The Effect of Nim, Npl, Firm Size and Exchange Rate on Profitability with Car as an Intervening Variable in the Company Conventional Banking Sector Registered In Indonesia Stock Exchange 2015-2019 Period

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Abstract
Purpose: The purpose of this study was to determine the effect of NIM, NPL, Firm Size and Exchange Rate on ROA with CAR as the intervening variable. The problem in this research is the finding of inconsistencies between theory and the phenomena behind the change in ROA.
Methods: The data analysis method used in this study is multiple linear regression analysis, classical assumption test, and Sobel test to determine the effect of mediation (intervening).
Findings: Based on the results of the study, it is known that NIM has no effect on CAR with a significance value of 0.092 ≥ 0.05 and NIM has an effect on ROA with a significance value of 0.000 ≤ 0.05. NPL has an effect on CAR with a significance value of 0.006 ≤ 0.05 and NPL has an effect on ROA with a significance value of 0.000 ≤ 0.05. Firm Size has an effect on CAR with a significance value of 0.021 ≤ 0.05, and Firm Size has an effect on ROA with a significance value of 0.002 ≤ 0.05 and Exchange Rate has no effect on CAR with a significance value of 0.757 ≥ 0.05 and Exchange Rate has no effect on ROA with a significance value of 0.949 ≥ 0.05. Meanwhile, for the two regressions, NIM, NPL, Firm Size and Exchange Rate have a simultaneous effect on CAR and ROA with a significance value of 0.001 and 0.000. Based on the results of the Sobel test and t arithmetic, it was found that the CAR variable was not able to mediate the effect of NIM, NPL, Firm Size and Exchange Rate on ROA.
Originality: This study adds an intervening variable (mediation) in order to determine whether CAR is able to mediate the effect of NIM, NPL, Firm Size and Exchange Rate on ROA.

Keywords: Net Interest Margin (NIM); Non Performing Loan (NPL); Capital Adequacy Ratio (CAR); Return On Assets (ROA); Firm Size; Exchange Rate

1. INTRODUCTION

Nowadays, the competition in the banking industry in Indonesia is getting tougher which has led to an innovation and expansion in the financial industry to increase profitability. Ridwan (2016) said that conventional banks must maximize their financial performance well, especially while maintaining and increasing profitability so that they can increase and can also distribute dividends appropriately, and maintain performance in the form of prospects. his efforts. so that. Keep going. well developed. The following is the dynamics of the movement of conventional banking financial ratios for the 2015-2019 period.

Table 1
Movement of conventional banking financial ratios for the 2015-2019 period

	Ratios (%)			
Tahun	**NIM**	**NPL**	**CAR**	**ROA**
2015	5,12	1,61	18,21	1,42
2016	5,18	1,75	20,91	1,04
2017	5,00	1,94	22,13	1,11
2018	4,89	1,90	21,75	1,47
2019	4,35	2,18	21,47	1,25

Source: www.idx.co.id

Based on table 1 above, it can be found that there are inconsistencies, where the NIM in 2015 and 2016 increased by 5.12% and 5.18%, respectively. ROA decreased significantly by 1.42% and 1.04%. However, in 2017 and 2018 NIM decreased by 5.00% and 4.89, but ROA actually increased significantly by 1.11% and 1.47%, respectively. Then the NPL ratio also increases every year, in 2017 and 2018 the NPL ratio was 1.94% and 1.90 and ROA increased by 1.11% and 1.47%, respectively. Furthermore, the CAR ratio increased in 2015 and 2016 by 18.21% and 20.91% and ROA actually decreased in 2015 and 2016 by 1.42% and 1.04%, the same thing also happened in 2018 and 2019 where CAR fluctuated by 21.75% and 21.47%, but ROA actually decreased in 2018 and 2019 by 1.47% and 1.25%. Then the Return on Assets (ROA) also fluctuated with the lowest ROA ever recorded at 1.04%. (source: www.idx.co.id).

Based on the above problems, the topic of this research is about banking financial ratios, namely profitability as proxied by ROA. The purpose of this study is to determine the effect of banking financial ratios, namely NIM and NPL, while external factors that affect profitability performance (ROA) are Firm Size and Exchange Rate. And the addition of the intervening variable (mediation) is the Capital Adequacy Ratio.

2. LITERATURE REVIEW

There are several literature studies related to financial performance and at the same time the background for this research, namely research conducted by Pamularsih (2015) which shows that NIM does not significantly affect profitability, CAR has no effect on profitability. Further research was put forward by Fibrianti (2020) which showed that CAR had an effect on profitability, NPL had no effect on profitability, NIM had an effect on profitability. Research conducted by Ismadi (2019) shows that CAR has no effect on profitability, NIM has no effect on profitability, NPL has no effect on profitability, Size has no effect on profitability. Subsequent research by Praja (2019) stated that size has an effect on profitability, CAR has an effect on profitability, NPL has an effect on profitability. Research conducted by Swandayani (2012) states that the Foreign Exchange Rate has an effect on profitability. However, it is different from the research conducted by Prastowo (2018) which states that inflation, interest rates, and exchange rates have no effect on profitability. The literature review that has been described previously found some inconsistencies that affect the profitability ratio. So this research will have an impact and at the same time provide evidence about what internal and external factors affect the level of bank profitability, then the intervening variable (mediation) is added.

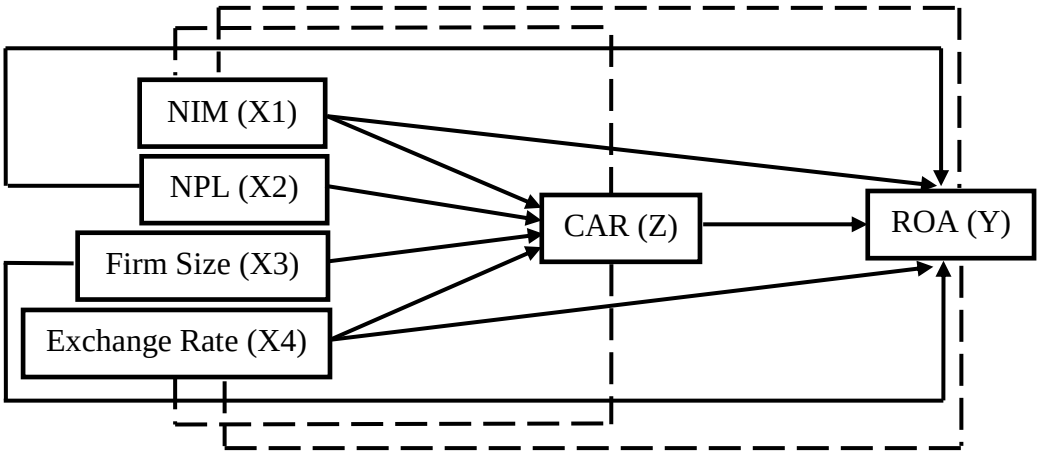

Figure 1. Conceptual Framework

Hypothesis

H1 : NIM has an effect on CAR in conventional banking sector companies listed on the Indonesia Stock Exchange for the 2015-2019 period.
H2 : NPL affects CAR in conventional banking sector companies listed on the Indonesia Stock Exchange for the 2015-2019 period.
H3 : Firm Size has an effect on CAR in conventional banking sector companies listed on the Indonesia Stock Exchange for the 2015-2019 period.
H4 : Exchange rate affects the CAR of conventional banking sector companies listed on the Indonesia Stock Exchange for the 2015-2019 period.
H5: NIM, NPL, Firm Size and Exchange Rate simultaneously affect ROA in conventional banking sector companies listed on the Indonesia Stock Exchange for the 2015-2019 period.
H6 : CAR has an effect on ROA in conventional banking sector companies listed on the Indonesia Stock Exchange for the 2015-2019 period.
H7: NIM has an effect on ROA through CAR as an intervening variable in conventional banking sector companies listed on the Indonesia Stock Exchange for the 2015-2019 period.
H8 : NPL has an effect on ROA through CAR as an intervening variable in conventional banking sector companies listed on the Indonesia Stock Exchange for the 2015-2019 period.
H9: Firm Size has an effect on ROA through CAR as an intervening variable in conventional banking sector companies listed on the Indonesia Stock Exchange for the 2015-2019 period.
H10: Exchange rate has an effect on ROA through CAR as an intervening variable in conventional banking sector companies listed on the Indonesia Stock Exchange for the 2015-2019 period.
H11: NIM, NPL, Firm Size and Exchange Rate simultaneously affect ROA through CAR as an intervening variable in conventional banking companies listed on the Indonesia Stock Exchange for the 2015-2019 period.

3. RESEARCH METHOD

The research method to be carried out in this study is the associative method with a quantitative approach. The data used in this study are secondary data or financial statements of conventional banking companies listed on the BEI (2015-2019 period) and at the same time become the population in this study, then the sample was selected based on the criteria (Purposive Sampling) so that 27 samples were found that met the criteria. conventional banking issuers. While the test equipment used in this study is using multiple linear regression, classical assumption test, coefficient of determination, regression validity test, path analysis and Sobel test to determine the effect of mediation, as well as partially test (t test) and simultaneously (f test).

4. RESULTS AND DISCUSSION

The following are the results of an analysis of the effect of NIM, NPL, Firm Size and Exchange Rate on ROA with CAR as the intervening variable, the software used is SPSS version 16.

a. Substructural Path Analysis 1

Table 2
Substructural Regression Output I

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std.Error	Beta		
1	(Constant)	9.998	14.514		.689	.492
	NET INTEREST MARGIN	.409	.241	.147	1.700	.092
	NON PERFORMING LOAN	-1.048	.376	-.240	-2.784	.006
	FIRM SIZE	.269	.115	.193	2.336	.021
	EXCHANGE RATE	.000	.001	.025	.310	.757

a. Dependent Variable: CAPITAL ADEQUACY RATIO

Z = 9,998 + 0,147.NIM + -0,240.NPL + 0,193.Firm Size + 0,025.Exchange Rate + e1

b. Substructural Path Analysis 2

Table 3
Substructural Regression Output II

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-2.752	2.583		-1.065	.289
	NET INTEREST MARGIN	.435	.043	.592	10.063	.000
	NON PERFORMING LOAN	-.406	.069	-.352	-5.900	.000
	FIRM SIZE	.067	.021	.183	3.210	.002
	EXCHANGE RATE	.000	.000	.033	.605	.546
	CAPITAL ADEQUACY RATIO	-.001	.016	-.004	-.065	.949

a. Dependent Variable: PROFITABILITAS

Y = -2,752 + 0,592.NIM + -0,352.NPL + 0,183.Firm Size + 0,033.Exchange Rate + -0,004.CAR + e2

1. Partial Test (t test)

Table 4
Results of Substructural Regression I and II

Regression	Independent Variable	Significance	Decision
I	NIM	0,092	H0 is accepted and Ha is rejected
	NPL	0,006	H0 is rejected and Ha is accepted
	Firm Size	0,021	H0 is rejected and Ha is accepted
	Exchange Rate	0,757	H0 is accepted and Ha is rejected
II	NIM	0,000	H0 is rejected and Ha is accepted
	NPL	0,000	H0 is rejected and Ha is accepted
	Firm Size	0,002	H0 is rejected and Ha is accepted
	Exchange Rate	0,546	H0 is accepted and Ha is rejected
	CAR	0,949	H0 is accepted and Ha is rejected

Source: The research results are processed by the author

1. Substructural Effect I

H1: Effect of Net Interest Margin on Capital Adequacy Ratio

From the partial regression results, it was found that NIM had no effect on CAR with a significance value of 0.092 0.05. So H0 was accepted and Ha was rejected. This indicates that the bank's interest income generated from Risk Weighted Assets (RWA) or funds embedded in credit (loans) is intended to keep the bank stable when credit relief is being carried out (debt restructuring).

H2: Effect of Non Performing Loan on Capital Adequacy Ratio

From the results of substructual regression I, it was found that NPL had an effect on CAR with a significance value of 0.006 0.05. So H0 is rejected and Ha is accepted. One of the bank's efforts to minimize the high NPL is by way of credit restructuring such as foreclosure or Foreclosed Collateral (AYDA). This is in accordance with research conducted by Choerudin (2016) that NPL has an effect on CAR. On the other hand, a contradictory study conducted by Supeni (2019) found that NPL had no effect on CAR.

H3: Effect of Firm Size on Capital Adequacy Ratio

From the results of Substructural regression I, it was found that Firm Size had an effect on CAR with a significance value of 0.021 0.05. So H0 is rejected and Ha is accepted. This indicates that if total assets experience an increase, the bank's management must be careful in allocating its productive assets, it is feared that the adequacy of the embedded capital could have an impact on the declining CAR. This is of course supported by research conducted by Dewi (2017) which states that Size has an effect on CAR. On the other hand, the inconsistent research conducted by Margaretha (2011) stated that bank size (size) had no effect on CAR.

H4: Effect of Exchange Rate on Capital Adequacy Ratio

From the results of Structural regression II, it was found that the exchange rate had no effect on CAR with a significance value of 0.757 0.05. So H0 is accepted and Ha is rejected.

2. Substructural Effect II

H5: Effect of Capital Adequacy Ratio on Profitability

From the regression results, it was found that CAR had no effect on ROA with a significance value of 0.949 0.05. So H0 is accepted and Ha is rejected. If the CAR is too high, if it is not accompanied by the distribution of funds as well as for efficient and good investment activities, then the CAR will not affect ROA. The results of this study are in line with those conducted by Pamularsih (2015) and Ismadi (2019) that CAR has no effect on ROA. On the other hand, the results of research that are not in line with Praja (2019) and Fibrianti (2020) show that CAR has an effect on ROA.

H6: Effect of Net Interest Margin on Profitability

From the regression results, it was found that NIM had an effect on ROA with a significance value of 0.000 0.05. So H0 is rejected and Ha is accepted. Bank management in managing or managing its productive assets to generate net interest income from its operations is regulated properly and efficiently. So that assets in the form of large loans will increase ROA. The

results of this study are in line with those of Fibrianti (2020) that NIM has an effect on ROA. However, the results of research that are not in line with Pamularsih (2015) show that NIM has no effect on ROA.

H7: The Effect of Non-Performing Loans on Profitability

From the regression results, it was found that NPL had an effect on ROA with a significance value of 0.000 0.05. So H0 is rejected and Ha is accepted. The results of this study illustrate that if the non-performing loans are higher, of course the ROA obtained will be smaller. The increase will affect the bank's profitability. A high NPL will also illustrate the poor quality of credit provided by banks. The results of this study are in line with those conducted by Praja (2019) and Pamularsih (2015) that NPL has an effect on ROA. The results of research that are not in line with Fibrianti (2020) and Ismadi (2019) are that NPL has no effect on ROA.

H8: Effect of Firm Size on profitability

From the regression results, it was found that Firm Size had an effect on ROA with a significance value of 0.002 0.05. So H0 is rejected and Ha is accepted. The results of this study illustrate that companies that have a large number of assets will remain stable. Large assets can also be managed and utilized to increase ROA such as channeling in the form of credit, deposits and other investments. So that these assets can continue to grow profits and of course will increase ROA. The results of this study are in line with those conducted by Praja (2019) that Firm Size has an effect on ROA. The results of research that are not in line with Ismadi (2019) that Firm Size has no effect on ROA.

H9: Effect of Exchange Rate on profitability

From the regression results, it was found that the exchange rate had no effect on ROA with a significance value of 0.546 0.05. So H0 was accepted and Ha was rejected. The results of this study illustrate that if the exchange rate increases, the level of profit will decrease. However, in foreign exchange buying and selling activities, the bank will certainly get the exchange rate difference from these activities and of course ROA will continue to grow. The results of this study are similar to those of Prastowo (2018) that the exchange rate has no effect on ROA. However, the results of research that are not in line with are carried out by Swandayani (2012) that the Exchange Rate has an effect on ROA.

1. Simultan Test (f test)

Table 5
Substructural Regression Output I

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	304.615	4	76.154	5.261	.001
	Residual	1881.724	130	14.475		
	Total	2186.340	134			

a. Predictors: (Constant), NILAI TUKAR, FIRM SIZE, NON PERFORMING LOAN, NET INTEREST MARGIN

b. Dependent Variable: CAPITAL ADEQUACY RATIO

Based on the results of the output of substructural regression I, it was found that the effect of NIM, NPL, Firm Size and Exchange Rate on CAR had a simultan effect with a significance value of 0.001 0.05.

Table 6
Substructural Regression Output II

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	93.309	5	18.662	40.842	.000
	Residual	58.943	129	.457		
	Total	152.252	134			

a. Predictors: (Constant), CAPITAL ADEQUACY RATIO, NILAI TUKAR, FIRM SIZE, NET INTEREST MARGIN, NON PERFORMING LOAN

b. Dependent Variable: PROFITABILITAS

Based on the results of the output of substructural regression II, it was found that the effect of NIM, NPL, Firm Size and Exchange Rate on ROA had a simultan effect with a significance value of 0.000 0.05.

2. Path Analysis

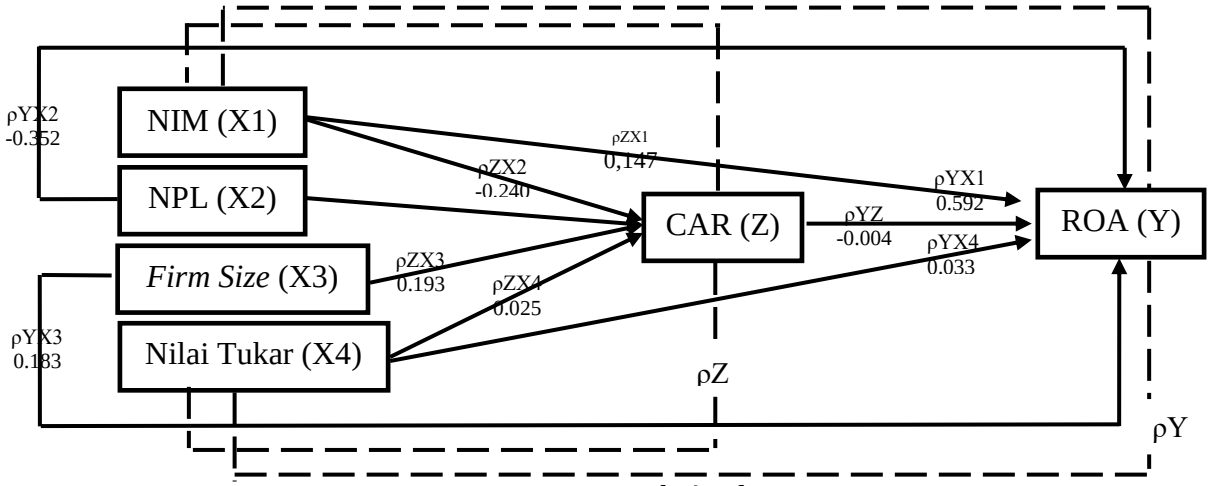

Figure 2. Path Analysis
Source: data processed by the author

Based on Figure 1 above, it can be seen that the relationship between path analysis or influence is direct, indirect and total influence. The following are the calculation parameters, which are as follows:

1. Parameters for calculating path analysis

Table 7
Influence direct, indirect and total influence

Variable		Direct Influence	Effect of Intervening (Mediation) through CAR		Indirect Influence	Total Influence
NIM	X to	0.147	NIM		-0.000588	0.591412
NPL	CAR	-0.240				
Firm Size	(ρ2)	0.193	NPL		0.00096	-0.35104
Exchange Rate		0.025		ROA		
NIM		0.592	Firm Size		-0.000772	0.182228

NPL Firm Size Exchange Rate CAR	X to ROA (ρ1)	-0.352 0.183 0.033 -0.004	Exchange Rate		-0.0001	0.0329

Source: data processed by the author

3. Sobel Test

The following are the calculation parameters for the Sobel test and the mediation t value, namely:

Table 8
Parameter Calculation of Sobel Test and t count

Variable	Sobel Test	t count	t table	Decision
NIM	-0.23132402	0.00254189	1.97769	H7 rejected
NPL	0.23278206	0.00412402	1.97769	H8 rejected
Firm Size	-0.24727155	0.00312207	1.97769	H9 rejected
Exchange Rate	-0.24998750	0.00400020	1.97769	H10 rejected

Source: data processed by the author

Based on table 4 calculation of Sobel test and t count, it can be concluded that:

a. The calculated t1 value of 0.00254189 is smaller than the t table of 1.97769 with a significance level of 0.05, so it can be concluded that the t-count value of 0.00254189 is not significant. So that the Capital Adequacy Ratio variable cannot mediate between Net Interest Margin and profitability. Then H7 is rejected.
b. The calculated t2 value of 0.00412402 is smaller than the t table of 1.97769 with a significance level of 0.05, so it can be concluded that the calculated t value of 0.00412402 is not significant. So that the Capital Adequacy Ratio variable cannot mediate between Non-performing Loans on profitability. Then H8 is rejected.
c. The calculated t3 value of 0.00312207 is smaller than the t table of 1.97769 with a significance level of 0.05, it can be concluded that the calculated t value of 0.00312207 is not significant. So that the Capital Adequacy Ratio variable cannot mediate between Firm Size and profitability. Then H9 is rejected.
d. The calculated t4 value of 0.00400020 is smaller than the t-table of 1.97769 with a significance level of 0.05, so it can be concluded that the calculated t-value of 0.00400020 is not significant. So that the Capital Adequacy Ratio variable cannot mediate between the Exchange Rate and profitability. Then H10 is rejected.

5. CONCLUSION

Based on the results of the regression equations I and II, it is known that NIM has no effect on CAR with a significance value of 0.092 ≥ 0.05 and NIM has an effect on ROA with a significance value of 0.000 ≤ 0.05. NPL has an effect on CAR with a significance value of 0.006 ≤ 0.05 and NPL has an effect on ROA with a significance value of 0.000 ≤ 0.05. Firm

Size has an effect on CAR with a significance value of 0.021 ≤ 0.05, and Firm Size has an effect on ROA with a significance value of 0.002 ≤ 0.05 and Exchange Rate has no effect on CAR with a significance value of 0.757 ≥ 0.05 and Exchange Rate has no effect on ROA with a significance value of 0.949 ≥ 0.05. based on the results of the Sobel test and t arithmetic, it was found that the CAR variable was not able to mediate the effect of NIM, NPL, Firm Size and Exchange Rate on ROA. One of the bank management's efforts to increase profitability (ROA) is to pay attention to the adequacy of the capital that has been issued, of course the bank management in managing all of its productive assets must reconsider the risks that will arise so that later bad loans do not increase which will have an impact on declining profitability. High capital adequacy is also not good if it does not minimize the resulting credit risk. Therefore, the management must send reliable human resources to manage and manage finances well so that profitability continues to grow and develop in fulfilling its operational activities.

REFERENCES

Choerudin, A. (2016). Pengaruh *Non Performing Loan* (NPL) dan *Loan Deposit Ratio* LDR) terhadap *Return On Asset* (ROA) dengan *Capital Adequacy Ratio* (CAR) sebaga variabel intervening. *Jurnal Ekonomi dan Perbankan*.

Dewi, A. R. (2017). Pengaruh *Size*, Likuiditas, Risiko Kredit dan Rentabilitas terhadap Rasio Kecukupan Modal. *Jurnal Manajemen Unud*.

Fibrianti, Y. V. (2020). Pengaruh CAR, NPL, NIM, BOPO dan LDR terhadap profitabilitas bank umum swasta nasional devisa. *Jurnal Sains Sosio Humaniora*.

Ismadi. (2019). Analisis Pengaruh *Capital Adequacy Ratio* (CAR), *Net Interest Margin* (NIM), *Non Performing Loan* (NPL), Biaya Operasional Terhadap Pendapatan Operasional (BOPO), *Loan to Deposit Ratio* (LDR) dan *Size* terhadap profitabilitas. *Journal Economic & Business*.

Margaretha, F. (2011). Pengaruh Resiko, Kualitas Manajemen, Ukuran dan Likuiditas Bank terhadap *Capital Adequacy Ratio* Bank-Bank yang terdaftar di Bursa Efek Indonesia. *Jurnal Ekonomi dan Bisnis*.

Pamularsih, D. (2015). Pengaruh LDR, NPL, NIM, BOPO, CAR dan SUKU BUNGA terhadap profitabilitas pada sektor perbankan yang terdaftar di Bursa Efek Indonesia Periode tahun 2009-2013. *Journal Economic & Business*.

Praja, N. B. (2019). Pengaruh Ukuran Perusahaan, Capital Adequacy Ratio, Loan to Deposit Ratio dan *Non Performing Loan* terhadap profitabilitas bank umum swasta nasional devisa yang terdaftar di Indonesia Periode 2012-2016. *Jurnal Ilmu Manajemen*.

Prastowo, P. R. (2018). Analisis Pengaruh Inflasi, Suku Bunga dan Nilai Tukar terhadap profitabilitas perbankan. *e-jurnal Riset Manajemen.*

Ridwan, M. (2016). Pengaruh *Intellectual Capital*, *Capital Adequacy Ratio* (CAR), *Non Performance Financing* (NPF), dan *Financing to Deposit Ratio* (FDR) Terhadap Profitabilitas Bank Umum Syariah di Indonesia. *Journal Economic & Business*.
Ridwan, M. (2016). Pengaruh *Intellectual Capital*, *Capital Adequacy Ratio* (CAR), *Non Performance Financing* (NPF), dan *Financing to Deposit Ratio* (FDR) Terhadap Profitabilitas Bank Umum Syariah di Indonesia. *Journal Economic & Business*.

Supeni, N. (2019). Pengaruh NPL dan LDR terhadap ROA PT. Bank Rakyat Indonesia. Tbk dengan CAR sebagai variabel *intervening*. *Jurnal ekonomi dan Bisnis*.

Swandayani, D. M. (2012). Pengaruh Inflasi, Suku Bunga, Nilai Tukar Valas dan Jumlah Uang Beredar terhadap profitabilitas pada perbankan syariah di Indonesia Periode 2005-2009. *jurnal Akrual*.