



PROBABILISTIC PREDICTION OF THE FINANCIAL PERFORMANCE OF CONVENTIONAL AND ISLAMIC BANKS DURING THE COVID-19 PANDEMIC

Nurma Waddah¹, Moh. Khoiruddin²

^{1,2}Department of Management, Faculty of Economics and Business, Universitas Negeri Semarang, Semarang, Indonesia

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This study aims to predict the probability of achieving the financial performance of conventional and Islamic banks listed on the Indonesia Stock Exchange during the Covid-19 pandemic. This study uses Return on Assets (ROA) as the dependent variable, E-Banking implementation variables; FinTech growth, GDP growth; inflation; interest rates; Capital Adequacy Ratio (CAR), Non Performing Loan (NPL) and Non Performing Financing (NPF); Operating Expenses to Operating Income (BOPO) as independent variables. This study uses correlational research with a quantitative approach. The research sample consists of 47 banks listed on the Indonesia Stock Exchange, with 43 banks operating conventionally and 4 banks operating sharia. Documentation and literature study methods were used to collect data which were then analyzed using logistic regression. The results showed that the variables that are able to predict the probability of ROA occurrence in conventional banking are the application of E-Banking, NPL (n) and BOPO, while in Islamic banking the variables of FinTech growth, Inflation and BOPO are variables that are able to predict the probability of ROA occurrence.

correspondence Address:
Unnes, Sekaran, Kec. Gn. Pati, Kota Semarang, Jawa
Tengah 50229
E-mail: khoiruddin@mail.unnes.ac.id

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INTRODUCTION

Since being declared a global pandemic on March 11, 2020, the Indonesian government has implemented restrictions on community mobility in an effort to suppress the spread of Covid-19. Several policies issued by the Indonesian government itself have had a considerable impact on both the health and economic sides. The banking sector is one of the sectors that has felt a significant impact from the Covid-19 pandemic. Profitability ratio is one of the ratios that can be used to measure the financial performance of banks. Data sourced from the Financial Services Authority (OJK) shows that the performance of banking profitability calculated using Return on Assets (ROA) has fluctuated significantly.

During this period, several banks in Indonesia experienced a decline in ROA as a result of increased provisioning to anticipate bad debts. The decline in bank ROA reached a minus

value, where a negative ROA value indicates the bank's inability to generate profits from its assets. On the other hand, some banks were able to keep their ROA positive and managed to maintain their profitability. Overall, although some banks were able to maintain their performance, in general the banking sector in Indonesia experienced profitability pressures during the Covid-19 pandemic. One of the causes of the significant decline in ROA is the declining lending. Based on data published by Bank Indonesia, it can be seen that from April 2020 to March 2021, the distribution of credit funds in Indonesia has decreased rapidly, even touching -4.13%.

The hampering of people's mobility and economic activities has caused the use of gadgets and computers to become more intense because they replace activities that should be done in person. The Covid-19 pandemic has forced digital transformation to accelerate and disrupt the

business and economic sectors. Digital transformation in the banking industry is carried out by providing improvements to its services, one way is to provide electronic banking services.

E-banking is one type of information technology adopted by banks to assist in developing business operation processes as a step to improve bank performance in maintaining bank life (R. A. P. Sari & Hayati, 2023). Integrating technology into banking operations can improve process efficiency. E-banking provides many benefits for banks, one of which is increasing fee-based income and reducing operational costs when compared to conducting transaction services through relatively larger branch offices to pay employees, building rent, security, electricity and so on (Amali & Selvi, 2021).

In addition to e-banking, one form of technological development in the financial sector is Financial Technology (FinTech). The National Digital Research Center (NDRC) defines financial technology as an innovation from the financial services sector with the help of modern technology, giving rise to the terms finance and technology (D. N. Sari, 2020). The online lending platform or often called peer to peer lending (P2P Lending) is one of the clusters of FinTech that provides services in the form of loans that can be made easily and quickly compared to other financial services industries such as banking. This is the reason why the P2P Lending platform is a platform that is growing quite rapidly in Indonesia. The ease of the process of borrowing funds in FinTech is a threat to banks in Indonesia.

Restrictions on people's mobility led to the contraction of the Indonesian economy. Banks themselves in their operational activities cannot be separated from macroeconomic influences, one of which is the level of economic growth. Economic growth itself is a representation of the increase in real income which is usually measured using Gross Domestic Product (GDP) data. GDP illustrates the quality of monetary movements in general (Pratama & Anis, 2022). GDP can be used to measure the average level of individual welfare, where an increase in GDP will have an impact on increasing people's income so that people's ability to save will also increase (Selayan et al., 2023). This will affect the profitability of banks.

Inflation according to Bank Indonesia is a general and continuous increase in the prices of goods and services within a certain period of time. Throughout the Covid-19 pandemic, the inflation rate in Indonesia has fluctuated. Bank Indonesia itself emphasizes the importance of controlling inflation because high and unstable inflation can have a negative impact on the socio-economic conditions of the community. High inflation rates can affect the financial performance of banks as seen from the decline in people's standard of living so that when inflation occurs, interest rates will

also rise, the impact causes people to be reluctant to borrow funds from the bank which in turn the bank's profitability level will also decline.

Another macro variable that can affect financial performance is interest rates. Bank Indonesia as the central bank has the task of regulating the benchmark interest rate which serves to control the money supply in the country's economy. Fisman Adisaputra (2021) states that the high interest rate (BI Rate) is an important factor for banks and has an influence on people's interest and desire to invest their funds through banking products, the more funds invested by the public, the bank has a greater ability to channel these funds in the form of credit, and the more credit channeled will have an impact on the income earned by the bank (Makmur et al., 2023).

Earning assets for banks are loans. Credit itself has enough risk to affect the financial performance of banks. The amount of risk from credit is shown in the form of Non Performing Loan (NPL) (Adha & Reviandani, 2024). NPL is one of the indicators to assess the performance of a bank's function, because a high NPL is an indicator of a bank's failure to manage its business (Dwihandayani, 2017). The efficiency ratio used to measure the ability of bank management to control operating costs against operating income is called the BOPO ratio (Wahyuningsih & Gunawan, 2017). According to Dendawijaya (2009), the lower the BOPO, the more efficient the bank is in controlling its operating costs, with cost efficiency, the greater the profit the bank will get (Tamin et al., 2022). Capital adequacy is the ability of the bank to provide funds used in its business development needs and protect against the risk of loss caused by operational activities carried out (Lailia & Ardiana, 2024). Own capital adequacy can be measured using the Capital Adequacy Ratio (CAR) ratio.

This study was conducted to answer the question whether the factors of e-banking implementation, FinTech growth, macroeconomic factors, and internal banking performance ratios are able to explain the prediction of the probability of banking financial performance proxied by Return on Assets (ROA). Empirically, the purpose of this research is to test how the probability of the dependent variable occurs and determine the most effective variable in predicting positive and negative banking ROA values. Predicting positive and negative ROA values is useful for assessing the bank's financial performance and management's ability to manage assets efficiently. This prediction can help stakeholders, especially management, to make the right decisions regarding strategies and policies when a similar situation occurs.

Financial Intermediation Theory

The theory of financial intermediation was proposed by Jhon Gurley (1956), this theory

explains the function of financial institutions as intermediaries between lenders and borrowers who mobilize savings and ensure efficient allocation among competing activities (Rosalia & Sugiyanto, 2017). Financial intermediation in the banking industry can be defined as a process by which banks take depositors' money from those in surplus and lend it to borrowers in deficit (Putri Dwi Wahyuni et al., 2022)

According to modern financial intermediation theory, financial intermediaries are active because market imperfections prevent savers and investors from optimally trading directly with each other. Market imperfections themselves result from information asymmetry between savers and investors. Financial intermediaries especially banks have the role of delegated agents and supervisors to address the gap between primary information depositories and investors. This is because they have a comparative information advantage over mainstream savers and investors. One of their basic functions is to screen and match investors on behalf of savers, which allows for transaction costs that they charge to both parties. They also help bridge the maturity gap between savers and investors and facilitate payments between economic parties by providing payment, settlement and clearing systems (Scholtens & Van Wensveen, 2003). Banking's financial performance itself is very dependant on how well the bank carries out its intermediation function. if Banks can channel funds effectively then their financial performance will be strong. This efficient intermediation can have a positive impact on economic growth and development.

This theory is relevant to this study because Financial Intermediation Theory is able to integrate internal performance and macroeconomic variables to provide a comprehensive picture of the probability of financial performance. Banks that are able to manage risk and achieve operational efficiency well will be better able to survive and thrive in various macroeconomic conditions. Several monetary or fiscal policies issued by the government can influence macroeconomic conditions which can indirectly impact banking performance. This theory can help to explain how macroeconomic conditions can influence banking financial performances in Indonesia. Good macroeconomic conditions can support banking financial performance to be strong, while poor macroeconomic conditions can increase risks and challenge bank stability which will ultimately have an impact on the economy as a whole. Financial Intermediation Theory can also help explain how internal banking performance impacts banking profitability. Internal performance such as high CAR and low NPL and BOPO show that the bank can manage risk well,

which allows the bank to carry out its intermediation function more effectively.

Disruptive Innovation Theory

Disruptive innovation theory was proposed by Bower and Christensen (1995) in "Disruptive Technologies: Catching the Wave", and has since undergone substantial refinement, most notably shifting from "disruptive technologies" to "disruptive innovation" in Christensen and Raynor's influential 2003 work (Lile et al., 2024). The theory of disruptive innovation explains how a phenomenon that occurs from an innovation can change existing market conditions. The innovation offered is in the form of high effectiveness and efficiency, where if the company is unable to adapt to the existing conditions, the company's operations can be disrupted which will ultimately harm the company, especially in the era of the industrial revolution 4.0.

Disruptive Innovation Theory is based on the assumption that markets do not always develop linearly but can experience major changes and occur suddenly and the assumption that cheaper innovations can change market demand cheaper ones can change market demand and displace existing goods or services. Disruptive Innovation is not the process of improving or improving products for the same target group, but rather involves technology used to make product easier to use and available to the market (Sabina & Handajani, 2024).

This theory is relevant to this study because the theory can explain how the application of E-Banking is an example of disruptive innovation which may initially be aimed at customers who are more technologically literate. But along with technological developments and wider internet adoption, e-banking itself has changing the way banks provide services. Banks that can utilize e-banking effectively have great opportunities to increase growth and financial performance.

This theory can also explain how FinTech as a disruptive innovation can change the landscape of the banking industry and can affect operational efficiency and services which can ultimately effect banking financial performance. FinTech is often considered a disruptive innovation because FinTech often offers financial services that are faster, cheaper and more accessible than services offered by conventional banks. FinTech itself can grow quickly because FinTech's focus is on market segments that may not be well served by traditional banks. This could lead to a loss of market share in certain segments, especially in simpler services such as payments, remittances or microloans. The impact caused by the growth of FinTech itself is the possibility of conventional banks experiencing a decline in profitability. In the short term, banking may face significant challenges from disruption caused by

FinTech, which could result in a decline in financial performance. However, in the long term, banks that are able to adopt this innovation can take advantage of new opportunities that serve to improve financial performance.

Hypothesis Development

Djiwandono & Hasanah (2023) explained that e-banking services refer to facilities for customers to obtain information, communicate and transact through electronic media. For banks, the use of e-banking has the benefit of reducing operational costs. Research conducted by Kavila & Kavila & Kilika (2023) stated that the application of e-banking proxied by mobile banking, agency banking, internet banking, and ATM banking to financial performance proxied by ROA has a positive and significant impact. In the modern world and global environment, e-banking strategies are considered as the main tool for banks to survive in a fast and dynamic industry. In line with research conducted by (Augustin & Prosper, 2023) which states that e-banking has a contribution to banking performance even though there are several challenges that affect it. The utilization of e-banking can be optimal if the number of customers who use e-banking can also increase. If the utilization of e-banking is not optimized by customers, it will have an impact on banking operational risk. During the Covid-19 pandemic, the number of e-banking users continues to increase and will certainly affect the financial performance of banks that adopt e-banking.

- H1: The implementation of e-banking is able to predict the probability of achieving the financial performance of conventional banks listed on the Indonesia Stock Exchange during the Covid-19 pandemic.
- H2: The implementation of e-banking is able to predict the probability of achieving the financial performance of Islamic banks listed on the Indonesia Stock Exchange during the Covid-19 pandemic.

P2P lending is a form of information technology development in the financial services sector that is able to provide loans quickly when compared to other financial institutions. The growth of P2P lending itself and the convenience provided by P2P lending can be a threat to banking institutions if banking institutions are unable to adapt to current technological developments. In research conducted by Hasni & Ardiansyah (2022) shows that the number of financial technology transactions has a positive influence on ROA. In line with research conducted by Sudirman et al. (2023) shows that the P2P lending variable has a positive impact on the financial performance of Islamic banks in

Indonesia. This shows that the growth of FinTech in Indonesia can be a trigger for banks in Indonesia to improve the quality of their services. Financial technology acts as a support for financial penetration where FinTech can help banks solve the problem of underbanked people. Fitri Pertiwi & Solehudin (2023)) in their research revealed that the presence of Fintech does not change the financial performance of conventional banks with the FinTech phenomenon can encourage banks to innovate in technology.

- H3: The growth of FinTech P2P lending is able to predict the probability of achieving the financial performance of conventional banks listed on the Indonesia Stock Exchange during the Covid-19 pandemic.
- H4: The growth of FinTech P2P lending is able to predict the probability of achieving the financial performance of Islamic banks listed on the Indonesia Stock Exchange during the Covid-19 pandemic.

According to Ady (2019) GDP is the amount of added value generated by all business units in a particular country. GDP is an indicator that describes the economic condition of a country. Research conducted by Mwenda et al. (2023) found that GDP has a positive impact on the company's financial performance. GDP has an influence on the company's financial performance due to the company's operations around macroeconomic conditions. This is in line with research conducted by Jallow (2023) which states that there is a positive relationship between GDP and ROA. The positive relationship between GDP and ROA implies the role of GDP in determining the growth of a country so that when economic conditions increase, the growth of other economic sectors such as banking will also increase. Suteja and Ginting (2014) revealed that the GDP growth rate is used to see how economic growth in a country affects the level of banking profitability, because economic activity will affect banking performance, including affecting the demand and supply of credit and third party fund deposits, which in turn will affect credit quality (Putri, 2018).

- H5: GDP growth is able to predict the probability of achieving the financial performance of conventional banks listed on the Indonesia Stock Exchange during the Covid-19 pandemic.
- H6: GDP growth is able to predict the probability of achieving the financial performance of Islamic banks listed on the Indonesia Stock Exchange during the Covid-19 pandemic.

Inflation according to Satria (2019) is an economic situation that occurs when the amount of currency in circulation is more than the value of goods and services in real terms which has an

impact on the decline in the value of the currency compared to the soaring prices of goods or services. An increase in inflation will increase the potential for non-performing financing and will reduce operating income so that banking efficiency will fall (Asngari, 2013). Research conducted by (Saputri, 2021) revealed that the inflation rate variable has a significant and negative effect on banking ROA. This is in line with research conducted by (Nadzifah & Sriyana, 2020) which reveals that inflation in the short term has a significant effect in a negative direction. This is due to the increase in inflation affecting the decline in banking profits. Inflation causes operating costs to increase so that conventional banking profitability can decrease. In Islamic banking, inflation does not reduce deposits or savings in Islamic banking.

- H7: Inflation is able to predict the probability of achieving the financial performance of conventional banks listed on the Indonesia Stock Exchange during the Covid-19 pandemic.
- H8: Inflation is able to predict the probability of achieving the financial performance of Islamic banks listed on the Indonesia Stock Exchange during the Covid-19 pandemic.

The increase in the BI rate will be followed by an increase in deposit interest so that there is a decrease in third party funding sources which have an impact on decreasing the profitability of Islamic Banks (Ady, 2019). Increasing interest rates may have a good impact on customer savings but for financing provided by banks it will have a negative impact. Fisman Adisaputra (2021) reveals that the high interest rate (BI Rate) is an important factor for banks and has an influence on people's interest and desire to invest funds through banking products, the more funds the community invests, the bank has a greater ability to channel these funds in the form of credit, and the more credit channeled will have an impact on the income earned by the bank (Makmur et al., 2023). However, in the view of Islamic economic theory, Islamic banking is not affected by changes in interest rates because in carrying out its operational activities Islamic banks do not apply interest. Research conducted by Makmur et al. (2023) shows that the interest rate variable does not have a positive influence on ROA. Research conducted by Masradin (2023) revealed that there is a positive relationship between interest rates and ROA at PT Bank Maspion Indonesia, Tbk. Research conducted by Nadzifah & Sriyana (2020) shows that the BI Rate has a negative and insignificant effect on the profitability of conventional and Islamic banking.

- H9: Interest rates are able to predict the probability of achieving the financial performance of conventional banks listed

on the Indonesia Stock Exchange during the Covid-19 pandemic.

- H10: Interest rates are able to predict the probability of achieving the financial performance of Islamic banks listed on the Indonesia Stock Exchange during Covid-19.

CAR is a capital adequacy ratio that has a function to accommodate the risk of loss faced by the bank. According to Nadzifah & Sriyana (2020) the size of CAR does not necessarily affect the size and size of a bank's profits. Research conducted by Purnomo (2023) showed that CAR partially had no negative impact on ROA during the Covid-19 pandemic. The higher the CAR will be in line with the improved risk tolerance of a credit. A high CAR can finance operations and contribute to profitability. However, during the Covid-19 pandemic, banking CAR decreased so that the capital for professional activities was not large. This is in line with research conducted by Syafrizal et al. (2023) which revealed that CAR partially has no impact on ROA.

- H11: CAR ratio is not able to predict the probability of achieving the financial performance of conventional banks listed on the Indonesia Stock Exchange during the Covid-19 pandemic.
- H12: CAR ratio is not able to predict the probability of achieving the financial performance of Islamic banks listed on the Indonesia Stock Exchange during the Covid-19 pandemic.

NPL is a ratio used to measure credit risk. NPL illustrates how credit returns are made by customers. The NPL ratio shows how banking management deals with non-performing loans. The high NPL ratio illustrates the poor quality of credit which has an impact on the low performance of a bank. Research conducted by Khamisah et al., (2020) shows that the NPL ratio has a negative and significant effect on ROA. A high NPL value can affect public trust so that it will have a negative effect on ROA. This is in line with research conducted by (Rosadi & Ramadhan, 2024) which reveals that partially NPL has a negative effect on ROA.

Non Performing Finance (NPF) is the ratio between problematic financing and total financing distributed by Islamic banks (Muliawati & Khoiruddin, 2014). High NPF can disrupt the turnover of banking working capital (Muliawati & Khoiruddin, 2014). So when a bank has a high amount of problematic financing, the bank will first evaluate its performance by temporarily stopping the distribution of financing until the NPF decreases (Muliawati & Khoiruddin, 2014).

- H13: The NPL ratio is able to predict the probability of achieving the financial performance of conventional banks listed

on the Indonesia Stock Exchange during the Covid-19 pandemic.

H14: NPF ratio is able to predict the probability of achieving the financial performance of Islamic banks listed on the Indonesia Stock Exchange during the Covid-19 pandemic.

The BOPO ratio is used to measure the ability of banks to control operating costs against operating income. The smaller the BOPO ratio indicates that management is more efficient in controlling operating costs. Research conducted by Khamisah et al. (2020) shows that BOPO has a negative and significant effect on ROA. This is in line with research conducted by Amalia & Diana, (2022) which found that the BOPO variable has a negative and significant effect on ROA, this condition indicates that if the BOPO value increases, ROA will decrease and vice versa.

H15: The BOPO ratio is able to predict the probability of achieving the financial performance of conventional banks listed on the Indonesia Stock Exchange during the Covid-19 pandemic.

H16: The BOPO ratio is able to predict the probability of achieving the financial performance of Islamic banks listed on the Indonesia Stock Exchange during the Covid-19 pandemic.

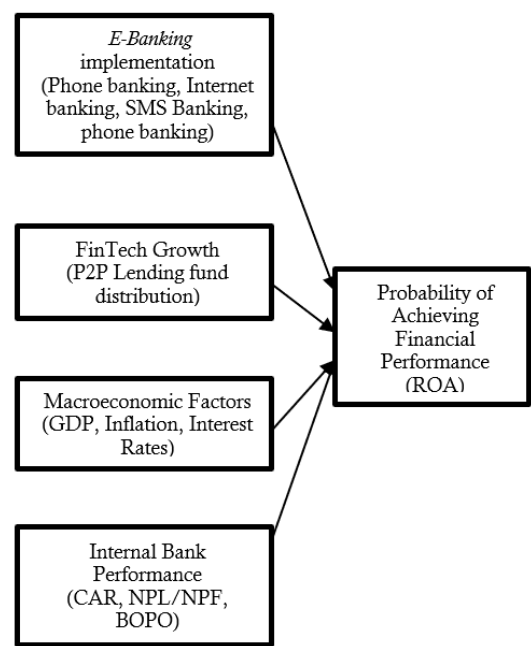


Figure 1. Research Model

METHOD

This study uses a correlational design with a quantitative approach. The research subjects were banks listed on the Indonesia Stock Exchange which were selected using purposive sampling technique. The total sample used was 47 banks, consisting of 43 conventional banks and 4 Islamic banks. The data in this study are secondary data and the type of data used is panel data which is a combination of time series and cross section data. The time series data used in this study is data on the Covid-19 pandemic period in Indonesia, namely quarter I 2020 - quarter II 2023. The data in this study comes from the official websites of the Indonesia Stock Exchange, Financial Services Authority, Central Bureau of Statistics and Bank Indonesia. Data were analyzed using logistic regression. The logistic regression analysis model is a statistical data analysis method used to describe the relationship between variables predicted by two or more categories with one or more of the independent variables being on a continuous or categorical scale (Wibowo & Wihayati, 2021) . The logistic regression analysis method is similar to the linear regression method in terms of the techniques and procedures used. If the linear regression method uses the Ordinary Least Squares (OLS) method in estimating parameter values, then the logistic regression analysis in estimating parameter values uses the Maximum Likelihood Estimation method. The logistic regression equation for k independent variables can be expressed as follows:

$$\ln [\text{odds} (S | X_1, X_2, \dots, X_k)] = b_0 + b_1X_1 + b_2X_2 + \dots + b_kX_k$$

Or :

$$\ln \frac{p}{1-p} = b_0 + b_1X_1 + b_2X_2 + \dots + b_kX_k$$

RESULT AND DISCUSSION

The research sample was obtained through purposive sampling technique where the population in this study, namely banks listed on the Indonesia Stock Exchange, must meet the criteria in accordance with the research objectives. The criteria for determining the sample and the list of samples in this study are presented in the following table.

Table 1. Sample Determination Criteria

Criteria	Conventional	Sharia	Total
Banking industry companies listed on the Indonesia Stock Exchange (IDX) during the 2020–2023 period	43	4	47
Companies that did not publish complete financial statements for the period from Q1 2020 to Q2 2023	0	0	0
Samples meeting the criteria	43	4	47

Conventional Banking

Table 2. Descriptive Statistics of Conventional Banking

	N	Range	Minimum	Maximum	Mean	Std. Deviation	Variance
	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic
ROA	602	24.11	-14.75	9.36	0.7429	0.10210	2.50517
E_Banking	602	3	1	4	3.21	0.036	0.878
FinTech	602	17.77	10.02	27.79	16.4193	0.18226	4.47186
PDB	602	9.24	-4.19	5.05	0.9186	0.10140	2.48804
Inflasi	602	4.62	1.33	5.95	3.0093	0.06485	1.59123
Suku_Bunga	602	2.25	3.50	5.75	4.1964	0.03408	0.83617
KPMM	602	529.99	8.02	538.01	35.3560	1.60135	39.29031
NPL (g)	602	22.27	.00	22.27	3.5545	.11007	2.70073
NPL (n)	602	4.95	.00	4.95	1.5652	.05079	1.24625
BOPO	602	280.77	25.71	306.48	91.6977	1.34087	32.89912

The amount of data on conventional banking is 602 data throughout Quarter I 2020 - Quarter II 2023. The maximum value of ROA is 9.36% and the minimum value of ROA is -14.75%. The minimum value of E-Banking application in conventional banking is 1 and the maximum is 4. The growth of FinTech P2P Lending funds distribution is at least 10.02% and a maximum of 27.79%. The lowest GDP growth value touched -4.19% and the highest during the Covid-19 pandemic period was 5.05%. The lowest

inflation rate was 1.33% and the highest was 5.95%. The lowest interest rate was 3.50% and the highest was 5.75%. In terms of internal banking performance, namely CAR, the minimum value is 8.02% and the maximum is 538.01%. The lowest NPL (g) value is 0.00% and the highest is 22.27%. Meanwhile, the lowest NPL (n) value is 0.00% and the highest is 4.95%. The BOPO value in this study has a minimum value of 25.71% and a maximum of 306.48%.

Table 3. Cox & Snell dan Nagelkerke Conventional Banking

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	101.450	0.449	0.840
2	88.890	0.461	0.861
3	83.736	0.465	0.870

The SPSS output results provide a Cox and Snell's R value of 0.465 and a Nagelkerke R value of 0.870, which means that the variability of the

dependent variable can be explained by the independent variable by 87.0%.

Table 4. Classification Test 2X2 Coventional Banking

Observed			Predicted		
			ROA		Percentage Correct
			ROA Negatif	ROA Positif	
Step 1	ROA	ROA Negatif	67	10	87.0
		ROA Positif	3	522	99.4
		Overall Percentage			97.8
Step 2	ROA	ROA Negatif	66	11	85.7
		ROA Positif	1	524	99.8

Overall Percentage					98.0
Step 3	ROA	ROA Negatif	68	9	88.3
		ROA Positif	2	523	99.6
	Overall Percentage				98.2

The SPSS results show that according to the prediction, the ROA of banks that have negative values (code 0) is 77 while the observation results are only 68, so the classification accuracy is 88.3% (68/77). In

addition, the ROA of banks that have a positive value (code 1) is 525 while the observation result is only 523, so the classification accuracy is 99.6% (523/525) or the overall classification accuracy is 98.2%.

Table 5. Regression Coefficient Test Results of Conventional Banking

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1	BOPO	-0.234	0.032	52.155	1	0.000	0.791
	Constant	25.660	3.305	60.288	1	0.000	139282300990.368
Step 2	E_Banking	1.319	0.396	11.068	1	0.001	3.740
	BOPO	-0.241	0.037	41.432	1	0.000	0.786
	Constant	22.588	3.632	38.673	1	0.000	6456093253.693
Step 3	E_Banking	1.303	0.397	10.780	1	0.001	3.682
	NPL_n	-0.511	0.232	4.868	1	0.027	0.600
	BOPO	-0.239	0.038	40.003	1	0.000	0.787
	Constant	23.629	3.799	38.685	1	0.000	18273125372.493

From testing the logistic regression equation, the logit regression model is obtained as follows :

$$\ln \frac{p}{1-p} = 23.629 + 1.303 \text{ E-Banking} - 0.511 \text{ NPL (n)} - 0.239 \text{ BOPO}$$

Atau

$$\frac{p}{1-p} = e^{23.629 + 1.303 \text{ E-Banking} - 0.511 \text{ NPL (n)} - 0.239 \text{ BOPO}}$$

Based on the logit regression line equation formed and the values of the regression coefficients of each independent variable, the values of the intercept and coefficient values of the independent variables can be interpreted. The correct interpretation of these coefficients depends on the ability to assign meaning to the difference between two logits. Therefore, the measurement of the logit regression coefficient uses a measure known as the odds ratio or Exp (B).

From the logistic regression equation, it can be seen that the log odds of banks having performance is positively influenced by the E-Banking service variable and negatively influenced by the NPL (n) and BOPO variables. The regression coefficient value of the E-Banking service variable is 1.303. If the NPL (n) and BOPO variables are held constant then, the bank

will have above average ROA performance by a factor of (e1.303) for every increase in E-Banking services. The odds ratio or Exp(B) value of the variable implementing E-Banking 3.682, this indicates that if there is an increase in E-Banking services implemented by banking companies, it is estimated that the chance of having a positive ROA is 3.682 times greates.

The regression coefficient value of NPL variable (n) is -0.511. If the E-Banking and BOPO variables are held constant, the bank will have below average ROA performance by a factor of (e-0.511) for every increase in NPL (n). The odds ratio or Exp(B) value of the NPL(n) variable is 0.600, this indicates that if there is an increase in NPL(n) in banking companies, it is estimated that the chance of having a positive ROA is 0.600 times smaller.

The regression coefficient value of BOPO variable is -0.239. If the variables of E-Banking and NPL (n) are considered constant, then the odds value of the bank will have ROA performance below the average by a factor of (e-0.239) for each increase in BOPO. Exp(B) value of the BOPO variable is 0.787, this indicates that if there is an increase in BOPO in conventional banking companies, it is estimated that the chance of having positive ROA is 0.787 times smaller.

Table 6. Descriptive Statistics of Islamic Banking

	N	Range	Minimum	Maximum	Mean	Std. Deviation	Variance
	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic
ROA	56	28.08	-10.85	17.23	2.7996	0.81704	37.383
E_Banking	56	1	3	4	3.50	0.067	0.255
FinTech	56	17.77	10.02	27.79	16.4193	0.60248	20.327
PDB	56	9.24	-4.19	5.05	.9186	0.33521	6.292
Inflasi	56	4.62	1.33	5.95	3.0093	0.21438	2.574
Suku_Bunga	56	2.25	3.50	5.75	4.1964	0.11266	0.711
KPMM	56	490.79	15.64	506.43	101.0246	18.88521	19972.469
NPL (g)	56	4.95	0.00	4.95	2.1311	.19246	2.074
NPL (n)	56	3.53	0.00	3.53	.8468	.13675	1.047
BOPO	56	442.28	54.85	497.13	122.2384	13.29746	9902.059

The amount of data on conventional banking is 56 data throughout Quarter I 2020 - Quarter II 2023. The maximum value of ROA is 17.23% and the minimum value of ROA is -10.85%. The minimum value of E-Banking application in conventional banking is 3 and the maximum is 4. The growth of FinTech P2P Lending funds distribution is at least 10.02% and a maximum of 27.79%. The lowest GDP growth value touched -4.19% and the highest throughout the period9 andemic Covid-19 of 5.05%. The

lowest inflation rate was 1.33% and the highest was 5.95%. The lowest interest rate was 3.50% and the highest was 5.75%. In terms of internal banking performance, namely CAR, the minimum value is 15.64% and the maximum is 506.43%. The lowest NPL (g) value is 0.00% and the highest is 4.95%. Meanwhile, the lowest NPL (n) value is 0.00% and the highest is 3.53%. The BOPO value in this study has a minimum value of 54.85% and a maximum of 497.13%.

Table 7. Cox & Snell dan Nagelkerke Islamic Banking

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	13.375	0.474	0.809
2	0.000	0.586	1.000
3	0.000	0.586	1.000

The SPSS output results provide a Cox and Snell's R value of 0.586 and a Nagelkerke R value of 1.000, which means that the variability of the

dependent variable that can be explained by the independent variable is 100%.

Table 8. Classification Test 2X2 Islamic Banking

		Predicted		
		ROA		Percentage Correct
Observed		ROA Negatif	ROA Positif	
Step 1	ROA ROA Negatif	7	2	77.8
	ROA Positif	2	45	95.7
	Overall Percentage			92.9
Step 2	ROA ROA Negatif	9	0	100.0
	ROA Positif	0	47	100.0
	Overall Percentage			100.0

Step 3	ROA	ROA Negatif	9	0	100.0
		ROA Positif	0	47	100.0
	Overall Percentage				100.0

The SPSS results show that according to the prediction, the bank ROA that has a negative value (code 0) is 9 while the observation result is only 9, so the classification accuracy is 100% (9/9). In addition, the ROA of banks that have

positive values (code 1) are 47 while the observation results are only 47, so the classification accuracy is 100% (47/47) or the overall classification accuracy is 100%.

Table 9. Results of The Islamic Banking Regression Coefficient Test

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1	BOPO	-0.039	0.014	7.369	1	0.007	0.962
	Constant	7.718	2.484	9.651	1	0.002	2248.341
Step 2	Fintech	21.762	1086.865	0.000	1	0.984	2826846871.370
	BOPO	-1.896	88.525	0.000	1	0.983	0.150
	Constant	15.710	6111.789	0.000	1	0.998	6649359.903
Step 3	Fintech	6.237	1135.194	0.000	1	0.996	511.179
	Inflasi	-11.662	2874.086	0.000	1	0.997	0.000
	BOPO	-0.601	68.348	0.000	1	0.993	0.548
	Constant	42.635	21828.432	0.000	1	0.998	3282800217837805600.000

From testing the logistic regression equation, the logit regression model is obtained as follows :

$$\ln \frac{p}{1-p} = 42.635 + 6.237 \text{ Fintech} - 11.662 \text{ Inflation} - 0.601 \text{ BOPO}$$

Or

$$\frac{p}{1-p} = e^{42.635 + 6.237 \text{ Fintech} - 11.662 \text{ Inflasi} - 0.601 \text{ BOPO}}$$

Based on the logit regression line equation formed and the values of the regression coefficients of each independent variable, the values of the intercept and coefficient values of the independent variables can be interpreted. The correct interpretation of these coefficients depends on the ability to assign meaning to the difference between two logits. Therefore, the measurement of the logit regression coefficient uses a measure known as the odds ratio or Exp (B).

From the logistic regression equation, it can be seen that the log odds of banks having performance is positively affected by Fintech and negatively affected by inflation and BOPO. The regression coefficient value of the FinTech P2P Lending distribution variable is 6.237. If the inflation and BOPO variables are considered constant, then the odds that the bank will have ROA performance above the average by a factor of (6.237) for each increase in the amount of Fintech P2P Lending fund distribution. The odds

ratio or Exp(B) value for the FinTech P2P Lending variable is 511.1, this indicate that if there is an increase in the distribution of FinTech P2P Lending funds, it is estimated that the chance of having a positive ROA is 511.1 times greater.

The regression coefficient of inflation variable is -11.662. If the FinTech P2P Lending and BOPO variables are considered constant, then the odds that the bank will have ROA performance below the average by a factor of (-11.662) for every increase in inflation. The odds ratio or Exp(B) value for the inflation variable is 0.000, this indicates that if there is an increase in inflation it is estimated that the chance of having a positive ROA is 0.000 times smaller.

The regression coefficient value of BOPO variable is -0.601. If the FinTech P2P Lending and inflation variables are considered constant, then the bank's odds value will have ROA performance below the average by a factor of (-0.601) for each increase in BOPO. The odds ratio or Exp(B) value for the BOPO variable is 0.548, this indicates that if there is an increase in BOPO it is estimated that the chance of having a positive ROA is 0.548 times smaller.

The results in logistic regression on Islamic banking show that the independent variables and constants in the logistic regression results have a significance level of ≥ 0.05 . Therefore, the model in the results of logistic regression in Islamic banking can be said to unsuitable for use because

the model does not provide a meaningful understanding of the phenomenon being studied.

CONCLUSION AND RECOMENDATION

The purpose of this study was to examine the effect of E-Banking implementation, FinTech growth, macroeconomic variables, and internal banking performance on the probability of achieving positive or negative ROA in conventional and Islamic banks during the Covid-19 pandemic. The findings indicate that E-Banking implementation significantly predicted ROA in conventional banks, while its effect on Islamic banks was not significant.

FinTech growth, represented by the increase in FinTech P2P Lending disbursement, did not significantly predict ROA in either conventional or Islamic banks. Similarly, Gross Domestic Product growth and interest rates were unable to predict banking financial performance during the pandemic. Inflation also showed no significant effect on the probability of achieving financial performance in both banking sectors.

Among the internal banking variables, Non-Performing Loans significantly affected the financial performance of conventional banks, while Non-Performing Financing did not significantly influence Islamic banks. BOPO was found to significantly predict financial performance in conventional banks, whereas its effect on Islamic banks was not statistically supported. In addition, the Capital Adequacy Ratio did not significantly predict financial performance in either conventional or Islamic banks.

The study suggests that the complexity of interactions between digital banking adoption, macroeconomic conditions, and internal banking factors may have reduced the accuracy of predicting banking financial performance during the Covid-19 pandemic. Regulatory changes and the global economic crisis also limited the predictive ability of the variables used in this research. Future studies are recommended to incorporate qualitative approaches and additional variables, such as financial inclusion and socio-economic indicators, to provide a deeper understanding of banking financial performance in conventional and Islamic banking sectors.

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