Credit Diversification, Income Diversification, Credit Risk and Bank Financial Performance

(Study on Conventional Banking during the Covid-19 Pandemic)

Nunung Wulan Sari [1*], Najmudin[2], Dian Purnomo Jati[3]

[1*] Faculty of Economics and Business Universitas Jenderal Soedirman, nunung.sari@mhs.unsoed.ac.id , Indonesia
[2] Faculty of Economics and Business Universitas Jenderal Soedirman, najmudin_najmudin@yahoo.com, Indonesia
[3] Faculty of Economics and Business Universitas Jenderal Soedirman, dian.jati@unsoed.ac.id , Indonesia
*corresponding author

ABSTRACT

This study aims to analyze the effect of credit diversification and income diversification on bank financial performance by considering credit risk as a variable that moderates the relationship. The design used in this research is quantitative. The data analysis used is quantitative / statistical by testing the hypothesis. The data in this study were taken from the website www.ojk.go.id. Sampling in this study uses quarterly time series data, namely the performance reports of conventional commercial banks published by the financial services authority in Indonesia for the period March 2020 to December 2022 which are processed using the eviews version 13 application. In this study also added control variables in the form of CAR, LDR and Size. The results of this study indicate that credit diversification has a positive effect on bank financial performance, credit risk has a negative effect on bank financial performance, income diversification has a positive effect on bank financial performance, credit risk can weaken the positive effect of credit diversification and income diversification on bank performance. This research is expected to provide better understanding and insight into how credit risk can affect the relationship between credit diversification, income diversification and financial performance.

Keywords: Credit Diversification, income Diversification, Risk Credit, Performance

1. Introduction

Banks as Intermediaries function to collect funds from people who experience excess funds for storage and then channel them back in the form of credit to people who experience a shortage of funds. The role of banks as intermediaries can be considered as accelerators of economic growth (Saputra et al., 2020). In order for the intermediary function to run smoothly, banks need to maintain their performance. At this time, there are several banks that are facing the problem of declining financial performance. Financial performance is an important indicator used to measure the success and sustainability of the bank in achieving their financial goals. A decline in financial performance can hinder growth, investment, dividend payments, and reduce attractiveness to investors.

Fluctuating financial performance can also reduce the attractiveness of investors to invest. Investors may assume that the company / bank cannot maintain its financial performance to remain stable so that the risk of loss can be higher. Volatile financial performance can also make it difficult for investors to predict the company's future profitability. This uncertainty can reduce investor confidence in the potential return on investment. One of the ratios used to measure financial performance is ROA. According to (Elliyana, 2022) ROA is used as a measure of bank performance against the bank's influence on regulation, ROA is a measure of how effectively the bank operates. The following is a table of ROA ratio development:

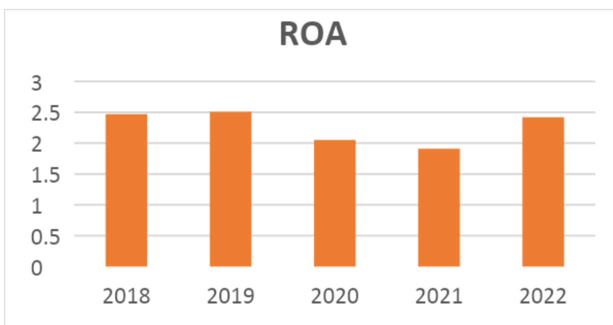


Figure 1.1
Development of ROA of Conventional Banks in 2018 - 2022
Source: OJK, Data processed (2023)

In the figure above, it can be seen that the development of Conventional Bank ROA from 2018 to 2022 fluctuates. In 2018 the Conventional Bank ROA was 2.47% and in 2019 it increased to 2.51%. However, in 2020 ROA decreased by 0.46% so that it became 2.05% and in 2021 it decreased again to 1.91%. In 2022 ROA increased again to 2.42%, although it was not as good as in 2018. The fluctuating ROA value can cause investors to hesitate to invest their funds, because investors cannot predict whether in the following year the ROA value can increase or even decrease. The fluctuating ROA value needs further research to find out what factors can affect ROA.

Banks also have high risks in improving their financial performance. In order for the risk in a bank to decrease, the bank needs to diversify. By diversifying by channeling its funds in several sectors, it is expected to minimize the risks incurred. The level of bank credit diversification can be seen from the Herfindahl Hirschman Index (HHI) value. The high HHI value indicates that the level of loan portfolio diversification is getting lower, and vice versa.

Bankruptcy risk will decrease in companies that are diversified and have broader sources of income. According to (Setiawan et al., 2023) Credit diversification has a negative effect on bank risk and return, while according to (Prastiwi & Anik, 2020) credit diversification based on high economic sectors has an impact on increasing banking profitability and reducing credit risk of Commercial Banks in Indonesia. However, according to (Ahyar, 2021) financing diversification based on the economic sector has no effect on profitability, but has an effect on risk in suppressing defaults. Research from (Baroroh, 2023) states that contract-based financing diversification affects ROA in a negative direction and has a positive effect on NPF. According to (Kusuma et al., 2023) Revenue diversification is proven to positively affect profitability as measured by ROA and ROE. Meanwhile, according to (Ikhsan & Hersugondo, 2021) shows that income diversification does not significantly affect bank profitability and risk. Research from (Kwashie et al., 2022) states that credit risk has a significant and negative effect on ROA. Research from (Wahyuni, 2023) states that credit risk has a positive effect on ROA. However, there is also research from (Anand et al., 2023) which states that credit risk has no effect on ROA.

Based on the research gap, further research will be conducted on the effect of credit diversification and income diversification on ROA. In addition, this study will bring up a moderating variable, namely credit risk. Credit risk is one of the threats that must be faced by banks. According to (Zuhdi et al., 2013) Credit risk arises because banks lend their funds so that there is a possibility that these funds will not return or bad credit occurs. High credit risk at a bank will indicate that the bank lacks expertise in managing its credit, so this will result in decreased financial performance. This study also added control variables LDR, CAR and Size to add variety to the research.

1.1 Problem Formulation

- Does credit diversification affect the financial performance of banks?
- Does credit risk affect the bank's financial performance?
- Does income diversification affect the bank's financial performance?
- Does credit risk weaken the positive effect of credit diversification on bank financial performance?
- Does credit risk weaken the positive effect of income diversification on bank financial performance?

1.2 Research Objectives

- To examine the effect of credit diversification on bank financial performance.
- Examine the effect of credit risk on bank financial performance
- Examine the effect of income diversification on bank financial performance
- Testing the moderating effect of credit risk on the effect of credit diversification on bank financial performance
- Examine the moderating effect of credit risk on the effect of income diversification on bank financial performance

2. Literature Review

2.1 Credit Diversivication

Credit diversification is an effort to reduce the potential for bank business failure as a result of the concentration of provision of funds. Diversification was born from Markowitz's Portfolio Theory (1952) cited by (Ahyar, 2021) this theory is known by the expression "Don't put all your eiggs in one basket", this expression indicates not to invest in just one type of field but also to invest in various types of fields to minimize risk and maximize profits. If banks diversify their loan portfolios into various sectors, they can minimize their risks. If banks maintain their monitoring capabilities, bank risk tends to decrease when the bank's loan portfolio is well diversified. According to (Setiawan et al., 2023) The level of bank loan portfolio diversification can be seen from the Herfindahl Hirschman Indeix (HHI) value, the high HHI value indicates that the level of loan portfolio diversification is getting lower, and vice versa. According to (Baroroh, 2023) the formula used to calculate credit diversification is :

$$HHI = \sum_{i=1}^{n} \left(\frac{Xi}{Q}\right)^2$$

Description :

HHI = "Hirschman Heirfindahl Index"
n = Number of Groups Measured
i = Measured Group
Xi = Sum of Group Financing
Q = Total Amount

2.2 Income Diversification

According to (Kusuma et al., 2023) Income diversification is a bank's effort to improve its financial performance so that it does not only depend on one type of income. According to (Setiawan & Arrafi, 2022) Banking diversification is needed when income from credit has decreased. Propositions that direct diversification to non-interest income sources will result in greater income stability and reduced risk for banks, especially if non-interest income sources are not highly correlated with traditional loan income sources (Ikhsan & Hersugondo, 2021). Non-interest income is a diversification of bank income. According to (Wityasminigsih, 2023) the formula that can be used to calculate income diversification is:

$$ID = 1 - \left(\frac{NET}{NETOP}\right)^2 + \left(\frac{NNI}{NETOP}\right)^2$$

Description:
ID = income diversification
NET = Net interest income
NETOP = Net operating income
NNI = Net non-interest income

2.3 Credit Risk

Credit According to Law no. 10 of 1998 concerning banking states that credit is the provision of debt or bills that can be equated with it, based on an agreement or loan and borrowing agreement between a bank and another party that requires the borrower to pay off his debt after a certain period of time with interest. According to (Zuhdi et al., 2013) Credit risk arises because banks lend their funds so that there is a possibility that these funds will not return or bad credit occurs. If the credit risk befalls a company, then this can cause losses, so the company needs good risk management (Verdiyani et al., 2019). The ratio used to measure credit risk is NPL (Non Performing Loan). According to Bank Indonesia circular letter Number 13/30 / DPNP dated December 16, 2011, NPL can be calculated using the following formula:

$$NPL = \frac{Credit\ problems}{Total\ credit}$$

2.4 Liquidity Risk

Liquidity measures the company's ability to meet its short-term obligations. This ratio is important because failure to pay obligations can lead to company bankruptcy. According to (Rahmawati et al., 2023) If the company is able to convert assets into cash without experiencing impairment, then the company can be said to have strong liquidity. According to Bank Indonesia circular letter Number 13/30 / DPNP dated December 16, 2011, LDR can be calculated using the following formula:

$$LDR = \frac{credit}{Third\ Party-funds}$$

2.5 Company Size

According to (Setiawan et al., 2023) Banks with large sizes can utilize their large total assets to achieve higher returns, because they have more expertise in managing their assets. According to (Paramitha & Prasetyia, 2023) Bank size is the bank's ability to channel funds as seen from the assets owned. Size provides an overview of the size of a company seen from the total assets owned by the company (Moridu et al., 2022). according to (Paramitha & Prasetyia, 2023) following research from Meslier., et.al.2014; Alkhouri., et.al.2018; Abuzayed., et.al. 2018 and previous studies, the size of the bank is the bank's ability to channel funds seen from the asset side (assets) owned. 2018 and previous studies, the bank size variable can be done by changing it in the form of the natural logarithm of the bank's total assets.

$$\text{Size} = \text{LnTA}$$

2.6 Capital ratio

Capital is the most important asset in the growth of a bank (Elliyana, 2022). According to (Dahlan, 2005) Capital Adequacy Ratio (CAR) is a capital adequacy ratio calculated by comparing the amount of capital owned by the bank with total risk-weighted assets (classifieid assets). The CAR ratio can be calculated using the formula (according to Bank Indonesia circular letter number 13/30 / DPNP dated December 16, 2011) as follows:

$$CAR = \frac{Capital}{risk-weighted\ assets}$$

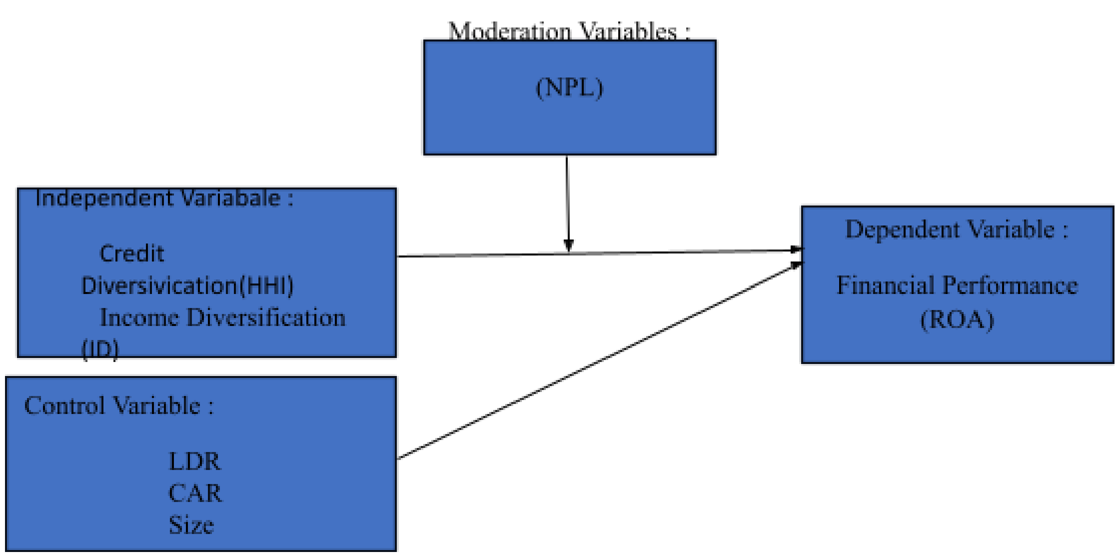
2.7 Financial Performance

According to (Brigham, 2020) Financial performance is the company's ability to generate profits large enough to meet the expectations of shareholders and pay its financial obligations. According to (Kasmir, 2021) the Profitability ratio is a ratio to assess the company's ability to seek profit. According to (Najmudin, 2013) Profitability is important for a company, it can even be more important than profit, because large profits alone do not indicate that the company's performance is efficient. One of the ratios used to measure financial performance is ROA (Return On Assets). According to Bank Indonesia circular letter number 13/30 / DPNP dated December 16, 2011, ROA can be calculated using the following formula:

$$ROA = \frac{Earning\ Before\ Tax}{Total\ Assets}$$

2.8 Research Framework & Hypothesis

Based on the background and theoretical basis, the following research framework can be formed:



Hypothesis :

H1 = Credit diversification has a positive effect on bank financial performance

H2 = Credit risk negatively affects the bank's financial performance

H3 = Income diversification has a positive effect on bank financial performance

H4 = credit risk can weaken the positive effect of credit diversification on bank performance

H5 = credit risk can weaken the positive effect of income diversification on bank performance

3. Research Methodology

3.1 Object of Research

According to Sugiyono (Sugiyono, 2021) a research variable (research object) is an attribute or trait or value of people, objects or activities that have certain variations set by researchers to study and then draw conclusions. the object of research to be studied is Conventional Banks registered with the Financial Services Authority in 2020 - 2022.

3.2 Research Type and Design

The type of research conducted in this study is applied research. According to (Sugiyono, 2021) applied research is carried out with the aim of applying, testing and evaluating the ability of an applied theory to solve practical problems. This research was conducted to test and evaluate the effect of credit diversification and income diversification on financial performance with credit risk as a moderating variable. In this study also proposed control variables in the form of LDR, CAR and Size. The design used in this research is quantitative. According to (Sugiyono, 2021), Quantitative data is data in the form of numbers. Because this research requires a lot of use of numbers starting from data collection, processing to displaying results. The data analysis used is quantitative / statistical by testing hypotheses. The object of this research refers to the performance of companies listed on the Financial Services Authority (OJK) in 2020-2022.

3.3 Population and Sample

3.3.1 Population

According to (Sugiyono, 2021), Population is a generalization area consisting of: objects / subjects that have certain quantities and characters set by researchers to study and then draw conclusions. In this study, the population used is Conventional Banks registered with the Financial Services Authority (OJK) in 2020-2022.

3.3.2 Sample

According to (Sugiyono, 2021) the sample is part of the number and characteristics possessed by the population. In this study, the sample used Conventional Banks registered with the Financial Services Authority (OJK) in 2020-2022. The data in this study were taken from the website www.ojk.go.id. Sampling in this study uses quarterly time series data, namely the performance reports of conventional commercial banks published by the financial services authority in Indonesia for the period March 2020 to December 2022 which are processed using the eviews version 13 application.

4. Result & Discussion

After the necessary data has been collected, the next step is to process the data using the eviews 13 application. Each variable in the study can be explained briefly using descriptive statistics as follows:

Tabel 1. Statistik Deskriptive

	N	Maximum	Minimum	Mean	Standar Deviasi
ROA	48	3,970000	0,540000	2,049792	1,019890
HHI	48	0,972173	0,174591	0,642235	0,274960
ID	48	0,931188	0,377831	0,712174	0,147067
NPL	48	2,400000	0,260000	0,913958	0,552205
CAR	48	25,28000	16,07000	19,36104	1,983866
SIZE	48	35,09896	33,36173	34,41361	0,557457
LDR	48	114,2200	77,61000	87,98000	6,845711

Source: OJK, Data processed (2023)

Based on the results of these descriptive statistics, it can be seen that the total samples in this study were 48 samples (taken from the Bank's financial data for 2020-2022). Based on the results of the analysis, it is known that the ROA ratio has an average value of 2.049792 and a standard deviation of 1.019890, meaning that each investment / asset generated is supported by 1.019890 net profit. The ROA variable has a minimum value of 0.54 and has a maximum value of 3.97. The second variable, namely the Herfindahl Hirschman Index (HHI), can be seen that the HHI value has a minimum value of 0.174591 and a maximum of 0.972173 with an average value of 0.642235 and a standard deviation of 0.274960. The third variable, ID, has a minimum value of 0.377831 and has a maximum value of 0.931188 with an average value of 0.712174 and a standard deviation of 0.147067. Then for the fourth variable, NPL, it has a minimum value of 0.26 and a maximum value of 2.4, while the average is 0.913958 and a standard deviation of 0.552205. The fifth variable, CAR has a maximum value of 25.28 and a minimum of 16.07, while the average is 19.36104 and a standard deviation of 1.983866. The fifth variable, Size, has a maximum value of 35.09896 and a minimum value of 33.36173, while the average is 34.41361 and the standard deviation is 0.557457. The seventh variable LDR has a maximum value of 114.2200 and a minimum value of 77.61, an average LDR of 87.98 and a standard deviation of 6.845711.

5. Conlusion

5.1 Credit diversification has a positive effect on bank financial performance

In this study it is suspected that there is a positive influence between credit diversification on bank financial performance. This is in line with research from (Prastiwi & Anik, 2020) which states that credit diversification based on high economic sectors has an impact on increasing banking profitability and reducing credit risk of commercial banks in Indonesia. In another study (Setiawan et al., 2023) also stated that credit diversification has a positive effect on financial performance.

5.2 Credit risk has a negative effect on bank financial performance

In this study, it is suspected that there is a negative influence between credit risk on bank financial performance. This is in line with research from (Kwashie et al., 2022) which states that credit risk has a significant and negative effect on ROA. Other research from (Amijaya & Alaika, 2023) and (Saputra et al., 2020) also states that credit risk has a negative effect on financial performance.

5.3 Income diversification has a positive effect on bank financial performance

In this study, it is suspected that there is a positive influence between income diversification on bank financial performance. This is in line with research from (Putra & Pangestuti, 2019) which states that income diversification has a positive effect on financial performance. In addition, other research from (Kusuma et al., 2023) and (Setiawan & Arrafi, 2022) also states that income diversification has a positive effect on profitability.

5.4 Credit risk can weaken the positive effect of credit diversification on bank performance

In this study it is suspected that credit risk can weaken the positive influence between credit diversification on bank financial performance. In research from (Amijaya & Alaika, 2023) states that credit risk has a negative effect on financial performance. According to (Setiawan et al., 2023) states that credit diversification has a negative effect on credit risk. Then research from (Prastiwi & Anik, 2020) states that credit diversification has a positive effect on financial performance. This means that when credit diversification increases, the bank's financial performance will increase, however, when credit risk has a negative effect on performance and diversification, this will weaken the positive effect of the bank's financial performance.

5.5 Credit risk can weaken the positive effect of income diversification on bank performance

In this study it is suspected that credit risk can weaken the positive influence between income diversification on bank financial performance. According to research from (Kwashie et al., 2022) states that credit risk has a negative effect on ROA. Research from (Kusuma et al., 2023), income diversification is proven to positively affect profitability as measured by ROA and ROE. This means that when income diversification increases, the bank's financial performance will also increase. However, credit risk will decrease so that this will weaken the positive influence between income diversification on bank financial performance.

6. References

Ahyar, M. K. (2021). *Efek Diversifikasi Pembiayaan Sektor Ekonomi Syariah Di Indonesia*. *2*(2), 197–211.

Amijaya, R. N. F., & Alaika, R. (2023). Does Financial Risk Matter for Financial Performance in Sharia Banks? *Jurnal Ilmu Ekonomi Terapan*, *8*(1), 24–40. https://doi.org/10.20473/jiet.v8i1.44675

Anand, D., Budianto, E., Swadaya, U., & Jati, G. (2023). *IMPACT OF INFLATION AS A CREDIT RISK MODERATOR ON THE*. *12*(01), 1402–1406.

Baroroh, H. (2023). *Activity Diversification , Performance , and Profitability in Islamic Banking*. *9*(02), 1920–1927.

Brigham, houston. (2020). *Dasar -Dasar Manajemen Keuangan* (Y. Setyaningsih (ed.); Edisi 14). Salemba Empat.

Dahlan, S. (2005). *Manajemen Lembaga Keuangan*.

Elliyana, E. (2022). Performance of Conventional Banking, Impact of Indonesia's National Economic Recovery Program Due to the Covid 19 Pandemic. *Business and Entrepreneurial Review*, *22*(1), 63–72. https://doi.org/10.25105/ber.v22i1.13700

Ikhsan, S., & Hersugondo, H. (2021). Diversifikasi Pendapatan Terhadap Profitabilitas Dan Risiko Bank Di Indonesia Selama Pandemi Covid-19. *Dinamika Akuntansi Keuangan Dan Perbankan*, *10*(1), 76–83. https://doi.org/10.35315/dakp.v10i1.8543

Kasmir. (2021). *Analisis Laporan Keuangan* (Edisi Revi). PT. Rajagrafindo Persada.

Kusuma, S. Y., Wahyuni, M., & Rikawati. (2023). DIVERSIFIKASI PENDAPATAN, PERAN KBMI DAN USIA PADA PROFITABILITAS BANK YANG TERDAFTAR DI BEI SELAMA PANDEMI. *Jurnal Riset Akuntansi*, *13*(1), 43–58.

Kwashie, A. A., Baidoo, S. T., & Ayesu, E. K. (2022). Investigating the impact of credit risk on financial performance of commercial banks in Ghana. *Cogent Economics and Finance*, *10*(1). https://doi.org/10.1080/23322039.2022.2109281

Moridu, I., Johan, W., Andi Cakranegara, P., Widyawati, N., & Ernayani, R. (2022). Analysis of the role of liquidity, npl, diversification and size to the profitability of banking companies listed on bei. *Journal of Economic, Business and Accounting*, *6*, 855–863.

Najmudin, H. M. N. J. J. N. (2013). Pengaruh Current Ratio, Debt To Total Asset Ratio, Total Asset Turnover (Tato), Beban Operasional Pendapatan Operasional (Bopo), Dan Dana Pihak Ketiga (Dpk) Terhadap Profitabilitas Bank Umum Syariah. *Performance: Jurnal Personalia, Financial, Operasional, Marketing Dan Sistem Informasi*, *Vol 17 No 1 (2013): Performance*, 75–84. http://jos.unsoed.ac.id/index.php/performance/article/view/794/593

Paramitha, D., & Prasetyia, F. (2023). PENGARUH DIVERSIFIKASI PENDAPATAN, UKURAN BANK DAN KOMPETISI BANK TERHADAP PROFITABILITAS BANK UMUM SYARIAH. *ISLAMIC ECONOMICS AND FINANCE IN FOCUS*, *2*(2), 219–232.

Prastiwi, I. E., & Anik, A. A. (2020). Diversifikasi Kredit, Monitoring, Dan Kinerja Perbankan Di Indonesia. *Jurnal Ilmiah Ekonomi Islam*, *6*(1), 80–86. https://doi.org/10.29040/jiei.v6i1.775

Putra, A. M., & Pangestuti, I. R. D. (2019). Pengaruh Struktur Pasar, Kompetisi, Diversifikasi dan Risiko Kredit Terhadap Profitabilitas Bank dengan Bank Size sebagai Variabel Kontrol. *Diponegoro Journal of Management*, *8*(1), 117–125. http://ejournal-s1.undip.ac.id/index.php/djom

Rahmawati, I. Y., Najmudin, Adawiyah, W. R., Jayanti, E., Berniz, Y. M., & Utami, Y. (2023). Financial Ratios and Corporate Governance's Impact on Financial Performance in the Indonesian Stock Market: The Case in Manufacturing Industry. *Asian Journal of Economics, Business and Accounting*, *23*(17), 1–12. https://doi.org/10.9734/ajeba/2023/v23i171037

Saputra, A. A., Najmudin, & Shaferi, I. (2020). the Effect of Credit Risk, Liquidity Risk and Capital Adequacy on Bank Stability. *Sustainable Competitive Advantage (SCA)*, *10*(1), 153–162.

Setiawan, R., & Arrafi, A. N. (2022). *Risiko Bank Pada Bank Umum Konvensional Di Indonesia Selama Pandemi Covid-19*. *10*(2).

Setiawan, R., Putri, O. R., & Sukmawati, A. C. (2023). Diversifikasi Portofolio Kredit, Risiko dan Return Bank. *Jurnal Akuntansi*, *15*(1), 189–199. https://doi.org/10.28932/jam.v15i1.6376

Sugiyono. (2021). *Statistika untuk penelitian*. Alfabeta.

Verdiyani, A., Banani, A., & Najmudin. (2019). THE EFFECT OF CREDIT RISK MANAGEMENT ON FINANCIAL PERFORMANCE OF THE INDONESIAN COMMERCIAL BANKS. *International Conference on Rural Development and Entrepreneurship*, *Vol 5*, *No.*

Wahyuni, lailatus S. & S. (2023). Pengaruh Car, Npl, Bopo, Dan Ldr Terhadap Return On Asset (Roa) Pada Perusahaan Sub-Sektor Perbankan Yang Terdaftar Di Bursa Efek Indonesia (Bei). *Jurnal Penelitian Mahasiswa*, *Vol. 2 No.*

Wityasminigsih, E., & Artikel, I. (2023). *THE EFFECT OF DIVERSIFICATION ON PERFORMANCE AND (Case on Shariah Bank in Indonesia Period 2019-2020)*. *05*, 18–27.

Zuhdi, R., Rabiatul, W., Fakultas, N., & Unsoed, E. (2013). *ANALISIS PORTOFOLIO KREDIT PERBANKAN UMUM DAN SYARIAH BERDASARKAN SEKTOR EKONOMI*. *12*, 1–10.

www.idx.go.id