

Original Article

# The Effect of Digital Banking Capital Ratio, Efficiency Ratio, and Liquidity Ratio on Banking Financial Intermediation

<sup>1</sup>Eka Autantika, <sup>2</sup>Dwi Asih Surjandari

<sup>1,2</sup>Master of Accounting Study Program, Faculty of Economic and Business, Mercu Buana University, Jakarta, Indonesia

Received Date: 19 January 2024

Revised Date: 30 January 2024

Accepted Date: 02 February 2024

Published Date: 05 February 2024

**Abstract:** From 2019 to 2021, this study looks at how digital banking, capital ratios, efficiency ratios, and liquidity ratios affect Indonesian banking financial intermediation. The secondary data used in this study came from yearly reports found on the official Indonesia Stock Exchange websites, [www.idx.com](http://www.idx.com) and [www.sahamok.com](http://www.sahamok.com). A total sample, sometimes known as a census, is made up of every member of the population. The analysis tool Econometric Views (EViews) version 9 was used to examine this study. Panel data regression using the Random Effects Model is the research methodology employed. The study's conclusions suggest that the financial intermediation of banks is impacted by digital banking, capital ratios, efficiency ratios, and liquidity ratios.

**Keywords:** Digital Banking, Capital Ratios, Efficiency Ratios, Liquidity Ratios, Financial Intermediation.

## I. INTRODUCTION

The International Monetary Fund (IMF), in its report countering the Cost-of-Living Crisis released on October 11, 2022, predicts global growth to slow from 3.2 percent in 2022 to 2.7 in 2023. The sectors that are predicted to be most affected are the financial sector and sectors that rely on export activities, the preconditions that later gave birth to predictions that a global recession will characterize 2023. One of the impacts of a recession is the decline in the banking intermediation function, as an intermediary institution, banking has an important role in a country's economy. The decline in the banking intermediation function is very logical, considering that the risk factor for credit defaults is increasing due to economic uncertainty in the future, as well as the predicted decline in the accumulation of the number of community deposits, especially in the lower middle class. Before the pandemic occurred, bank credit accelerated quite rapidly, reaching Rp 5,712 trillion in March 2020, and due to the impact of the pandemic, its position continued to contract until it reached a low of Rp 5,397 trillion in January 2021. The decline in banking intermediation was also followed by a surge in bank credit restructuring, which touched a high of IDR 971 trillion in December 2020. If the banking intermediation function is not carried out properly, it is possible that the collapse of several banks will make bank owners bear considerable costs due to bank closures.

This is necessary since the COVID-19 pandemic has negatively impacted the economy, leading to a drop in circumstances overall. The decline in consumption power and activities has been the first sign of this. People will become more engaged and willing to engage in commercial transactions as a result of solutions and strategies. Thus, it is essential to efficiently and promptly assist the information access and transaction systems. In this scenario, the digitalization of all lines will facilitate transactions and facilitate efficient information searches for both banks and individuals. The journal article "Digital Transformation in the Indonesian Banking Industry: A Study by Riyanto Setyo": According to The Impact of Employee Engagement (2020), technical advancements and positive developments will result in recipients and users receiving information more swiftly and consistently. This shift is essential to all businesses. All industries, including banking and financial service providers, must adapt to this shift.

As stated by Finance Minister Sri Mulyani Indrawati, who stated that the digital economy is one of the drivers propelling Indonesia's economic growth, which is currently increasing extremely rapidly, government backing further reinforces the significance of digitalization. He predicted that by 2021, the digital sector would be worth US\$70 billion. Furthermore, it is predicted that by 2025, it would reach US\$ 145 billion. "We used conventional ways of working and are now switching to digital," stated the Minister of Finance on Monday, October 10, at the opening of the 2022 Financial Profession Expo in Jakarta. "The digital economy is certainly not only synonymous with startup companies and e-commerce, but it also includes various entities that were previously well-established."

## II. LITERATURE REVIEW

### A) Agency Theory

Agency theory serves as the theoretical foundation for this study. It describes the agency connection that arises in a



contract between one or more parties (the principal) and other parties (the agents), wherein the agent is asked to make choices on behalf of the principal. According to Jensen and Meckling (1976), the agent is the firm management, represented by the board of directors, whereas the principal is the shareholder, represented by the commissioner.

### **B) Intermediation Theory**

John Gurley, Financial Intermediation Theory (1956). According to financial intermediation theory, one of the main responsibilities of banks as the main engine of a nation's economy is to mediate money transfers from those with surplus funds to those in need of them. A broker who facilitates the exchange of products and services and serves as an "intermediary" for transaction actors is known as an intermediary, whereas intermediation is a liaison. The term "intermediation" here refers to the provision of services and services by intermediaries in the financial sector. The act of buying excess money from economic entities, such as businesses, governments, and private citizens, in order to transfer that money to economically deficient entities is known as financial intermediation.

### **C) Digital Banking**

Technology makes systems faster and more accurate; therefore, the banking industry needs to produce fast and precise data and information storage. The industry also needs to follow industrial changes by fully digitizing both the data and the information. Due to the necessity to protect client confidentiality or to accommodate customer requests, this requirement must also be modified. Authority on Financial Services (2018). Banking digitalization will help customers or clients establish relationships with banks, and this relationship is both in terms of accessing and providing accurate information to customers and vice versa; this can be done in various ways, via cellphone, SMS, internet, and other capable applications. Connecting customers with bang parties (OJK RI, n.d.).

**H<sup>1</sup>:** Digital banking has a positive effect on banking financial intermediation in Indonesia.

### **D) Capital Ratio**

When starting a business and managing the risk of losing money, capital is crucial. In addition, capital is used to finance operations, predict ratios, and facilitate business growth. Researchers frequently utilize the CAR ratio to estimate the amount of capital held by financial institutions. Sudirman (2013: 111) states that adding core capital to supplementary capital is one method of determining the total amount of bank capital. The capital put in by the owner, gifts, share premiums, paid-in capital, donated capital, and so forth are all considered forms of core capital. A maximum of 100% of core capital, which includes loan capital, allowance for productive asset losses (PPAP), fixed asset revaluation reserves, and other components, can be used to compute supplementary capital.

**H<sup>2</sup>:** Capital Ratio has a positive effect on banking financial intermediation in Indonesia.

### **E) Efficiency Ratio**

"There are significant differences in the efficiency of Islamic commercial banks and conventional commercial banks, which the results of this research prove that conventional commercial banks are more efficient than Sharia commercial banks," reads one of the conclusions of a study by Utami Wiwik titled "Comparative study of efficiency, asset quality and stability in Islamic commercial banks and conventional commercial banks in Indonesia." Nonetheless, maintaining national banking's survival in the age of expediting economic recovery depends in large part on efficiency. "Efficiency can be expressed as the input-to-output ratio. Rosenwig and Kost (1979:41). The ratio of operating expenses to operating income, or BOPO as it is generally known, will be used to calculate the efficiency ratio. A ratio that compares bank operational costs and bank operational income over a certain time period is the ratio of operating expenses to operating income. A high BOPO ratio indicates the bank's inefficient functioning because of the high operating costs relative to operating income, which results in lower profits. Riyadi (2006).

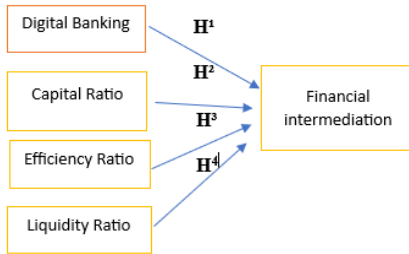
**H<sup>3</sup>:** Efficiency Ratios have a positive effect on banking financial intermediation in Indonesia.

### **F) Liquidity Ratio**

As per Harahap (2011:301), a liquidity ratio is a measure of a company's capacity to meet its immediate financial obligations. Current assets and current liabilities are the sources of working capital information that can be used to compute these ratios. A corporation with high liquidity can pay off all of its current liabilities on schedule and has a reasonably sound financial position.

**H<sup>4</sup>:** Liquidity ratios have a positive effect on banking financial intermediation in Indonesia.

Descriptive quantitative research is used in this study, where objective theories are tested by examining the relationship between variables (Okris et al., 2022:60). The 41 banks that were listed in the banking industry on the Indonesia Stock Exchange between 2019 and 2021 will be the population used in this study. In this study, the entire population is used as a sample, also known as a total sample or census, by the researcher. The reason this figure is used is that there are only 41 banks in the banking industry, which is a relatively tiny population.



**Figure 1: Conceptual Framework and Hypothesis**

The Econometric Views (EViews) version 9 analysis tool was utilized for this study since the panel data, or mixed data, included a mix of time series, cross-sectional, and Compared to competing applications, EViews-9 offers a more comprehensive regression estimating method and makes it simple to create worksheets (work files) straight from Excel files. This study's steps are a) Panel data regression model estimation, b) descriptive statistical analysis, c) regression model estimate selection, d) classical assumptions, and e) hypothesis.

### III. RESULTS AND DISCUSSION

#### A) Result

##### a. Descriptive Statistics

**Table 1: Statistik Deskriptif**

Sample: 2019 2021					
	LDR_Y	DB_X1	CAR_X2	BOPO_X3	DPKTA_X4
Mean	9.434847	0.227642	5.502306	9.407825	7.618178
Median	9.102747	0.000000	4.919350	9.428680	8.320457
Maximum	24.06242	1.000000	16.56804	30.01833	12.33005
Minimum	1.058301	0.000000	1.140175	4.583667	1.072381
Std. Dev.	4.105864	0.421025	2.701764	2.437140	2.043827

The data pertaining to the mean, median, maximum, minimum, and standard deviation values of every independent variable and dependent variable that will be examined in this study are displayed in Table 1. Given this data, the following variables can be used to describe the descriptive statistical analysis of all research observations:

1. Dummy measure of the digital banking variable yielded an average of 0.227642 and a standard deviation of 1.299074. For digital banking, 0.000000 is the lowest value, and 1.000000 is the maximum.
2. Since the average CAR obtained is higher than the standard deviation, which is 5.50, there will be a considerable degree of variability in the CAR for the 2019–2021 period. Average amount
3. Because the CAR number is less than 6%, which indicates that the overall capital ratio contains diverse data, this average is considered unhealthy. At Bank PAN Indonesia, the highest figure of 16.56 was recorded in 2019. A rise in total capital and a fall in risk-weighted assets contributed to the increase in CAR. 2021 saw a minimum CAR value of 1.14 at Bank Permata.
4. The average BOPO obtained is 9.40, which is greater than the standard deviation of 2.43, meaning that BOPO has low variability during the 2019 - 2021 period. This average value is below 94%, which means that BOPO has healthy criteria, thus showing that overall The overall efficiency ratio has homogeneous data. The maximum value of 30.01 is found at Bank Permata in 2021. The increase in BOPO was caused by an increase in operational expenses while operational income decreased. The minimum value for BOPO was 4.58 at Citibank Bank in 2019. The average DPKTA gain is 7.68, which is greater than the std deviation of 2.043, indicating that overall, the capital ratio has heterogeneous data. The minimum value obtained for DPKTA was 1.07 at Bank KB Bukopin in 2019, and the highest value of 12.33 was at Bank Pan Indonesia in 2019
5. The average LDR obtained is 9.43, which is greater than the std deviation of 4.10, which means the LDR has high variability during the 2019 - 2021 period. This average value is in very healthy criteria. The maximum value of 24.06 was found at Permata Bank in 2019. The increase in LDR was caused by the increase in total credit provided, which was greater than the increase in the amount of third-party funds, thus indicating that, overall, the capital ratio had homogeneous data. The minimum value for LDR is 1.05 at Bank Interim Indonesia in 2020.

##### b. Estimation of Panel Data Regression Models

In this research, to estimate parameters using panel data, several techniques are used, namely:

1. Common Effect, namely an estimation model that combines time series data and cross-section data using the OLS approach to estimate the parameters
2. Fixed Effect is a model that shows the diversity of independent variables according to individuals
3. And Random Effect is a panel regression estimate with the assumption that the coefficient of constant slope and intercept is different between individuals and over time

#### c. Selection of Panel Data Regression Model Estimates

There are three approaches to selecting panel data regression model estimates to find the best regression model, namely the Chow Test, Hausman Test, and Lagrange Multiplier Test.

**Table2: The Chow Test Results are presented in the Following Table**

Redundant Fixed Effects Tests			
Equation: Untitled			
Test cross-section fixed effects			
<b>Effects Test</b>	<b>Statistic</b>	<b>d.f.</b>	<b>Prob.</b>
Cross-section F	3.216185	(40,78)	0.0000
Cross-section Chi-square	119.839529	40	0.0000
Cross-section fixed effects test equation:			

Hi = Prob value. Less than 0.05 Models selected are FEM

Ho = Prob value. More than 0.05 Models selected by CEM

The Fixed Effect Model (Prob < 0.05) is the selected model based on the F test results, which indicate that H0 is rejected and Hi is accepted. The Fixed Effect Model regression technique is thus chosen based on the Chow test results, which are used to choose between the CEM and FEM models. The Fixed Effect Model or Random Effect Model that will be applied will be determined by running the Hausman Test if H0 is rejected.

#### d. Hausman Test

**Table 3: The Hausman Test Results are Presented in the Following Table**

Correlated Random Effects - Hausman Test			
Equation: Untitled			
Test cross-section random effects			
<b>Test Summary</b>	<b>Chi-Sq. Statistic</b>	<b>Chi-Sq. d.f.</b>	<b>Prob.</b>
Cross-section random	2.629858	4	0.6215

Hi = Prob value. Less than 0.05 Models selected are FEM.

Ho = Prob value. More than 0.05 Model selected REM

The Random Effect Model (Prob > 0.05) is the selected model in this study, indicating that H0 is accepted and Hi is rejected. Based on the results of the Hausman test, which is used to select between the FEM and REM models, the Random Effect Model regression technique was employed. In the event that Hi is rejected, the Lagrange Multiplier will employ the Common Effect Model or the Random Effect Model, as determined by the results of the LM test.

#### e. Lagrange Multipliers

**Table 4: Test Results are Presented in the Following Table**

Lagrange Multiplier Tests for Random Effects			
Null hypotheses: No effects			
Alternative hypotheses: Two-sided (Breusch-Pagan) and one-sided (all others) alternatives			
	<b>Test Hypothesis</b>		
	<b>Cross-section</b>	<b>Time</b>	<b>Both</b>
Breusch-Pagan	20.79235	7.58E-06	20.79236
	(0.0000)	(0.9978)	(0.0000)
Honda	4.559863	-0.002753	3.222364
	(0.0000)	--	(0.0006)
King-Wu	4.559863	-0.002753	0.992357
	(0.0000)	--	(0.1605)
Standardized Honda	4.962140	0.467773	-1.223721
	(0.0000)	(0.3200)	
Standardized King-Wu	4.962140	0.467773	-1.183203

	(0.0000)	(0.3200)	--
Gourieriou et al.*	--	--	20.79235
			(< 0.01)
*Mixed chi-square asymptotic critical values:			
1%	7.289		
5%	4.321		
10%	2.952		

Hi = Prob value. Less than 0.05 Selected model REM

Ho = Prob value. More than 0.05 Models selected by CEM

The LM test is used to choose between the CEM or REM models. In this study, the results of the LM test have a Breusch-Pagan probability value of 0.0000 because it is less than 0.05, meaning the selected model is a Random Effect Model (Prob < 0.05), meaning H0 rejected. Because He is accepted, the regression technique used is the Random effect model rather than the Common effect model because it is correlated with one or more independent variables.

#### f. Selected Panel Data Regression Test Model Results

The summary of the Chow test, Hausman test, and Lagrange Multiplier test is presented in the table. 5 below concludes that the model chosen is the Random Effect Model, as presented in the following table:

**Table 5: Selected Panel Data Regression Test Model Results**

Model	CEM	FEM	REM	Hasil
Chow	V	V		Fixed Effect
Hausman		V	V	Random Effect
LM	V		V	Random Effect

#### g. Classic Assumption Test

Because the selected model is a Random Effect model where the approach used is Generalized Lease Square (GLS), the classical assumption test is no longer needed (Indra, 2018).

#### h. Hipotesis

Coefficient of Determination ( $R^2$ ), The test results are presented in the following table:

**Table 6: Coefficient of Determination ( $R^2$ )**

R-Squared	0.524017	Mean Dependent Var	5.067650
Adjusted R-Squared	0.507882	S.D. Dependent Var	2.851087
S.E. of regression	2.000069	Sum Squared Resid	472.0325
F-Statistic	32.47705	Durbin-Watson Stat	1.826899
Prob(F-Statistic)	0.000000		

From the REM results table above, you can see the R-squared value is 0.524017 or 52.40%. This figure shows the large influence of variables X1, X2, X3 and

#### i. Panel Data Regression Analysis

The regression equation is obtained in the following form using the results of the calculation in the EViews application: Y is equal to a + bx1, bx2, bx3, bx4, and e.  $Y = 1.782033X1 + 0.934606X2 + 0.678862X3 - 0.455451X4 + e = 0.969778 +$

If the constant is 0.969778, then this equation makes sense. If the variable X1, the regression coefficient for variable X1 is 1.782033, which indicates an increase in the variable. The link between variable X1 and variable Y is pointing in the same direction if the coefficient is positive. In contrast, if the variable

Variable X2's regression coefficient is 0.934606, indicating a rise in the coefficient. Since the coefficient is positive, the relationship between variables X2 and Y is said to be pointing in the same direction.

F Statistical Test (F-Test). The test results are presented in the following table:

**Table 7: F Statistical Test (F-Test)**

R-squared	0.524017	Mean dependent var	5.067650
Adjusted R-squared	0.507882	SD dependent var	2.851087
SE of regression	2.000069	Sum squared resid	472.0325
F-statistic	32.47705	Durbin-Watson stat	1.826899

Prob(F-statistic)	0.000000			
-------------------	----------	--	--	--

$$F\text{-Table} = (n-k) = (123-4) = F\text{-Table } 119 = 2.45$$

Based on the table above, it is known that the calculated F value is greater than the table F value ( $32.47705 > 2.45$ ), with a significance value of  $0.000000 < 0.05$ . Thus,  $H_0$  is rejected. Hypothesis 4 is accepted, which means that variables X1, X2, X3, and X4 if tested together or simultaneously, have an effect on variable Y.

Partial Test (t-Test). The test results are presented in the following table:

**Table 8: Partial Test (t-Test)**

Arah Hipotesis	Variable	Coefficient	Std. Error	t-Statistic	Prob.	Hasil
+	DB	1.782033	0.776940	2.293656	0.0236	Diterima
+	CAR	0.934606	0.102385	9.128346	0.0000	Diterima
+	BOPO	0.678862	0.097891	6.934846	0.0000	Diterima
-	DPKTA	-0.455451	0.136909	-3.326660	0.0012	Ditolak

$$t\text{-Table} (n-k-1) = (123-4-1) = t\text{-Table } 118 = 1.98027$$

The following outcomes were attained based on the findings of the partial test output (t-test) mentioned above:

The effect of digital banking on intermediation is  $0.0236 < 0.050$ , according to the t-test table above. The estimated t value is  $2.293656 > t$  table (1.98027), where  $H_0$  is rejected, and Hypothesis 1 is accepted, indicating a significant positive influence of digital banking on intermediation.

The capital ratio variable has an effect on intermediation of  $0.0000 < 0.050$ , according to the t-test table above. The estimated t value is  $9.128346 > t$  table (1.98027), where  $H_0$  is rejected, and Hypothesis 2 is supported, indicating that CAR significantly positively affects intermediation.

The efficiency ratio variable's effect on Intermediation Y is  $0.0000 < 0.050$ , according to the t-test table above. The estimated t value is  $6.934846 > t$  table (1.98027), where  $H_0$  is rejected, and Hypothesis 3 is accepted, indicating that BOPO significantly positively affects intermediation.

The liquidity ratio variable's effect on intermediation is  $0.0012 < 0.050$ , according to the t-test table above. The computed t value is  $-3.326660 < t$  table (1.98027), where  $H_0$  is accepted, and Hypothesis 4 is rejected, indicating that DPK significantly negatively affects intermediation.

## B) Discussion

### a. Digital Banking's Impact on Intermediation.

Intermediation is positively impacted by digital banking. Digital banking is an electronic banking service that can be operated independently and was designed to make the most of client data in order to serve and offer information to consumers faster, easier, and in accordance with their needs (customer experience). Fully and exclusively by the client while considering multiple security factors. Authority on Financial Services (2018). Digital banking has revolutionized the way that management and banking services are provided, and as Asmara Rina (2017) noted in her research conclusion, "The use of information technology in company activities can produce several benefits, such as cost savings, acceleration of operating time, increasing productivity, and more," further implementation of this technology will boost company productivity.

### b. Capital ratios' impact on intermediation.

Intermediation is impacted by capital ratios. In this study, capitalization ratios Intermediation is positively impacted by capital ratios. In this study, CAR is used to compute the capital ratio. According to Dendawijaya (2005), the capital adequacy ratio compares the proportion of the bank's capital to its risk-weighted assets (RWA). This ratio can indicate whether the bank is able to supply information regarding potential loss risk.

LDR is impacted by CAR, which shows that banks are able to withstand risks—including credit risk—and have enough capital to meet their needs. Banking institutions that have a lot of capital will extend more credit. Wiagustini and Edo (2014). This study supports the findings of Satria and Subegti's (2010) study, which

### c. Efficiency Ratios' Impact on Intermediation

Intermediation benefits from the Efficiency Ratio. There are several perspectives on what constitutes efficiency. Efficiency can be expressed as the input-to-output ratio. Rosenwig and Kost (1979:41). The test results indicate that the probability level is 0.0000, which is less than 0.05, and the regression coefficient is 0.678862. This indicates that a 1%

increase in the BOPO ratio will result in a 0.678862 decrease in the intermediation function. Other variables are taken for granted to be constants.

According to the research hypothesis, a higher management burden will result in a lower community credit distribution level. Because banks compete fiercely to earn funds from third parties (customers), bank operating costs—namely, deposit interest expenses—are rising, which contributes to the high-efficiency ratio.

Similar to this, commercial banks are competing with one another to lower loan interest rates. This is part of a government initiative to provide low-interest soft loans, or low-rate loans, to the real sector, particularly MSMEs. This study supports the findings of Reniwaty Siringoringo (2017), who found that BOPO is one of the variables that somewhat influences the intermediation function in a significant and influential way.

#### **d. Liquidity Ratios' Effect on Intermediation**

Intermediation suffers from Liquidity Ratios. The Liquidity Ratio, according to Harapan (2011:301), is a ratio that illustrates the capacity of the business to meet its immediate obligations. A corporation with high liquidity can pay off all of its current liabilities on schedule and has sound financial standing. Businesses that exhibit strong liquidity typically release profit information in a broad manner, demonstrating their legitimacy.

The findings of this study contradict those of Sasongko's (2011) research, which demonstrates that DPK positively affects the banking intermediation function—in this case, the distribution of credit.

### **IV. CONCLUSION**

#### **A) Conclusion**

Based on data analysis from research results regarding the influence of digital banking, capital ratios, efficiency ratios, and liquidity ratios on banking financial intermediation in Indonesia, the author can convey the following conclusions:

1. Digital Banking has a positive effect on intermediation.
2. Capital Ratios have a positive effect on intermediation.
3. Efficiency Ratios have a positive effect on intermediation.
4. Liquidity ratios hurt intermediation.

#### **B) Suggestions**

Based on the conclusions of the research results and existing analysis, the researcher provides suggestions that can be considered in increasing the role of financial institutions, especially banking intermediation in Indonesia, namely as follows:

##### **a. To improve their function and role as a financial intermediation institution, banking institutions are expected to be able to pay attention to and manage appropriately several important things, which include:**

1. The implementation of digital banking has a positive influence on banking financial intermediation. Of course, appropriate implementation will not only have an impact on efficiency but will further create customer satisfaction, which will, of course, have multiple impacts, such as customer loyalty, company reputation, and opportunities for sustainable sources of company profits.
2. Because the Capital Ratio has a positive effect on intermediation, capital management is a very important factor. It should be a priority scale so that its existence shows the bank's ability to carry out its functions and role as an advanced and trusted financial intermediation institution.
3. Efficiency ratio control is an indicator in measuring the overall performance of banking activities. A high BOPO ratio shows that a bank is not operating efficiently. To maintain its existence and increase its productivity, banking as a financial intermediary institution must implement comprehensive efficiency.
4. Although the influence of liquidity ratios is not as strong as digital banking, capital, and efficiency factors, to maintain stakeholder trust and avoid liquidity risks, banks must ensure that sufficient funds are available to pay obligations, disburse customer funds that are due, finance operational activities and sufficient funds to face the possibility of a worsening economy. The adequacy of bank funds is very dependent on liquidity management instruments. The liquidity instrument that must be considered and managed appropriately is the collection of third-party funds (DPK).

**b.** This research certainly still has shortcomings, including the limitations of the research, which only uses banking data listed on the Indonesia Stock Exchange (BEI) and within a period of only three years or between 2019 and 2021. Therefore, researchers suggest that further research can increase the number of variants of research data objects, such as using non-banking financial institutions or other sectors listed on the IDX, and extend the period of research data, making it possible to obtain better and more useful research results, especially for developing competitiveness and increasing the productivity of financial intermediation institutions in Indonesia.

## **V. REFERENCES**

- [1] Ade Arthesa dan Edia Handiman, Bank dan Lembaga Keuangan Bukan Bank. (Jakarta: PT. Indeks, 2006).
- [2] Afifah Arofany, Dikdik Tandika, "Pengaruh Transaksi Digital Banking, Kualitas Aset, dan Aspek Permodalan terhadap Profitabilitas (Studi Kasus pada Bank Umum yang Terdaftar di Bursa Efek Indonesia Tahun 2013-2017)," <http://repository.unisba.ac.id>.
- [3] Afria Bagus Rachmat dan Euis Komariah, "Faktor-Faktor Yang Mempengaruhi Profitabilitas Pada Bank Umum Syariah Periode 2010-2015," *Jurnal Online Insan Akuntan* 2, no. 1 (2017): 17–34.
- [4] Agustina, dan Wijaya, Anthony. "Analisis Faktor-Faktor Yang Mempengaruhi Loan Deposit Ratio Bank Swasta Nasional Di Bank Indonesia". *Jurnal Wira Ekonomi Mirkoskil*. Vol.3 No.03, 2013. p. 102-109.
- [5] Arikunto, Suharsimi. (2012). *Prosedur Penelitian Suatu Pendekatan Praktek*. Jakarta: Rineka Cipta
- [6] Budisantoso, Totok dan Nuritmo. 2014. *Bank dan Lembaga Keuangan Lain*. Jakarta: Salemba Empat.
- [7] Dendawijaya, L. (2005). *Manajemen Perbankan*. Jakarta: Ghalia Indonesia.
- [8] Dwi Asih Surjandari & Lela Nurlaela Wati. 2020. *Devidend Policy, Economic Value Added, Market, Firm Size and Stock Return*, Vol. 9, No. 3; 2020.
- [9] Ghozali, Imam. 2018. *Aplikasi Analisis Multivariate dengan Program IBM SPSS 25*. Badan Penerbit Universitas Diponegoro: Semarang.
- [10] Gischa, S. (2020, 01 29). Bank: Pengertian, Fungsi, dan Jenisnya. Retrieved from Kompas.com:<https://www.kompas.com/skola/read/2020/01/29/140000269/bank-pengertian-fungsi-dan-jenisnyapage=all>.
- [11] Hadad et al. (2004). Fungsi Intermediasi Bank Asing dalam Mendorong Pemulihan Sektor Riil di Indonesia. <https://www.bi.go.id/id/publikasi>.
- [12] Harahap, Sofyan Syafri. 2011. *Analisis Kritis atas Laporan Keuangan*. Edisi Pertama Cetakan ke sepuluh. Jakarta : PT Bumi Aksara.
- [13] Ichsan, Nurul. 2013. *Pengelolaan Likuiditas Bank Syariah*. Jurnal.
- [14] Jensen, Michael C., dan Meckling, W.. (1976) *Theory of the firm: Managerial Behavior, Agency cost and Ownership Structure*. *Journal of Financial Economics*, Vol. 3:305-360.
- [15] Jesica Clara. 2020 *Pengaruh Digital Banking dan Faktor*.
- [16] John G. Gurley, Edward S. Shaw 1956 *FINANCIAL INTERMEDIARIES AND THE SAVING-INVESTMENT PROCESS* *The Journal of Finance* Volume 11, Issue 2 p. 257-276
- [17] Josiah Aduda dan Nancy Kingoo. 'the relationship between electronic banking and financial performance of commercial bank in Kenya.' *Journal of Finance and Investment Analysis*, vol.1, no.3, 2012, 99-118.
- [18] Kost, Fremont. E, and Rosenwrig, James. E., 1979, *Organization and Management; A System and Contingency Approach* McGraw-Hill Inc, United States.
- [19] Laporan Keuangan Tahunan Perusahaan Perbankan 2019-2021. (n.d.). Retrieved from idx.co.id: <https://www.idx.co.id/>.
- [20] Latifa M Algoud Dkk, Perbankan Syariah, Jakarta: Serambi, 2004, Cetakan Kedua, h. 96.
- [21] Lee, Monle dan Carla Johnson. 2007. *Prinsip-Prinsip Periklanan Dalam Perspektif Global*. Diterjemahkan oleh Haris Munandar dan Dudi Priatna. Jakarta: Kencana Prenada Media.
- [22] Mukhlis, Imam, 2011. *Penyaluran Kredit Bank Ditinjau Dari Jumlah Dana Pihak Ketiga Dan Tingkat Non Performing Loans*, *Jurnal Keuangan dan Perbankan*, Vol 15, No1, Januari.
- [23] Naufal, Tanesia G N, dkk. 2017. *Pengaruh Dana Pihak Ketiga, Rasio Keuangan Bank, Inflasi dan BI Rate Terhadap Volume Pembiayaan (Studi pada Bank Umum Syariah yang Terdaftar di Bank Indonesia Periode 2012-2016)*. *Jurnal Prosiding Akuntansi* ISSN: 2460-6561.
- [24] Nurlisdianan, Y. (n.d). 4 Tabungan Digital Terbaik Tawarkan Banyak keunggulan. Retrieved from Folderbisnis.com: <https://www.folderbisnis.com/tabungan-digital-terbaik>.