

## INFLUENCE OF COMPETITION AND SHADOW BANKING ON BANKING PROFITABILITY IN INDONESIA

Baetyka Nur Rifawati  
Universitas Sebelas Maret  
Email: [tyka2102@gmail.com](mailto:tyka2102@gmail.com)

### Abstract

Competition between banks can lead to various innovations and expansions in the banking sector that ultimately relate to the profitability that will be obtained by banks. Profitability is one of the important indicators commonly used to know the performance of banks in gaining profits in a country in a certain period. This study aims to analyze the influence of competition, shadow banking, and other determinant factors on the profitability of banks in Indonesia. The population studied in this study was conventional banks listed on the Indonesia Stock Exchange during the period 2014-2019. Sampling in this study using a purposive sampling method. Data analysis methods use multiple regressions. The results of the analysis in this study show that competition and company size has a positive and significant effect on the profitability of banks. Credit risk negatively and significantly affects bank profitability, while shadow banking has a positive but insignificant effect on bank profitability. Based on these results, it can be concluded that the level of competition, ownership of assets, and risk of bad credit greatly affect the profitability of the bank.

Keywords: *competition, shadow banking, bank profitability*

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### 1. Introduction

The banking sector is one of the sectors that play an important role in building a country's Economy (Budiyo et al, 2021). This is inseparable from the function of banking institutions that act as financial intermediary institutions that distribute funds from parties that have excess funds to parties that need funds (Berlian, 2017). With this role, the bank distributes funds to the real sector to boost economic growth so that the bank has become an institution that contributes to the development of the country's economy. In addition to being an intermediary, the bank also serves as a provider and provider of services in the field of finance and payment traffic. In Indonesia itself, its economic activities cannot be separated from banks. Almost all sectors require banks in their activities, be it in terms of payments or terms of funding needs. Therefore, banks must maintain their performance for the economy to remain stable.

At this time, competition between banks is getting tighter. This is characterized by the number of branch offices opened in each area, the emergence of new products with all kinds of attributes owned by each bank such as providing high-interest rates, credit guarantees, gifts, online facilities, phone banking, self-service cash machines (ATMs), and other

facilities. Based on data from BPS (Central Bureau of Statistics), until the end of 2019, there are 96 conventional commercial banks in Indonesia with industries that are still highly concentrated in commercial banks with a total of 4 banks.

Competition between banks can lead to various innovations and expansions in the banking sector that ultimately relate to the profitability that will be obtained by banks. Competition in the banking sector is considered one of the indicators that can lead to a decrease in the level of banking margins. This is because of the large number of banks in the market so that banks compete with each other in offering banking products at lower prices to get more customers. But for consumers, this is considered profitable because consumers will get a lower price as well.

Experts have empirically examined the economic role of banking competition. Empirical findings suggest that banking competition has both positive and negative effects, and it is difficult to determine which one ultimately dominates (Yong, 2017). Tan and Floros (2014) examined the link between risk, profitability, and competition in China's banking industry. The results showed that there is a significant and negative influence between the competition to bank profitability in China, which is in line with the SCP (structure-conduct-performance) theory.

In addition to the interbank competition, the phenomenon that is currently developing in the Indonesian banking world is the Shadow Banking phenomenon. According to Tang & Wang (2016) Shadow banking is a term that refers to financial intermediation institutions that facilitate the formation of credit in the financial system. It can also be interpreted as the activities of financial institutions that have not been staggered by regulation. Bank Indonesia (BI) defines shadow banking as a non-bank financial institution that performs functions like banking, such as securities companies, private equity, pension funds, insurance, financing institutions, to microfinance institutions (MFIs).

According to Regina (2018), Shadow banking provides similar services to commercial banks such as providing credit throughout the financial system. Here as a non-depository institution, Shadow banking obtains its funds through several means, namely equity, bond issuance, banking loans as well as short-term funding activities, where borrowers provide collateral as collateral against loans provided. Shadow banking is also described as a network of financial instruments such as asset-backed securities, derivative loans, money market mutual funds, repurchase agreements, and others (Gerding, 2011). In a simpler sense, shadow banking is a rival bank in credit intermediation to households and businesses (Zoltan, 2012).

According to Barth (Regina, 2018), although the role of shadow banking is still limited, its presence is considered capable of contributing to the economy through diversification of financial services (Iin Emy and Anik, 2020). When diversification occurs in financial products, it is considered to reduce the risk that triggers increased investment and savings. Of course, the increasing financial activity, activity in the real sector, and the economy will also increase. However, shadow banking financial activities can also be a source of systemic risk. This is because, in its activities, shadow banking is not regulated and supervised like a commercial bank.

Yong (2017) examined the influence of competition and shadow banking on the profitability of the banking industry in China. The results showed that shadow banking contributed to the increase in profitability of China's commercial banks. Related to the theory of financial innovation, shadow banking as a form of financial innovation can lower transaction costs and taxes to increase returns (Tang, 2016).

Profitability is the most important indicator for measuring a bank's financial performance. Profitability is the ability of the company to generate profit over a certain period. Profitability also has an important meaning in the effort to maintain the company's long-term survival, because Profitability shows whether the business entity has good prospects in the future. Profitability can be interpreted as one of the indicators to measure the performance of a company (Yuanita, 2019).

Profitability has information to know the amount of profit earned by the company in a certain period and the productivity of the use of company funds used both loan capital and own capital that can be used by investors and prospective investors as the basis for decision making in making investments. Profitability is not only important for investors and potential investors but it is also important for management to set targets and evaluate the effectiveness of the company's management as well as be a public assessment of the company.

According to Yong's research (2017), most of the research found that bank profitability is significantly influenced by bank size, bank liquidity, bank capital, bank credit risk, bank efficiency, and bank diversification. Empirical studies on bank profitability can be classified into five groups according to methodology. To be more specific, some preliminary studies use ordinary least square estimates. Four of these studies focused on investigating the U.S. banking industry and one study evaluated profitability in the European banking industry. The results reported that the profitability of U.S. banks was significantly influenced by bank size, bank risk, and market share as well as by-product differentiation. The second study group used Granger's causality test to test profitability in the U.S. banking industry and its findings showed that bank profitability was significantly impacted by capital levels. The third research group used fixed effect estimation to assess the determinants of bank profitability. The study focused on investigations using bank samples from European countries, the Philippines and Portugal, as well as developed and developing countries. The results showed that the bank's profitability was significantly affected by bank risk, bank capital, and competition levels. The fourth study group used the GMM (Generalized Method of Moments) to estimate the determining factors of bank profitability. The results of the study showed that bank profitability is significantly influenced by the risk of credit, liquidity, capital, efficiency, diversification, and income levels of a country. Lastly, the fifth study group used a combination of two methods (GMM and OLS, GMM, and fixed effect estimation) to investigate bank profitability determinants. The results showed that credit risk, capital, and competition levels affect the bank's profitability.

This research is the result of modifications from previous studies, namely research conducted by Yong (2017) and Tang (2016). The Lerner Index is used to measure the level of competition between banks and uses net fees and commissions as a proxy to measure shadow banking. In addition, this study used several bank-specific variables such as credit risk, bank size, bank diversification, capitalization rate, and overhead cost to assess the determinant of banking profitability. The two researchers also used conventional commercial banks as research objects. Based on the description above this study will analyze the influence of competition and shadow banking on the profitability of banks in Indonesia. This study will be reviewed at commercial banks in Indonesia.

Competition is a condition where several parties compete for something. In a competitive market, banks have little market power. The magnitude of market forces in the banking sector will cause banks to increase lending interest rates to gain high profitability. Hope (2013)

found that there is a positive relationship between market forces as measured by the Lerner index and ROA.

According to Chortareas (2011), competitive markets resulted in a low spread in the Latin American banking sector. Bank profitability is influenced by the intensity of competition in the banking market, this has been proven by Smith (Febrina, 2015) who found a decrease in profitability in the banking industry with a high level of competition. Yuanita (2019) uses the Lerner index for competition measurement. The regression results show that the Lerner index has a positive relationship with the bank's performance. The higher the Lerner index, the higher the ROA. Because the high Lerner index indicates low competition, the regression results show that lower competition is associated with higher profitability. Based on some of the explanations above, it can be concluded that the high intensity of competition can reduce the profitability of banks. In other words, the larger the Lerner index, the higher the bank's profitability. Based on these explanations, the following hypotheses can be submitted.

### **H1: Competition negatively affects bank profitability**

Shadow Banking is a system of liquidity transformation and credit intermediation involving several entities and their activities as a whole or partly conducted outside the regular banking system. According to Tang & Wang (2016) on the theory of financial innovation, shadow banking, as a form of financial innovation, can lower transaction costs and taxes to increase returns. Second, shadow banking maintains lower capital requirements and loss provisions, so that asset utilization efficiency can be improved to result in higher returns. Third, in line with financial innovation, shadow banking can gain access to more funds resources by transferring illiquid assets to liquid assets and in turn generating more profits for banks. Schwarcz (2012), argues that shadow banking can reduce bank risk. Because banks not only transfer part of the bank's credit risk to external investors but also make those risks shared by the entire capital market through asset securitization. It also helps banks increase their liquidity. Tang & Wang (2016) research found that the development of shadow banking can improve the profitability of commercial banks.

In contrast to the research conducted by Diallo & Abdullah (2017) which examined shadow banking, insurance, and financial sector stability. The results showed there is a negative and significant influence of the insurance sector on financial stability that increases in line with the increasing level of the shadow banking market in a country. So based on the explanation above, hypotheses can be formulated as follows:

### **H2: Shadow Banking negatively affects banking profitability in Indonesia**

Bank profitability is significantly influenced by bank size, bank liquidity, bank capital, bank credit risk, bank efficiency, and bank diversification (Yong, 2017). One of the main transactions of banking to increase profitability is credit lending transactions. In addition to being the main source of income of banks, these lending transactions are very vulnerable to risks that can be one of the main causes of banks getting problems and the worst thing faced is going into bankruptcy. The risk in the common activity of lending is when the customer is unable to pay his/her obligations to the creditor. Bank Indonesia Circular Letter

No.13/24/DPNP/2011 states that credit risk is a risk due to the failure of the debtor and/or other parties in fulfilling obligations to the Bank. NPL (Non-Performing Loan) is a measure of the level of credit risk in this study. NPL risk demonstrates the ability of bank management to manage non-performing loans provided by banks (Rachmana, Saudi, & Sinaga, 2019).

According to Tan's (2017) research higher volume of non-performing loans (NPLs) increases bank costs and further leads to a decrease in bank profitability. In addition, Roman and Danuletiu (Rachmana, 2019) also found that there is a negative relationship between NPL and ROA.

### **H3a: Credit risk negatively and significantly affects banking profitability in Indonesia**

The size or size of the company is the size or size of assets owned by the company. Supriyono & Herdhayinta (2019) revealed that the size of the company is one of the factors that affect the profitability of banks. This is because the size of the company will affect the company's ability to bear the risks that may arise from various situations faced. According to Supriyono & Herdhayinta (2019), large, well-established companies will be easier to obtain capital in the capital market compared to small companies. The ease of access means large companies have greater flexibility as well. The results of the research of Supriyono & Herdhayinta (2019) and Ayadi and Ellouze (2013) found that the size of the company had a positive and significant effect on the profitability of the bank.

### **H3b: The size of the company has a positive and significant effect on the profitability of banks in Indonesia**

Profitability is one of the important indicators commonly used to know the performance of banks in gaining profits in a country in a certain period. The greater the value of profitability, the more profit a banking company gets. The rapid competition in the financial financing sector, both conducted by banks and non-banking financing, is necessary to measure the level of competition. Competition level measurement is one of the common ways to explain and give an idea of the real state of the competition. The Lerner Index is a comprehensive measure of market strength as it integrates costs and revenues in one measure. The Lerner Index is a measure of competition and shows market strength as the ratio between revenue and cost differences to total revenue. This index has values ranging from 0-1. A higher number or close to the value of 1 indicates great market strength and a low level of competition. While in a competitive market, the Lerner index will have a value close to 0. In addition to the level of competition, the emergence of Shadow Banking and some bank determinants such as credit risk and bank size also influence banking profitability. The relationship between Shadow Banking, competition, and banking determinants (credit risk and bank size) with profitability can be seen in figure 1 as follows:



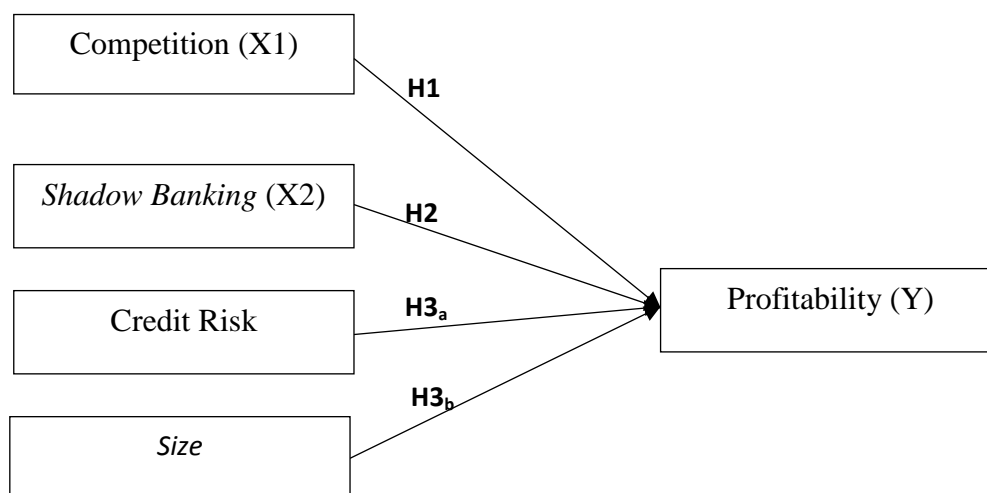


Figure 1. Model Conceptual

## 2. Research Methods

### 2. 1.Population and Samples

This research is a case study conducted in conventional banking in Indonesia. This type of research is survey research, using secondary data surveys obtained by conventional banks listed on the Indonesia Stock Exchange. The survey research focuses on research that studies the influence of competition and shadow banking on banking profitability in Indonesia. The population is the total number of objects studied. The population studied in this study is conventional banking listed on the Indonesia Stock Exchange during the period 2014-2019. Sampling in this study using purposive sampling method with criteria such as the following:

- a. Conventional banks that have data on financial statements and records of financial statements that have been audited and published on the websites of each bank as well as on the website of the Financial Services Authority
- b. Conventional banks listed on the Indonesia Stock Exchange issued consecutive annual reports during the period 2014-2019.

The type of data used is secondary data for all variables, namely conventional banking financial ratios data listed on the Indonesia Stock Exchange as a benchmark of financial performance that includes banking competition measured using the Lerner Index, Shadow banking, and the profitability of conventional banks obtained from the Return On Asset (ROA) level. This secondary data is obtained from the observation of conventional Bank Financial Statements contained in the Annual Report from 2014-2019 at each bank. Based on the results of the sample selection obtained by 35 banks as samples in this study.

### 2. 2.Variable Measurement

#### 2.2.1. Independent Variables

Independent variables are variables that describe or affect other variables, this study uses independent variables that include Competition (X1) and Shadow Banking (X2).

##### a. Competition (X1)

The measurement of the level of banking competition is measured using the Lerner Index developed in 1934 by Abba Lerner. The Lerner Index is a price mark-up above its

marginal cost and an indicator of market strength (Berger et al, 2009). This index has values ranging from 0-1. A higher number or close to the value of 1 indicates great market strength and a low level of competition. Conversely, if the value is close to the number 0, the market forces are low and the level of competition is high. Refers to the Lerner Index formulated by Berger et al (2009), formulated as follows:

$$\text{Lerner}_{it} = (P_{Tait} - MC_{Tait}) / P_{Tait}$$

Description:

$\text{Lerner}_{it}$  = The level of competition of banks  $i$  at the time  $t$ .

$P_{Tait}$  = The ratio of total revenue to total assets of the bank  $i$  at the time  $t$ .

$MC_{Tait}$  = The bank's marginal cost to the total assets of the bank  $i$  at the time to  $t$ .

#### **b. Shadow Banking (X2)**

Shadow banking is a non-bank financial institution that provides similar services to commercial banks such as financing, insurance, mutual funds, securities, and cooperatives. Shadow banking assessment in this study was obtained from the amount of credit financing provided by non-bank financial institutions during the period 2014-2019 based on the financial stability review issued by Bank Indonesia. Shadow banking variables are measured using the Shadow banking ratio formula. The formula used to measure the ratio of shadow banking is as follows:

$$SBR = NFC / TR$$

Description:

SBR = *Shadow Banking Ratio*

NFC = *Net Fees and Commissions*

TR = *Total Revenue*

#### **c. Credit Risk**

Credit risk is the main source of risk for banks because the bank's main function in intermediation activities is credit distribution for the underfunded party (deficit). The NPL ratio measures the risk of a bank's credit portfolio by looking at the debtor's failure to meet its obligations. Changes to credit risk may reflect changes in the health of a bank's credit portfolio, which will affect the performance of the bank (Rachmana et al, 2012).

Higher ratios show banks have higher levels of credit risk. In theory, higher volumes of non-performing loans increase bank costs and further lead to a decrease in the bank's profitability (Yong Tan, 2017).

$$NPL \text{ (Non – Performing Loan)} = \frac{\text{Total Non – Current Credit}}{\text{Total Bank Loans}} \times 100\%$$

#### d. Bank Size

The size of the company is the size or size of assets owned by the company. Based on the total assets owned by the size of the company are divided into three, namely large firms, medium firms, and small firms. The size of the business is stated in the total assets and log size (Supriyono & Herdhayinta, 2019). According to Supriyono & Herdhayinta (2019) a large company whose shares are very widespread, any expansion of stock capital will only have a small influence on the possibility of loss or shift of control from the dominant party to the company concerned.

$$Size = LnTotalAsset$$

#### 2.2.2. Dependent Variables

Dependent variables are variables described or influenced by independent variables, dependent variables used in this study are Profitability measured using Return on Asset (ROA). This ratio is used to measure the strength and weakness of the company in generating its overall operating profit. Where ROA is calculated by using the formula of net profit after tax divided by total assets.

The profitability level measurement in this study used Return On Asset (ROA) ratio. ROA is used to measure the company's ability to generate overall profit. The greater the ROA of a bank the greater the level of profit achieved by the bank and the better the position of the bank in terms of the use of assets. This ratio can be written with formula as follows:

$$ROA = \frac{\text{Earning after tax}}{\text{total Asset}} \times 100\%$$

#### 2. 3.Data Analysis Methods

The hypothesis in this study was tested with multiple linear regressions with the following regression equations:

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + e$$

Description:

Y	= Profitability
X1	= Competition
X2	= <i>Shadow Banking</i>
X3	= Credit Risk
X4	= Size
$\beta_{1,2,3,4}$	= Regression Coefficient
e	= <i>error</i>

### 3. Results and Discussion

#### 3.1. Results

To answer the hypothesis in this study using multiple regression analysis, to test the linear abnormality of these multiple regression results have been tested for normality, multicollinearity, and heteroskedasticity and the results used for the retrieval of this



hypothesis have been free from the problem of linear unusuality (BLUE). The results of data analysis with the SPSS 23 program can be seen in Table 1.

Table 1. Multiple Regression Analysis Results

Variables	Coefficients	t	sign	Decision
Constant	-1.723			
Learning Indeks	0.620	6.544	0.000	H1 accepted
Shadow Banking	0.202	0.617	0.538	H2 rejected
NPL	-0,370	-5.543	0.000	H3a accepted
SIZE	0.258	4.098	0.000	H3b accepted

Based on the results of the regression analysis in Table 1, it can be concluded that competition (learning index) has a positive and significant effect on profitability. Shadow banking has a positive but insignificant effect on profitability. Credit risk (NPL) negatively and significantly affects profitability, and the size of the company positively and significantly affect profitability.

### 3.2. Discussion

Profitability is one of the important indicators commonly used to know the performance of banks in gaining profits in a country in a certain period. The greater the value of profitability, the more profit a banking company gets. The rapid competition in the financial financing sector, both conducted by banks and non-banking financing, is necessary to measure the level of competition. Competition level measurement is one of the common ways to explain and give an idea of the real state of the competition. The Lerner Index is a comprehensive measure of market strength as it integrates costs and revenues in one measure. The Lerner Index is a measure of competition and shows market strength as the ratio between revenue and cost differences to total revenue. This index has values ranging from 0-1. A higher number or close to the value of 1 indicates great market strength and a low level of competition. While in a competitive market, the Lerner index will have a value close to 0. In addition to the level of competition, the emergence of Shadow Banking, and some bank determinants such as credit risk, the size of the bank also influence the profitability of banks. The results of the analysis of the relationship between competition, shadow banking, other determinant factors with profitability can be explained in the following discussion.

Competition is a condition where several parties compete for something. In a competitive market, banks have little market power. The magnitude of market forces in the banking sector will cause banks to increase lending interest rates to gain high profitability. Hope (2013) found that there is a positive relationship between market forces as measured by the Lerner index and ROA. The results of this study show that competition has a positive and significant effect on the profitability of banks in Indonesia. The positive influence shows that the higher competition between banks further improves the bank's performance, the results of this study support research conducted by Hope (2013) and Yuanita (2019). However, the results of this study do not support research conducted by Chortareas (2011) and Febrina (2015) that found the opposite relationship.

According to Chortareas (2011), competitive markets resulted in a low spread in the Latin American banking sector. Bank profitability is influenced by the intensity of

competition in the banking market, this has been proven by Smith (Febrina, 2015) who found a decrease in profitability in the banking industry with a high level of competition. Yuanita (2019) uses the Lerner index for competition measurement. The regression results show that the Lerner index has a positive relationship with the bank's performance. The higher the Lerner index, the higher the ROA. Because the high Lerner index indicates low competition, the regression results show that lower competition is associated with higher profitability.

Shadow Banking is a system of liquidity transformation and credit intermediation involving several entities and their activities as a whole or partly conducted outside the regular banking system. According to Tang & Wang (2016) on the theory of financial innovation, shadow banking, as a form of financial innovation, can lower transaction costs and taxes to increase returns. Second, shadow banking maintains lower capital requirements and loss provisions, so that asset utilization efficiency can be improved to result in higher returns. Third, in line with financial innovation, shadow banking can gain access to more funds resources by transferring illiquid assets to liquid assets and in turn generating more profits for banks. Schwarcz (2012) argues that shadow banking can reduce bank risk. Because banks not only transfer part of the bank's credit risk to external investors but also make those risks shared by the entire capital market through asset securitization. It also helps banks increase their liquidity. The results of this study show that shadow banking has a positive but insignificant effect on profitability. The results of this study support the direction of the relationship with Tang & Wang (2016) research found that the development of shadow banking can improve the profitability of commercial banks. But it is different from the research conducted by Diallo & Abdullah (2017) which examined shadow banking, insurance, and financial sector stability. The results showed there is a negative and significant influence of the insurance sector on financial stability that increases in line with the increasing level of the shadow banking market in a country.

Bank profitability is significantly influenced by bank size, bank liquidity, bank capital, bank credit risk, bank efficiency, and bank diversification (Yong, 2017). One of the main transactions of banking to increase profitability is credit lending transactions. In addition to being the main source of income of banks, these lending transactions are very vulnerable to risks that can be one of the main causes of banks getting problems and the worst thing faced is going into bankruptcy. The risk in a common crediting activity is when the customer is unable to pay his/her obligations to the creditor. Credit risk is a risk due to the failure of the debtor and/or other parties in fulfilling obligations to the Bank (Rachmana et al, 2019). NPL (Non-Performing Loan) is a measure of the level of credit risk in this study. NPL risk demonstrates the ability of bank management to manage non-performing loans provided by banks (Rachmana et al, 2019). The results of this study show that credit risk negatively and significantly affects the profitability of banks in Indonesia. The negative influence indicates that the higher the NPL the bank will further decrease the profitability of banks in Indonesia. The results of this study support Tan's (2017) research higher volume of non-performing loans (NPLs) increases bank costs and further leads to a decrease in bank profitability. In addition, Rachmana et al (2019) also found that there is a negative relationship between NPL and ROA.

The size or size of the company is the size or size of assets owned by the company. Supriyono & Herdhayinta (2019) revealed that the size of the company is one of the factors that affect the profitability of banks. This is because the size of the company will affect the

company's ability to bear the risks that may arise from various situations faced. According to Supriyono & Herdhayinta (2019), large, well-established companies will be easier to obtain capital in the capital market compared to small companies. The ease of access means large companies have greater flexibility as well. The results of this study found that the size of the company has a positive and significant effect on the profitability of banks in Indonesia. The positive influence indicates that the larger the size of the bank will increase its profitability, this is because with large asset ownership it will be easier for the bank to grow its business. The results of this study supported the research of Supriyono & Herdhayinta (2019) and Ayadi and Ellouze (2013) found that the size of the company had a positive and significant effect on the profitability of the bank.

#### **4. Conclusion**

Profitability is one of the important indicators commonly used to know the performance of banks in gaining profits in a country in a certain period. The greater the value of profitability, the more profit a banking company gets. It is therefore very important to know the factors that affect the profitability of the bank. The results of the analysis in this study show that competition and company size has a positive and significant effect on the profitability of banks. Credit risk negatively and significantly affects bank profitability, while shadow banking has a positive but insignificant effect on bank profitability. Based on these results, it can be concluded that the level of competition, ownership of assets, and risk of bad credit greatly affect the profitability of the bank.

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