, Hosen, & Al Arif 2023). The SCP paradigm emphasizes that big companies with high concentration levels will use their market power to gain substantial profits. Empirical studies on the banking profitability involving the market structure and market power in the banking industry were pioneered by Smirlock (1985). Banks with a larger market share and higher efficiency levels tend to dominate the industry (Smirlock, 1985). This approach was later followed by Berger & Hannan (1989) who incorporated price concentration and profit. The research findings strongly support the SCP paradigm.

Berger (1995) conducted a further research by introducing technical efficiency and scale efficiency variables. He included concentration levels and market share as hypotheses for the

market power and technical efficiency and scale efficiency as the hypotheses for efficiency. The results indicate that one market power variable and one efficiency structure variable are quite consistent with the SCP paradigm (Berger & Hannan, 1989).

Further, the CR denotes the number of the largest players in an industry, indicating the concentration of market power. Depending on the industrial structure, the CR can apply to four companies (CR 4), eight companies (CR 8), or sixteen companies (CR 16). Empirical studies analyzing the impact of market power on the profitability were conducted by Jeon & Miller (2005); Jumono *et al*. (2017); Jumono *et al*. (2019); Khan & Kutan (2021); Maghfuriyah, Azam, & Shukri (2019); Malini & Putri (2020); Talpur (2023); and Widarjono & Anto (2020). They revealed that the market power has a positive and significant effect on the profitability. Therefore, the first hypothesis that can be proposed is as follows:

H1: Market power has a positive and significant impact on the profitability of conventional and Islamic banks in Indonesia before and after the COVID-19 pandemic.

2.3. Third-Party Funding (TPF)

The TPF is the primary source of funds used to support the operational activities of Islamic banks. It refers to public funds that have been effectively collected by the Islamic banks, whether from individuals or corporate entities. The banks collect these funds through various instruments, such as demand deposits, savings, and time deposits. These funds subsequently become part of the bank's capital, recognized as equity, and are utilized to finance productive assets, as well as idle money (non-productive assets). Hermuningsih, Sari, & Rahmawati (2020) examined the relationship between the TPF and funding disbursement, which showed a significant influence. The banks must develop a variety of relevant strategies and policies to maximize the TPF. The goal is to achieve optimal profitability while minimizing risk and maintaining public trust by ensuring an adequate liquidity position. Researches conducted by Anggari & Dana (2020); Salman (2021); and Sondakh, Tulung, & Karamoy (2021) indicated that the TPF has a positive and significant relationship with the bank profitability. Thus, the second hypothesis that can be proposed is as follows:

H2: TPF has a positive and significant impact on the profitability of conventional and Islamic banks in Indonesia before and after the COVID-19 pandemic.

2.4. Capital Adequacy Ratio (CAR)

The CAR is a metric that measures how well the capital funds, derived from both internal sources and TPF, support the value of assets, including the diverse risks, such as financing, investments, securities, and claims on other banks. According to Bitar, Pukthuanthong, & Walker (2018), capital plays a crucial role in influencing both the risk profile and bank performance, serving as a protective tool against financial crises and loss absorption. Conversely, an increased capital allocation leads to reduced leverage.

The findings of Barth, Lin, Ma, Seade, & Song (2013) suggest that stricter capital requirements enhance the efficiency of banking operations, confirming earlier research by Banker, Chang, & Lee (2010) that capital ratios exhibit a positive correlation with overall efficiency, technical efficiency, and allocative efficiency. The interplay between capital allocation and efficiency has an impact on the bank profitability. Researches by Adnan, Lau, & Law (2021); Almunawwaroh & Marliana (2018); and Farkasdi *et al*. (2021) demonstrated a positive and

significant relationship between the CAR and bank profitability. Consequently, the third hypothesis that can be proposed is as follows:

H3: CAR has a positive and significant impact on the profitability of conventional and Islamic banks in Indonesia before and after the COVID-19 pandemic.

2.5. Operating Expenses to Operating Income (BOPO Ratio)

The BOPO ratio measures a bank's operational efficiency. The higher the BOPO ratio, the lower the bank financial performance or its operational inefficiency due to higher operational costs incurred (Christaria & Kurnia, 2016). Strong operational performance in a company signifies two crucial aspects: the company's sustainability and the company's potential to provide satisfactory returns, making it attractive to investors (Lee, 2023). In theory, this suggests that the BOPO ratio has a negative relationship with the bank profitability. Several empirical studies conducted by Christaria & Kurnia (2016); Suartini, Sulistiyo, & Indrianti (2018); and Syafrizal, Ilham, Muchtar, & Wardhiah (2023) demonstrated a negative and significant relationship between the BOPO ratio and bank profitability. Hence, the fourth hypothesis that can be proposed is as follows:

H4: BOPO ratio has a negative and significant impact on the profitability of conventional and Islamic banks in Indonesia before and after the COVID-19 pandemic.

2.6. Non-Performing Financing (NPF)

Financing risk is the risk that develops as a result of borrowers' inability to meet their obligations as required by the bank. This risk causes the bank to fail to recover principal repayments and/or profits from the financing or investment being done, generating cash flow problems and reducing the bank's liquidity (Firmansyah, 2015). The NPF is an indicator reflecting the extent of financing risk in a bank. It is a financial ratio that measures the size of financing risk or problem financing faced by the bank. The higher the NPF ratio, the lower the performance of the Islamic banks, as it reduces the bank's opportunity to generate income from the financing while decreasing its capital reserves. Empirical studies conducted by El-Kassem (2017); Hossain & Ahamed (2015); Johan (2021); and Purbaningsih & Fatimah (2018) have proven that the NPF has a negative and significant relationship with the bank profitability. Accordingly, the fifth hypothesis that can be proposed is as follows:

H5: NPF has a negative and significant impact on the profitability of conventional and Islamic banks in Indonesia before and after the COVID-19 pandemic.

2.7. Economic Growth

Economic growth, measured by the GDP, is the most reliable measure for assessing economic performance. Mankiw, Romer, & Weil (1992) defined the GDP as the market value of all final goods and services produced within an economy of a country over a specific period. It can be used to calculate the level of economic prosperity of a country by examining the increase in production from all production factors.

Real GDP is commonly used to assess economic prosperity because the output of goods and services produced is unaffected by changes in prices. The formation of GDP in the expenditure approach is heavily influenced by the levels of consumption, investment, government spending, as well as export and import transactions. These activities directly affect the funding supply, real sector, and the overall economy. Researches conducted by Sufian & Kamarudin (2012) and Yuan,

Gazi, Harymawan, Dhar, & Hossain (2022) showed that the economic growth has a positive and significant impact on the banking profitability. As a result, the sixth hypothesis that can be proposed is as follows:

H6: Economic growth has a positive and significant impact on the profitability of conventional and Islamic banking in Indonesia before and after the COVID-19 pandemic.

2.8. Inflation

Inflation has a significant impact on the banks in various aspects. In the conventional banks, loans and interest rate returns are heavily influenced by inflation rate forecasts (Tan & Floros, 2012). According to Boyd & Champ (2006), countries with higher inflation tend to have smaller banking and equity markets, which results in less loans disbursed by the banks. Researches on the relationship between inflation and banking profitability have yielded diverse results. Studies conducted by Hidayat, Alwahidin, & Aspiani (2020); O'Connell (2023); Sufian & Kamarudin (2012); Tan & Floros (2012); and Yuan *et al*. (2022) indicated that the inflation has a positive and significant impact on the banking profitability. Widarjono (2020) suggested that rising inflation exerts downward pressure on the profitability of Islamic banks. For this reason, the seventh hypothesis that can be proposed is as follows:

H7: Inflation has a positive and significant impact on the profitability of conventional and Islamic banking in Indonesia before and after the COVID-19 pandemic.

2.9. Exchange Rate

Exchange rate movements are influenced by a country's economic strength, as evidenced by the economic growth, changes in interest rates and investment returns, inflation rates, changes in exports and imports, and shifts in aggregate public preferences (Mankiw *et al*., 1992). The banks face exchange rate risks due to fluctuations in the exchange rate between domestic and foreign currencies, primarily affecting the valuation of bank assets, capital, and liabilities. Mismatches between the currencies and maturity of interest payments occur, as can speculative risks about whether the bank will make a profit or incur losses based on the direction of exchange rate movements. In the case of a long position, depreciation of the domestic currency results in net gains for the banks, while appreciation leads to losses. Conversely, in a short position, movements in the domestic exchange rate work in the opposite manner. Overall, the currency risks can lead to transaction, business, and revaluation or translation risks (Mohamadi, Shakeri, Eskandari, & Karimi, 2016).

A study by Fuadi, Hasibuan, Saparuddin, & Sugianto (2022) indicated that the exchange rate has a positive and significant impact on the banking profitability. Different findings from Tumewang, Isnaini, & Musta'in (2019) showed that the exchange rate does not significantly affect the banking profitability. Widarjono (2020) suggested that the exchange rate fluctuations suppress the level of profitability in Islamic banks, while Purwasih & Wibowo (2021) found both short-term and long-term positive impacts on the profitability of Islamic banks. As a result, the last hypothesis that can be proposed is as follows:

H8: Exchange rate has a positive and significant impact on the profitability of conventional and Islamic banks in Indonesia before and after the COVID-19 pandemic.

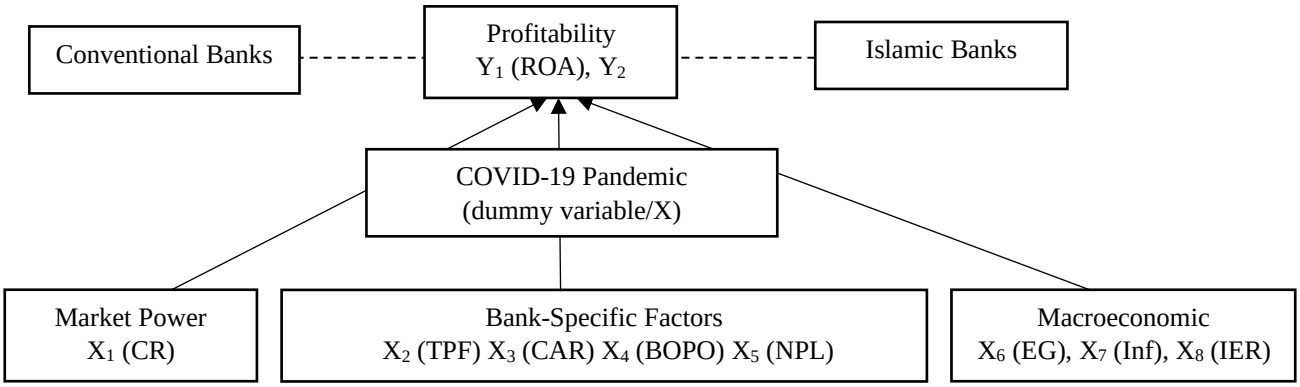

Figure 1. Conceptual Framework

3. RESEARCH METHODS

This study employed a combined dataset encompassing both time series and cross-sectional data, covering the period from the second quarter of 2014 to 2023. This research period was divided into two: the pre-COVID era (2014-2019), and the post-COVID era (2020-2023). The data was collected from the World Bank, BankScope, and bank financial reports. The sample was obtained using a purposive sampling method based on the CR of 12 leading banks in Indonesia. The banks studied consisted of 6 conventional banks (Bank Mandiri, Bank BRI, Bank BCA, Bank BNI, Bank BTN, and Bank CIMB Niaga), and 6 Islamic banks (Bank Syariah Indonesia (BSI), Bank Muamalat, Bank Aceh Syariah, Bank BTPN Syariah, Bank Mega Syariah, and Bank Panin Syariah). In the case of Bank BSI, the data was combined by averaging various financial ratios obtained from Bank BRIS, Mandiri Syariah, and BNI Syariah to compile the data for the period preceding the merger. This research employed panel data regression, using the profitability as the dependent variable, while the independent variables are the market power (CR 6), bank-specific factors (TPF, CAR, BOPO ratio, and NPF), and macroeconomic variables (GDP, inflation, and exchange rates). In this study, the profitability was measured using two primary proxies, namely the ROA and NIM/NOM. In addition, the CR 6 calculated the market share of each bank in relation to the entire banking industry, encompassing both conventional and Islamic banks. Dummy variables were also used to depict the performance before and after the COVID-19 pandemic in the model. The estimated equation model is as follows:

$$CB\pi_{it} = a_0 + CR_{it} + TPF_{it} + CAR_{it} + BOPO_{it} + NPL_{it} + GDP_{it} + Inf_{it} + ER_{it} + Dummy_{it} + e_{it} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots i\ (Conventional\ banks\ estimation\ model)$$

$$IB\pi_{it} = a_0 + CR_{it} + TPF_{it} + CAR_{it} + BOPO_{it} + NPF_{it} + GDP_{it} + Inf_{it} + ER_{it} + Dummy_{it} + e_{it} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots ii\ (Islamic\ banks\ estimation\ model)$$

Note: π_it = Profitability (ROA, NIM/NOM) ¶ CR = Market Power ¶ TPF = Third-Party Funds ¶ CAR = Capital Adequacy Ratio ¶ BOPO = Operating Expenses to Operating Income ¶ NPF/NPL = Non-Performing Financing/Loan ¶ GDP = Gross Domestic Product ¶ Inf = Inflation ¶ Exchange rate = Exchange Rate ¶ e = error.

There were several steps in the panel data regression to select the best model for analysis, either the Common Effect Model (CEM), Fixed Effect Model (FEM), or Random Effect Model (REM) (Baltagi, Song, & Koh, 2003). The model was selected through Chow, Hausman, and

Lagrange-Multiplier (LM) tests. These tests were followed by more steps, such as multicollinearity, heteroskedasticity, and normality tests.

4. DATA ANALYSIS AND DISCUSSIONS

4.1. Data Analysis

For the conventional banks, the results of Chow test show that the best model is the FEM. Meanwhile, the results of Hausman and LM tests confirm that the best model is the REM. On the other hand, for the Islamic banks, the results of Chow test show that the best model is the FEM, while the results of Hausman and LM tests suggest that the best model is REM. Based on the results of these tests, the REM is selected as the model used for analysis purposes. The following Table 1 presents the results of Chow, Hausman, and LM tests for the conventional and Islamic banks:

Table 1. Results of Chow, Hausman, and LM Tests

Model Selection Stages	Islamic Banks		Conventional Banks	
	ROA	**NOM**	**ROA**	**NIM**
1**. Chow Test (CEM vs FEM)** * Hypothesis - FEM is selected if the Chi-Square value is < 0.05. - CEM is selected if the Chi-Square value is > 0.05. Notes: - If FEM is selected, then proceed to the Hausman Test. - If CEM is selected, then proceed to the LM Test.	Prob. value Cross-section Chi-Square is 0.000	Prob. value Cross-section Chi-Square is 0.000	Prob. value Cross-section Chi-Square is 0.000	Prob. value Cross-section Chi-Square is 0.000
Result	**FEM**	**FEM**	**FEM**	**FEM**
2. **Hausman Test (FEM vs REM)** * Hypothesis - FEM is selected if the Chi-Square value is < 0.05. - REM is selected if the Chi-Square value is > 0.05. Notes: - If FEM is selected, then no further test required - If REM is selected, then proceed to the LM Test	Prob. value Cross-section Chi-Square is 0.000	Prob. value Cross-section Chi-Square is 0.000	Prob. value Cross-section Chi-Square is 0.000	Prob. value Cross-section Chi-Square is 0.000
Result	**REM**	**REM**	**REM**	**REM**
3. **LM Test (FEM vs REM)** *Hypothesis - REM is selected if both value is < 0.05. - CEM is selected if both value is > 0.05. Notes: - No further test required if either REM or CEM is selected.	Both Breusch-Pagan value is 0.000	Both Breusch-Pagan value is 0.000	Both Breusch-Pagan value is 0.000	Both Breusch-Pagan value is 0.000
Result	**REM**	**REM**	**REM**	**REM**
Final Decision	**REM Model**	**REM Model**	**REM Model**	**REM Model**

Source: Processed Data (2023)

The following Table 2 show the results of REM analysis in the conventional banks. The profitability of conventional banks, proxied by the ROA and NIM, is heavily influenced by the market power, bank-specific factors, and macroeconomic variables. As proxied by ROA, the profitability is influenced by the BOPO ratio, NPL, GDP, and inflation; while the market power, TPF, CAR, and exchange rate do not have an impact on the ROA. The R^2 value is 0.8209%, indicating that the model can explain 82% of the variance and has a strong relationship. Further, the F-test results show that all explanatory variables collectively have a significant impact on the ROA.

Further, as proxied by NIM, the profitability is significantly influenced by the CR and inflation; and the TPF, CAR, BOPO ratio, NPL, GDP, and exchange rate do not have a significant impact on the NIM. The R^2 value is 0.5857%, indicating that 58.57% of the independent variables can explain the variances, while the rest 41.43% can be explained by other variables not included in the study. The F-test results show that all explanatory variables collectively have a significant impact on the NIM. In addition, the dummy variable (COVID-19 pandemic) is shown to have a negative and significant impact on the profitability, both on the ROA and NIM.

Table 2. REM in Conventional Banks

Conventional Banks	ROA	t-Statistic	Prob.	NIM	t-Statistic	Prob.
C	8.174781	18.64917	0.0000	6.439799	8.232733	0.0000
CR	-0.014857	-1.458790	0.1461	-0.057424	-2.529068	0.0122*
TPF	0.001251	0.486488	0.6271	0.006039	1.515966	0.1311
CAR	0.009724	1.104019	0.2709	0.000105	0.007599	0.9939
BOPO	-0.065585	-17.59439	0.0000*	0.002490	0.425818	0.6707
NPL	-0.231348	-6.094066	0.0000*	-0.061839	-1.042698	0.2983
GDP	-0.019693	-2.057275	0.0409*	0.017551	1.176580	0.2407
INF	0.035134	2.684789	0.0078*	0.070386	3.471173	0.0006*
ER	0.007689	1.716383	0.0876	-0.000677	-0.097497	0.9224
DUMMY	-0.371101	-7.230537	0.0000*	-0.762334	-9.565273	0.0000*
		ROA			**NIM**	
R-Squared		0.820986			0.585717	
Adjusted R-Squared		0.813165			0.567617	
F-statistic		104.9722			32.36051	
Prob. (F-statistic)		0.000000			0.000000	
Durbin-Watson Stat.		1.068864			0.436936	
Total Observation: 216						
*Significant at 5%						

Source: Processed data (2023)

Table 3 below show the results of REM analysis in the Islamic banks. The profitability – as proxied by ROA and NOM – is influenced by the bank-specific factors and macroeconomic variables. As proxied by the ROA, the profitability is significantly affected by the CAR, BOPO ratio, and inflation; while the market power, TPF, NPF, GDP, and exchange rate do not have an impact on the ROA. The R^2 value of this model is 0.3770, indicating that the model only explains 37.7% of the variance, and the rest 62.3% can be explained by other variables not included in the study. The results of the F-test show that all explanatory variables collectively have a significant impact on the ROA.

Furthermore, as proxied by the NOM, the profitability is significantly influenced by the CAR and inflation; while the CR, TPF, BOPO ratio, NPF, GDP, and exchange rate do not have a significant impact on the NOM. The R^2 value of this model is 0.2177%, indicating that 21.77% of the independent variables can explain the main variable and the rest 78.23% can be explained by

other variables not included in the study. The F-test results show that all explanatory variables collectively have a significant impact on the NOM. In addition, the dummy variable (COVID-19 pandemic) has a negative and significant impact on the profitability, both on the ROA and NOM.

Table 3. REM in Islamic Banks

Islamic Banks	ROA	t-Statistic	Prob.	NOM	t-Statistic	Prob.
C	4.427807	3.867234	0.0001	0.908981	0.431561	0.6665
CR	0.004643	0.020480	0.8209	-0.001075	-0.033077	0.9736
TPF	0.000420	0.002109	0.8424	-0.002382	-0.586267	0.5583
CAR	0.145554	0.022747	0.0000*	0.186629	4.381324	0.0000*
BOPO	-0.049647	0.008665	0.0000*	-0.023857	-1.436326	0.1524
NPF	-0.070152	0.101594	0.4906	-0.346983	-1.780209	0.0765
GDP	0.002655	0.059746	0.9646	-0.204748	-1.781350	0.0763
INF	-0.180379	0.083281	0.0315*	0.621638	3.869972	0.0001*
RE	0.030051	0.029120	0.3033	0.053639	1.003851	0.3166
DUMMY	-0.816808	-2.284847	0.0233*	-1.569448	-2.299039	0.0225*
		ROA			**NOM**	
R-Squared		0.377041			0.217740	
Adjusted R-Squared		0.349825			0.183563	
F-Statistic		13.853330			6.371052	
Prob. (F-Statistic)		0.000000			0.000000	
Durbin-Watson Stat.		1.332698			1.296869	
Total Observation: 216						
*Significant at 5%						

Source: Processed data (2023)

4.2. Discussions

The profitability of both conventional and Islamic banks in Indonesia was greatly influenced by the COVID-19 pandemic. In the conventional banks, the average profitability growth proxied by the ROA was 2.67% per year, and only 2.13% during the COVID-19 pandemic (an average decrease of -0.54%). Meanwhile, as proxied by the NIM, the profitability had a higher average decrease (-0.95%). Before the COVID-19 pandemic, it grew by 5.92% and decreased to 4.97% during the COVID-19 pandemic. In the Islamic banks, the average profitability growth proxied by the ROA was 0.41%. Before the COVID-19 pandemic, it grew by 2.35%, and by 2.77% after the COVID-19 pandemic. As proxied by the NOM, the profitability had a negative growth of -0.81% per year. Before the COVID-19 pandemic, the growth reached 3.51%, and only 2.70% after the COVID-19 pandemic.

Overall, the COVID-19 pandemic had a negative impact on the profitability as proxied by the ROA and NIM. This finding supports the hypothesis testing which confirms that the COVID-19 pandemic had a negative and significant impact on the profitability. These findings are in line with researches conducted by Ramlall (2022); Shabir, Jiang, Wang, & Işık (2023); and Taylor (2022), which found that the COVID-19 pandemic reduced the bank profitability, both due to decreased credit demand and tighter lending standards (Li, Feng, Zhao, & Carter, 2021).

The COVID-19 pandemic had the most significant negative impact on the decline in bank profitability during the pandemic. At the start of the COVID-19 pandemic, bank reports indicated an increase in risk, as reflected by the rising NPL, followed by a significant decrease in the amount of financing disbursed. The NIM experienced a greater decline than the ROA. This suggested that the Indonesian banks' operational efficiency during the COVID-19 pandemic was not as strong as in other countries, such as India (Gulati *et al*. 2023) and European countries. Simoens & Vennet

(2022) explained that countries with low systematic banking risk, high liquidity buffers, and cost efficiency were in better positions to mitigate significant shocks during the COVID-19 pandemic. The impact of the COVID-19 pandemic on the Islamic banks appeared to be more significant, as evidenced by the constant parameter value compared to the conventional banks.

The market power, measured by the CR, had different effects on the profitability of conventional and Islamic banks. In the conventional banks, the market power has a negative and significant impact on the NIM and an insignificant impact on the ROA. In contrast, in the Islamic banks, it has a positive impact on the ROA and a negative impact on the NOM. These findings contradict the SCP paradigm proposed by Bain, which stated that large companies with high concentration levels would gain substantial profits. During the COVID-19 pandemic, the Islamic banks had higher CR increase, while it tended to be stagnant in the conventional banks. In the conventional banks, the market power was such a determinant of profitability, but the direction of the relationship contradicts empirical studies conducted by Khan & Kutan (2021); Maghfuriyah *et al*. (2019); Mala *et al*. (2023); and Widarjono & Anto (2020). This condition was based on the industry structure and competitive nature of the conventional banks, leading to a monopolistic competition. Intense competition among the banks tended to reduce the profits of each bank (Ye, Xu, & Fang, 2012) and would lead to structural efficiency. On the other hand, in the Islamic banking industry, there was a relatively high concentration, with four banks dominating the Islamic banking sector, accounting for 59-62% of total assets and deposits (Al Arif, 2017), categorizing it as an oligopolistic competition (Malini & Putri 2020).

During the COVID-19 pandemic, there was an increase in the TPF in both types of banks. In the conventional banks, before the COVID-19 pandemic, the TPF growth ranged from 4-7% per year, and after the COVID-19 pandemic, there was an increase of more than 11% per year. In the Islamic banks, the TPF's growth was stable in the range of 11-15% per year. However, the TPF is found to have a positive and insignificant impact on the profitability in both types of banks. This finding is consistent with empirical studies conducted by Salman (2021) and Sondakh *et al*. (2021), which showed that the TPF did not directly affect the profitability. It was because both types of banks had not been able to maximize the distribution of funds in the form of credit. This was also confirmed by the loan-to-deposit ratio (LDR) value, which ranged from 70-80%. During the COVID-19 pandemic, the LDR value of conventional banks decreased by an average of -2.05% and by -3.38% in the Islamic banks. From the cost perspective, the idle money would reduce the profitability because there was an interest cost that must be paid by the bank to depositors.

On the other hand, during the COVID-19 pandemic, the CAR experienced an increase in both types of banks, with the Islamic banks recording a CAR increase of 1.51% and 0.43% for the conventional banks. The results of this study show that the CAR has a positive and insignificant impact in the conventional banks. However, in the Islamic banks, the CAR has a positive and significant impact on the ROA and NOM. These findings support previous research findings by Adnan *et al*. (2021); Almunawwaroh & Marliana (2018); and Farkasdi *et al*. (2021), who indicated that the Islamic banks had better performance in terms of capital management and were able to generate higher earning assets to achieve the net operating profit. The increase in CAR would cover the financing, securities, and other operational losses, leaving more room for profit growth.

Furthermore, this study confirms that the BOPO ratio, representing the operational efficiency, has a negative and significant impact on the profitability as measured by the ROA in both types of banks. This finding confirms previous empirical studies conducted by Christaria &

Kurnia (2016); Suartini *et al*. (2018); and Syafrizal *et al*. (2023). In addition, the impact of BOPO ratio on the profitability, as measured by the NOM, is negative and insignificant on the Islamic banks. In contrast, in the conventional banks, it has a positive and insignificant impact. The ROA, as a proxy for profitability, was more responsive to changes in the efficiency as it represented overall profit, while the NIM provided a more specific profit indicator. In this regard, the operational efficiency performance in the Islamic banks had a greater contribution compared to the conventional banks. The Islamic banks had a larger operational cost structure due to the need for internal Sharia compliance monitoring units, provisions for income allocation for zakat (charity), and certain income that might not be recognized as the company profit.

Moreover, the COVID-19 pandemic had different impacts on the risk of NPL in both types of banks. In the conventional banks, the NPL have a negative and significant impact on the profitability as measured by the ROA. This finding was evidenced on the trend of increasing NPL risk from 2.5% in 2019 to 3.06% in 2020 and 3.02% in 2021. This finding confirms previous researches conducted by El-Kassem (2017); Hossain & Ahamed (2015); Johan (2021); and Purbaningsih & Fatimah (2018). Further, in the Islamic banks, the NPL has a negative and insignificant impact on the profitability. This finding was evidenced on the trend of decreasing NPL risk in the Islamic banks, even during the COVID-19 pandemic. This finding supports previous researches by Abusharbeh (2014); Petria, Capraru, & Ihnatov (2015); and Said & Ali (2016). In this study, the NPL does not have a significant impact on the bank profitability as proxied by the NIM in both types of banking. This proved that both types of banks were not yet operating at a high level of efficiency. The increase in NPF would reduce the potential income that the bank would earn from its investments. On the other hand, the banks had risks of losing current assets due to the inability of customers to repay the investment funds. The higher the NPF risk, the lower the bank's profitability. These findings are also in line with the researches of Addi & Bouoiyour (2023) and Mobarek & Kalonov (2014), which found that the conventional banks had higher risks compared to the Islamic banks due to the differences in financing model characteristics.

Additionally, during the COVID-19 pandemic, there was a decline in the economic growth trends that affected the banking profitability. The results of hypothesis testing show that the economic growth has a negative and significant impact on the profitability, as proxied by the ROA in the conventional banks. This finding is in contrast to the ones found by Al-Harbi (2019); Sufian & Kamarudin (2012); and Yuan *et al*. (2022). Large capitalization driven by the economic growth affected the banking profitability, because the banks operated inefficiently, as observed in China (Tan & Floros 2012).

A different perspective was presented by Singh & Sharma (2016), who revealed that the economic growth would reduce banking liquidity in developing countries, thereby reducing the banking profitability. In the Islamic banks, the economic growth is found to have a positive and insignificant impact on the profitability, as proxied by the ROA. This finding supports empirical studies conducted by Islam & Rana (2019) and Rani & Zergaw (2017). The profitability, as proxied by the NIM, was higher than that of the Islamic banks during the period of economic growth. Floating interest rate of loan contracts benefitted the conventional banks more than the Islamic banks. However, fixed financing contracts provided no additional benefits. The economic growth boosted the borrower income and improved their ability to repay. The economic growth, on the

other hand, drove an increase in demand for banking services, such as clearing services, bank guarantees, foreign exchange, and other services, thereby boosting the NIM.

Likewise, Indonesia's inflation rate remained relatively low and stable during the period 2014-2019, averaging 4.24%. While after the COVID-19 pandemic, it ranged from 2-3%. The inflation has different impacts on the two types of banks. It has a positive and significant impact on the profitability of conventional banks. This finding strengthens previous empirical researches conducted by Hidayat *et al*. (2020); O'Connell (2023); Wasiuzzaman & Tarmizi (2009); and Yuan *et al*. (2022). In response to rising inflation, monetary authorities increased the interest rates. The conventional banks benefitted more from the disparity between the loan interest rates, while the deposit interest rates tended to remain stable. In the Islamic banks, the inflation has a negative and significant impact on the profitability. The financing contracts based on the profit-sharing (*mudharabah*), sales (*murabahah*), and lease (*ijarah*) principles tended not to change during the contract periods when the inflation increased. This finding is supported by Widarjono (2020), showing that inflationary increases reduced the profitability of Islamic banks.

Furthermore, this study proves that the exchange rate movement during the COVID-19 pandemic was dynamic, with a trend of depreciation of the Indonesian Rupiah depreciating against the foreign currencies. At the start of COVID-19 pandemic, there was a depreciation of the exchange rate against Dollar by up to 10% from January to April 2020. The results of hypothesis testing show that the exchange rate has a positive and insignificant impact on the profitability in both types of banks, whether measured by the ROA or NIM. This finding supports previous findings by Tumewang *et al*. (2019). The foreign exchange transactions contributed very little to the banking revenue structures. The creditors' transactions and demand for financing in the foreign currencies were relatively low, because the banking operations in Indonesia primarily served domestic customers. In this condition, the consumers and business loan demand might fall, thereby reducing the profit-sharing income.

5. CONCLUSIONS, SUGGESTIONS, AND LIMITATIONS

This study has added empirical evidence to the impact of market power, bank-specific factors, and macroeconomic changes on the profitability of both conventional and Islamic banks. The COVID-19 pandemic has had a negative impact on the profitability, as measured by the ROA and NIM proxies, for both types of banks, with the Islamic banks experiencing a more significant impact compared to the conventional banks. During the COVID-19 pandemic, there are increased credit risks, decreased financing disbursement, and reduced operational efficiency. The TPF, BOPO ratio, exchange rate, and inflation have relatively similar impacts on the profitability of both types of banks. The market power, NPL, CAR, and GDP have different impacts on the two types of banks. The variations in industry competitiveness and operational characteristics between the conventional and Islamic banks result in different contributions from the market power, bank-specific factors, and macroeconomic variables to the profitability of these two types of banks.

However, this study has two major limitations that provide opportunities for future researches. First, this study used the CR as a variable to describe the market power, which failed to explain the competition between both types of banks. Therefore, future researches are suggested to use other market power indicators. Second, this study employed the average data from multiple banks to obtain the data for Bank BSI prior the merger, which had the potential for deviations.

Thus, future researches are suggested to consider other variables, such as bank efficiency and other internal and external factors, to obtain more comprehensive results.

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