



---

## Determinants of Regional Development Banks' Net Interest Margin in Indonesia with NPL as Intervening Variable

I Kadek Bagiana<sup>a\*</sup>, I Wayan Ramantha<sup>b</sup>, Anak Agung Gde Putu Widanaputra<sup>c</sup>, I Gde Ary Wirajaya<sup>d</sup>

<sup>a,b,c,d</sup>Department of Accounting, Udayana University, Bali, Indonesia

<sup>a</sup>Email: [ikadekbagiana@yahoo.com](mailto:ikadekbagiana@yahoo.com)

### Abstract

Banks as a driver of the national economy of a country should in a right condition to be able to run their intermediation function properly. One of the bank's performance and health level assessments can use NIM. The banking NIM in Indonesia is being the highest in among the ASEAN countries. The aim at this study is to examine and provide empirical evidence of determinants of NIM either from internal factors such as AG or external factors such as inflation and GDPG and NPL's role as an intervening variable. The location of this study is RDB throughout Indonesia, in particular using data onto 2013 to 2017. The technique of determining the sample used was purposive sampling technique, so obtained as many as 19 RDB with a total of 95 data observations. The analysis technique used was path analysis with software SmartPLS version 3.2.7. The results showed that AG had a negative effect on NPL, conversely Inflation and GDPG had no effect on NPL. In the meantime, Inflation had a positive effect on NIM, however NPL have a negative effect on NIM, conversely AG and GDPG had no effect on NIM. Furthermore, the NPL mediates the effect of AG on the NIM, however the NPL does not mediate the effect of Inflation and GDPG on the NIM.

**Keywords:** Net Interest Margin; Non Performing Loan; Asset Growth; Inflation; Gross Domestic Product Growth; Regional Development Bank.

---

\* Corresponding author.

**1. Introduction**

One of the important roles of banks is being able to support the country's economy. Banking management and development has become the focus of many parties, because banking is an intermediary or liaison institution between parties who have funds and those who need funds. The intermediation processes to occur wherefore of the fund owner entrusts his funds to the bank with various forms of deposits and the bank distributes it to the recipient of funds of the form of credit [12]. Banks as a driver of the national economy of a country should in a right condition to be able to run their intermediation function properly. One of the bank's performance and health level assessments can use Net Interest Margin (NIM). This study uses the NIM as a proxy in measuring financial performance wherefore banks rely on credit interest in their operations. A high NIM making Indonesia an attractive market and desirable for foreign markets, moreover rotating customers' money in Indonesia promises the biggest profits [28]. A high NIM does not always mean positive. The high NIM shows high income from bank loan interest, but higher loan interest rates will be a burden for business people. Table 1 below illustrates the NIM in ASEAN countries. If viewed as an entire, NIM in Indonesia is the highest compared to NIM in other ASEAN countries.

**Table 1:** Comparison of NIM between ASEAN Countries

<b>Country</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>Average</b>
Indonesia	6.41	6.09	5.61	6.60	6.77	6.33	5,87	5.18	5.86	5.82	6.05
Cambodia	5.88	5.90	6.47	5.32	4.93	5.29	5,18	5.05	7.10	5.92	5.70
Brunei Darussalam	5.37	5.65	6.67	5.95	6.18	5.45	5,66	5.15	5.49	4.24	5.58
Lao PDR	4.02	1.68	8.48	4.37	1.62	3.82	5,01	4.94	2.94	2.31	3.92
Philippines	3.75	4.31	3.56	3.89	4.07	3.73	3,49	3.24	3.70	3.58	3.73
Vietnam	3.57	3.41	3.65	3.16	3.36	3.99	3,62	3.07	2.86	2.93	3.36
Thailand	3.54	3.56	3.49	3.24	3.25	2.89	2,94	2.80	3.26	3.07	3.20
Myanmar	0.19	2.65	1.79	0.26	7.92	3.91	4,07	...	0.67	1.59	2.56
Malaysia	1.54	1.93	2.31	2.59	2.84	4.94	2,89	2.59	1.99	1.72	2.53
Singapore	1.87	1.89	2.23	1.94	1.77	1.61	1,65	1.59	1.74	1.59	1.79

Source: Global Financial Development Database [27]

The bank examined in this study is the Regional Development Bank (RDB). RDB as one of the banks of the national banking system has a significant function and role in the context of regional economic development wherefore the RDB opens a service network of the regions. The small-scale of RDB business are actually more efficient compared to large national or international banks [26]. Banks in Indonesia generally rely on credit interest income as the main income to finance their operations. In reality, not all of the loans disbursed are free of risk, some credit has a considerable risk and can threaten the health of the bank. One measure of banking risk is Non Performing Loan (NPL). Banks need to know in detail what factors influence the NIM, both bank

internal factors such as Asset Growth (AG) and bank external factors such as Inflation and Gross Domestic Product Growth (GDPG), thus the bank can reduce the NIM to a certain level in accordance with the policies of the Financial Services Authority of Indonesia (OJK).

## **2. Literature Review and Hypotheses**

### ***2.1. Managerial Efficiency Theory of Profits***

This theory emphasizes that managing the company efficiently will get a profit above the normal average profit. A company can achieve profit above normal if the company manages to do efficiency in various fields. In accordance with the concept, the company will benefit from managerial efficiency, because business orientation emphasizes business services that can provide benefits and satisfaction. This theory argues that companies operating at an average level of efficiency can avoid losses [25].

### ***2.2. Net Interest Margin***

This study uses NIM as a proxy to measure the amount of net interest income obtained by banks in using assets. The NIM shows how well the ability of management and bank staff to earn income, especially from credit and investment, compared to costs that basically come from deposit interest [24]. Bank obtains net interest income from the difference between the interest on loans obtained from loan activities and the interest in deposits paid to the community because they have deposited their funds of the bank, while productive assets are assets that are able to generate interest income such as channeled assets in the form of loans, securities, placement of funds between banks and so on [4].

### ***2.3. Non-Performing Loan***

NPL is a measure of the extent to which non-performing loans can be overcome by productive assets owned by banks. The smaller the NPL, the smaller the credit risks borne by the bank, thus the bank's performance and bank functions function properly and conversely [24]. Banks should monitor the use of credit as well as the ability and compliance of the debtor in fulfilling its obligations. The Bank conducts a review, assessment and binding of guarantees to minimize credit risk [2].

### ***2.4. Asset Growth***

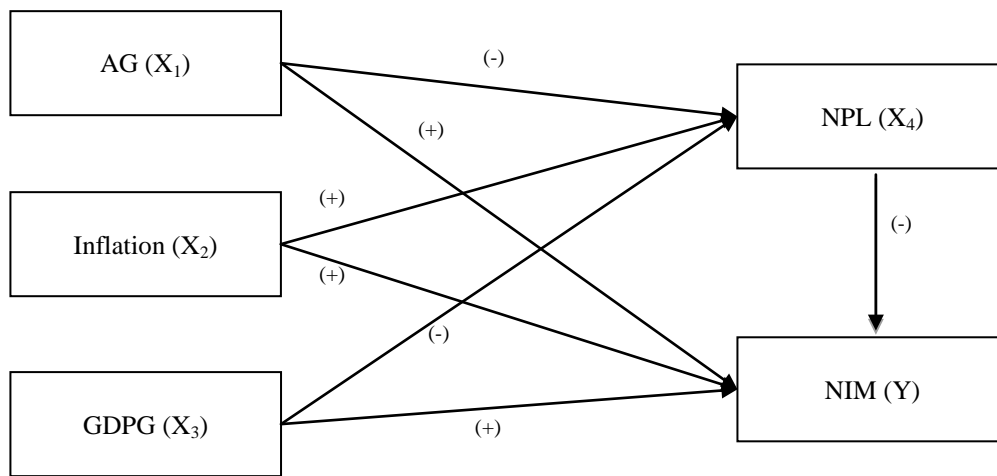
The company's growth is always identical with company assets. Moreover, the company's operating assets represent asset growth. The greater the asset, the greater the operational results generated by the company. To calculate asset growth is to compare the total assets of a particular year and the total assets of the previous year [20]. Asset growth can trigger an increase in bank income. An increase in assets will also increase credit, by increasing loans, net interest margins will also increase.

### ***2.5. Inflation***

Bank Indonesia [3] stated in simple terms, inflation is a persistent, ongoing rise across a broad spectrum of prices. An increase in prices for one or two goods alone cannot describe inflation unless that increase spreads to (or leads to escalating prices for) other goods. Increasing the inflation rate has an impact on increasing costs, so business people will look for credit to fulfill the provision of capital as a tool to conduct their business activities.

### 2.6. Gross Domestic Product Growth

GDP is basically the amount of added value generated by all business units in a particular country in a given period. The market value of all final goods and services produced in a country during a period of time, typically one year [5]. GDP growth can improve the quality of goods and services in a country. Changes in GDP are to compare the difference between the base year GDP and the previous year with the previous year's GDP.



**Figure 1:** Conceptual Framework

Based on the conceptual framework, the hypotheses proposed to this study as follows:

H<sub>1</sub>: Asset Growth has a negative effect on Non-Performing Loan.

H<sub>2</sub>: Asset Growth has a positive effect on Net Interest Margin.

H<sub>3</sub>: Inflation has a positive effect on Non-Performing Loan.

H<sub>4</sub>: Inflation has a positive effect on Net Interest Margin.

H<sub>5</sub>: Gross Domestic Product Growth has a negative effect on Non-Performing Loan.

H<sub>6</sub>: Gross Domestic Product Growth has a positive effect on Net Interest Margin.

H<sub>7</sub>: Non Performing Loan has a negative effect on Net Interest Margin.

H<sub>8</sub>: Non Performing Loan mediates the effect of Asset Growth on Net Interest Margin.

H<sub>9</sub>: Non Performing Loan mediates the effect of Inflation on Net Interest Margin.

H<sub>10</sub>: Non Performing Loan mediates the effect of Gross Domestic Product Growth on Net Interest Margin.

### 3. Research Methods

The location of this study is RDB throughout Indonesia, in particular using data onto 2013 to 2017. This study uses quantitative methods. This study also uses secondary data types. Furthermore, to obtain data by accessing the website address of each RDB and the Bank Indonesia website. The data sources used in this study are RDB financial report data onto Indonesia and inflation and GDPG data issued by Bank Indonesia as of 31 December 2013 to 2017.

The population of this study is RDB in Indonesia, which amounts to 27 banks. The next step is to choose the research sample. The sampling technique used was purposive sampling technique and obtained as many as 19 RDB in accordance with predetermined criteria.

The purpose of this study used a purposive sampling technique is to get a representative sample and in accordance with predetermined criteria. Afterward testing the hypotheses using path analysis with the Partial Least Square (PLS) method. Furthermore, interpreting the results of the analysis based on theoretical and empirical studies to answer the subject matter in this study and as material to confirm the theory and previous empirical studies, the latter make conclusions and suggestions for further research.

**Table 2:** Sample Selection

<b>Sample Criteria</b>	<b>Total</b>
RDB in Indonesia	27
RDB that do not publish their complete financial data consecutively for the period ended 31 December 2013 to 2017.	0
RDB that has not experienced asset growth for five consecutive years during the 2013 to 2017 period.	8
Number of Samples	19
Year of Observation	5
Number of Observations	95

Furthermore, using time series data to increase the number of observations, which uses 19 sample data in 5 periods from 2013 to 2017, so that it becomes 95 observational data. There are five variables in this study. Exogenous variables in this study are AG (X<sub>1</sub>), Inflation (X<sub>2</sub>), GDPG (X<sub>3</sub>). Intervening variable in this study is NPL (X<sub>4</sub>). Endogenous variable in this study is NIM (Y). Subsequently, using path analysis to test hypotheses

and analysis tools using SmartPLS software version 3.2.7.

#### **4. Result and Discussions**

##### **4.1. Evaluation of Descriptive Statistics**

Descriptive statistics are statistical methods used to describe the data that has been collected into information that is clearer and easier to understand [8]. Table 3 below presents the descriptive statistical test results.

**Table 3:** Descriptive Statistical Test Results

	N	Min	Max	Mean	Std. Deviation
NIM	95	5,30	11,17	7,89	1,28
NPL	95	0,33	8,00	1,96	1,50
AG	95	0,10	53,49	14,64	9,99
Inflation	95	3,02	8,38	5,34	2,48
GDPG	95	4,88	5,56	5,11	0,23

Based on Table 3 there are 95 observational data, then the explanation of the results of descriptive statistical analysis is as follows:

NIM variable has a minimum value of 5.30 and a maximum value of 11.17 with an average value of 7.89 and a standard deviation value of 1.28. This means that the sample company has a minimum NIM value of 11.17, namely at PT. Bank Pembangunan Daerah Bali in 2017 while the maximum NIM value is 11.17, namely at PT. Bank Pembangunan Daerah Sumatra Utara in 2013.

NPL variable has a minimum value of 0.33 and a maximum value of 8.00 with an average value of 1.96 and a standard deviation value of 1.50. This means that in the sample companies the minimum NPL value is 0.33 which is at PT. Bank Pembangunan Daerah Sulawesi Selatan dan Sulawesi Barat in 2013 and PT. Bank Pembangunan Daerah Aceh in 2016 while the maximum NPL value is 8.00, namely at PT. Bank Pembangunan Daerah Bengkulu in 2015.

AG variable has a minimum value of 0.10 and a maximum value of 53.49 with an average value of 14.64 and a standard deviation value of 9.99. This means that the company has a minimum AG value of 0.10 which is at PT. Bank Pembangunan Daerah Sulawesi Utara dan Gorontalo in 2015 while the AG value was a maximum of 53.49 namely at PT. Bank Pembangunan Daerah Sulawesi in 2014.

Inflation variable has a minimum value of 3.02 and a maximum value of 8.38 with an average value of 5.34 and a standard deviation value of 2.48. This means that in the period of Inflation research with a minimum value of 3.02 occurred in 2016, while the maximum value of 8.38 occurred in 2013.

GDPG variable has a minimum value of 4.88 and a maximum value of 5.56 with an average value of 5.11 and a standard deviation value of 0.23. This means that in the period of Inflation research with a minimum value of 4.88 occurred in 2015, while the maximum value of 5.56 occurred in 2013.

#### 4.2. Evaluation of Goodness of Fit ( $R^2$ )

Goodness of Fit ( $R^2$ ) is the coefficient of determination used to determine the ability of the exogenous variable to explain the endogenous variable. The value of  $R^2$  in this study there are two variables constructs, namely NPL and NIM. Table 4 below presents the value of  $R^2$  for the variable construct.

**Table 4:** Value  $R^2$  for Variable Construct

Variable	Value of $R^2$
NIM	0.208
NPL	0.083

The value of  $R^2$  from the variable construct of NIM is 0.208 because the value is more than 0.19 which mean that the model of influence of AG, Inflation and GDPG is moderate. Besides that, the value of  $R^2$  from the variable construct of NPL is 0.083 because the value is lower than 0.19 which mean that the model of influence of AG, Inflation and GDPG is weak.

#### 4.3. Evaluation of Predictive Relevance ( $Q^2$ )

Based on  $R^2$  value can be calculated and evaluated its predictive ability with a total coefficient of determination through Stone Geisser Q Square Test ( $Q^2$ ). Calculation of Stone Geisser Q Square Test ( $Q^2$ ) is as follows:

$$Q^2 = 1 - \{(1-R_1^2) (1-R_2^2)\}$$

$$Q^2 = 1 - (1- 0.208) (1- 0.083)\}$$

$$Q^2 = 1 - 0.7263$$

$$Q^2 = 0.2737$$

The value of  $Q^2$  has predictive relevance, thus the resulting Q model is worth using to predict. The  $Q^2$  number of 0.2737 means that 27.37 percent of the variations in AG, Inflation, and GDPG affect the NIM and NPL variables.

#### 4.4. Direct Effect Test

Conducting a Structural Model Test (Inner Model) is to determine the significant influence of the construct

variable tested. Furthermore, Table 5 below presents the direct effect test results.

**Table 5:** Direct Effect Test Results

<b>Inter-Variable Relationships</b>	<b>Original Sample</b>	<b>Standard Deviation</b>	<b>T Statistic</b>	<b>P Values</b>	<b>Information</b>
AG → NPL	-0.268	0.085	3.147	0.001	Significant
AG → NIM	-0.044	0.070	0.634	0.263	Not Significant
INF → NPL	0.035	0.081	0.428	0.334	Not Significant
INF → NIM	0.259	0.106	2.438	0.008	Significant
GDPG → NPL	-0.175	0.107	1.636	0.051	Not Significant
GDPG → NIM	0.103	0.083	1.247	0.107	Not Significant
NPL → NIM	-0.286	0.078	3.660	0.000	Significant

Based on Table 5 it can be seen that the results of testing nine hypotheses to test the direct effect, there are four results that are not in accordance with the hypotheses. Furthermore, five other test results stated a positive and negative relationship with a significance value of less than five percent.

**4.5. Indirect Effect Test**

Table 6 below presents the indirect effect or mediation between variables in this study.

**Table 6:** Indirect Effect Test Results

<b>Inter-Variable Relationships</b>	<b>Original Sample</b>	<b>Standard Deviation</b>	<b>T Statistic</b>	<b>P Values</b>	<b>Information</b>
AG → NPL → NIM	0.077	0.030	2.529	0.006	Significant
INF → NPL → NIM	-0.010	-0.006	0.253	0.400	Not Significant
GDPG → NPL → NIM	0.050	0.046	1.248	0.106	Not Significant

Based on Table 6 it can be seen that the NPL variable mediates the effect of AG on the NIM with a significance value of less than five percent. However, the NPL variable does not mediate the effect of inflation and the effect of GDPG on the NIM.

**4.6. Discussions**

The analysis results from the first hypothesis (H<sub>1</sub>) state that AG has a negative effect on NPL with an original sample value of -0.268 and p values of 0.001 at a significance level of five percent, so the hypothesis is



accepted. The growth of assets of a bank should also be in line with developments in risk management. The Bank realizes that good risk management plays an important role in increasing stakeholder trust. Therefore, the higher the growth of assets, the bank will carry out risk management to minimize the risks faced by a bank. Asset growth, especially in earning assets or loans provided is a factor dividing the NPL ratio, so the higher the divider, the lower the NPL.

The analysis results from the second hypothesis ( $H_2$ ) state that AG does not affect the NIM with an original sample value of -0.044 and p values of 0.263 at a significance level of five percent, so the hypothesis is rejected. Bank assets, one of which comes from time-bound public funds. Moreover, the increase in assets is also in line with the increase in credit or other earning assets, the cost of funds and interest spreads is fixed, so that it does not affect the NIM.

The analysis results from the third hypothesis ( $H_3$ ) state that Inflation does not affect the NPL with an original sample value of 0.035 and p values of 0.334 at a significance level of five percent, so the hypothesis is rejected. The results of this study are consistent with the results of research from [1,7,16,21] who found that Inflation does not affect the NPL. In general, the provision of credit for consumption loans and given to individuals, therefore the monthly salary are the debtor's payment capacity. The current income of the Indonesian people continue to increase, wherefore RDB in Indonesia will increasingly be confident of lending to the consumption sector. When inflation is high, the bank will adjust the strategy by focusing more on credit risk management, so that inflation does not affect the NPL. The bank continues to implement prudential banking to reduce risk and maintain the health of the bank [16].

The analysis results from the fourth hypothesis ( $H_4$ ) state that Inflation has a positive effect on NIM with an original sample value of 0.259 and a p value of 0.008 at a significance level of five percent, so the hypothesis is accepted. The results of this study are consistent with the results of research from [13,15,19,23] who found that Inflation had a positive effect on NIM. The increase in inflation will affect business people, namely by increasing business costs [9]. Therefore, business people need large funds to run their businesses, they need credit from banks to be able to run their business. The higher the level of credit distribution, the higher the bank's net interest margin.

The analysis results from the fifth hypothesis ( $H_5$ ) state that GDPG does not affect the NPL with an original sample value of -0.175 and p values of 0.051 at a significance level of five percent, so the hypothesis is rejected. The results of this study are consistent with the results of research from [18] who found that GDPG does not affect the NPL. When there is an increase in GDP, the people's income also increases but it does not reduce the level of problematic financing. This happened because of the tendency towards the Indonesian people to be consumptive, so that most of their income was prioritized for their consumption needs rather than to restore financing [18].

The analysis results from the sixth hypothesis ( $H_6$ ) state that GDPG does not affect the NIM with an original sample value of 0.103 and p values of 0.107 at a significance level of five percent, so the hypothesis is rejected. The results of this study are consistent with the results of research from [6,10,11,15,17] who found that GDPG

does not affect the NIM. This is because in the study period from 2013-2017 the pace of the Indonesian economy experienced a slowdown in growth, while the NIM in RDB experienced fluctuations in up and down during the study period due to RDB lending still weak. In the meantime, economic growth of some regions is still weak because credit growth of the last 5 years has been relatively declining and tends to stagnate. In general, RDB lending tends to be stagnant, because there are not many local government projects [14].

The analysis results from the seventh hypothesis ( $H_7$ ) state that NPL has a negative effect on NIM with an original sample value of -0.286 and p values of 0,000 at a significance level of five percent, so the hypothesis is accepted. The results of this study are consistent with the results of research from [15,22] who found that NPL had a negative effect on NIM. The more non-performing loans, the bank's interest income will decrease because the tendency towards debtors to fail to pay their obligations so that the interest margin received by the bank will decrease [6].

The analysis results from the eighth hypothesis ( $H_8$ ) state that the NPL mediates the effect of AG on the NIM with the original sample value of 0.077 and the p values at 0.006 at a significance level of five percent, in the case the NPL is classified as full mediation, so the hypothesis is accepted. The higher level of asset growth can cause the NPL to be lower because with the increase in assets, the bank will also increase supervision and risk management. Furthermore, a low NPL will cause higher NIMs due to higher interest and loan principals [22].

The analysis results from the ninth hypothesis ( $H_9$ ) state that the NPL does not mediate the effect of Inflation on the NIM with the original sample value of -0.010 and the p values at 0.400 at a significance level of five percent, in the case the NPL is classified as not mediation, so the hypothesis is rejected. The NPL does not mediate the effect of inflation on the NIM because inflation does not have an impact on income, this means that the real income of the community including customers has not changed. In the meantime, actual inflation which is still in the inflation target range shows that inflation is still reasonable and is still acceptable to the economy.

The analysis results from the tenth hypothesis ( $H_{10}$ ) state that the NPL does not mediate the effect of GDPG on the NIM with the original sample value of 0.050 and the p values at 0.106 at a significance level of five percent, in the case the NPL is classified as not mediation, so the hypothesis is rejected. This happened because of the tendency towards the Indonesian people to be consumptive, so that most of their income was prioritized for their consumption needs rather than to restore financing [18]. In the meantime, economic growth of some regions is still weak because credit growth of the last 5 years has been relatively declining and tends to stagnate.

## **5. Conclusions and Recommendations**

Based on the results of data analysis, this studies found that AG had a negative effect on NPL, conversely Inflation and GDPG had no effect on NPL. In the meantime, inflation had a positive effect on NIM, however NPL have a negative effect on NIM, conversely AG and GDPG had no effect on NIM. Furthermore, the NPL mediates the effect of AG on the NIM, however the NPL does not mediate the effect of Inflation and GDPG on the NIM.

Based on the results of the discussion and conclusions, the researcher suggested that banks not only to pay

attention to internal factors that affect the NIM but also macroeconomic factors, because it can be the basis of changing business strategies to get maximum profits. Moreover, as assets increase, RDB must also implement risk management and always evaluate it to minimize the risk of credit problems.

RDB must be efficient and more innovative in developing products and services offered, both on the asset side and on the liability side, so as not to depend on certain markets and borrowers and to be more prepared to compete with other commercial banks in Indonesia, including in anticipation of increasing competition in the financial services industry and national banking after the formation of the ASEAN Economic Community.

Based on data from the Indonesian Banking Statistics, lending to RDB has slowed. For the government, it is good to focus on increasing its expenditure so as to stimulate the real sector to produce, in the end the credit demand will increase without having to reduce bank interest rates.

## **6. Limitations**

The limitations of this study are the low total coefficient of determination, this indicates the low influence of exogenous variables on endogenous variables. Based on total coefficient of determination value of 27.37 percent, the variations in AG, Inflation, and GDPG affect the NIM and NPL variables, so researcher suggest examining other internal and external factors that can affect NIM and NPL.

The location of this study is limited to RDB, but there are several RDBs listed on the Indonesia Stock Exchange. Bank Jabar & Banten (BJBR), Bank Jatim (BJTM), and Bank Banten (BEKS) are several RDBs that have listed their shares on the Indonesia Stock Exchange, so that further research can check whether there are differences in the results of the NIM variable determinants, both before and after the RDB becomes a public company. In addition, further research can examine other types of banks. By increasing the scope of research, the results will be generalized.

## **References**

- [1] Akbar, Dinnul Alfian. "Inflasi, Gross Domesctic Product (GDP), Capital Adequacy Ratio (CAR), dan Finance to Deposit Ratio (FDR) terhadap Non Performing Financing (NPF) pada Bank Umum Syariah di Indonesia". *I-Economic*, vol. 2, no. 2, pp.19-37, Des. 2016.
- [2] Ali, Masyhud. *Asset Liability Management, Menyiasati Risiko Pasar dan Risiko Operasional dalam Perbankan*. Jakarta: PT. Elex Media Komputindo, 2004.
- [3] Bank Indonesia. "Inflasi, Pengenalan Inflasi, Definisi Inflasi". Internet: <https://www.bi.go.id/id/moneter/inflasi/pengenalan/Contents/Default.aspx>, Jul. 31, 2018 [Sep. 1, 2018].
- [4] Bank Indonesia. "Kodifikasi Peraturan Bank Indonesia tentang Penilaian Tingkat Kesehatan Bank". Internet: <https://www.bi.go.id/id/peraturan/kodifikasi/bank/Pages/1.3.3.2.%20Penilaian%20Tingkat%20Kesehatan%20Bank.aspx>, Jan. 3, 2014 [Jul. 1, 2018].
- [5] Blanchard, Olivier and David, R. Johnson. *Macroeconomics Global Edition*, 6<sup>th</sup> ed., England: Pearson, 2013.
- [6] Dewi, Indah Lestari and Nyoman Triaryati. "Pengaruh Faktor Internal dan Eksternal Bank terhadap Net

- Interest Margin di Indonesia”. E-Jurnal Manajemen, vol. 6, no. 6, pp.3051-3079, 2017.
- [7] Dwihandayani, Deasy. “Analisis Kinerja Non Performing Loan (NPL) Perbankan di Indonesia dan Faktor-Faktor yang Mempengaruhi NPL”. *Jurnal Ekonomi Bisnis*, vol. 22, no.3, pp. 265-274, Des. 2017.
- [8] Ghozali, Imam. *Aplikasi Analisis Multivariate dengan Program SPSS 23*. Cetakan VIII. Semarang: Badan Penerbit Universitas Diponegoro, 2016.
- [9] Ginting, Ari Mulianta. “Pengaruh Makroekonomi Terhadap Non Performing Loan (NPL) Perbankan”. *Jurnal Ekonomi & Kebijakan Publik*, vol. 7, no. 2, pp. 159-170, Des. 2016.
- [10] Isik, Ozcan and Murat Belke. “An Empirical Analysis of the Determinants of Net Interest Margins of Turkish Listed Banks: Panel Data Evidence from Post-Crisis Era”. *Sosyoekonomi*, vol. 25, no. 34, pp. 227-245, 2017.
- [11] Jima, Meshesha Demie. “Determinants of Net Interest Margin in the Ethiopian Banking Industry”. *Journal of Finance and Economics*, vol. 5, no. 3, pp. 96-104, 2017.
- [12] Kasmir. *Dasar-Dasar Perbankan*. Jakarta: PT. Raja Grafindo Persada, 2012.
- [13] Khanh, Hoang Trung and Vu Thi Dan Tra. “Determinants of Net Interest Margin of Commercial in Vietnam”. *Journal of Economics and Development*, vol. 17, no. 2, pp. 69-82. August 2015.
- [14] Kinanti, Krizia Putri. 2017. “Penyaluran BPD: Geliat Masih Lemah”. Internet:<https://kalimantan.bisnis.com/read/20170615/446/662763/penyaluran-kredit-bpd-geliat-masih-lemah>, Jun. 15, 2017 [Feb. 18, 2019]
- [15] Koostanto, Harya Buntala, Hermanto Siregar and Hendro Sasongko. “Determinants of Net Interest Margin: A Case Study of Bank XYZ in Indonesia”. *Research Journal of Finance and Accounting*, vol. 7, no.14, 2016.
- [16] Martina, Emy and Dewi Prastiwi. “Pengaruh Inflasi, Gross Domestic Product, Suku Bunga Kredit, Loan to Asset Ratio, dan Kualitas Aktiva Produktif terhadap Non Performing Loan”. *Jurnal Ilmu Manajemen*, vol. 2, no. 2, pp. 513-524, Apr. 2014.
- [17] Moussa, Mohamed Aymen Ben and Wiem Majouj. “Determinants of Bank Net Interest Margin: Case of Tunisia”. *Journal of Finance & Banking Studies*, vol. 5, no. 3, pp.85-102, 2016.
- [18] Mutamimah and Chasanah. “Analisis Eksternal dan Internal dalam Menentukan Non Performing Financing Bank Umum Syariah di Indonesia”. *Jurnal Bisnis dan Ekonomi (JBE)*, vol. 19, no. 1, pp. 49-64, Mar. 2012.
- [19] Plakalovic, Novo and Almir Alihodzic. “Determinants of the Net Interest Margins in BH Banks”. *Industrija*, vol. 43, no.1, Apr. 2015.
- [20] Prasetyo, Aries Heru. *Manajemen Keuangan Bagi Manajer Non Keuangan*. Jakarta: PPM, 2011.
- [21] Pratamawati, Hadiah Putri. “Analisis Faktor-Faktor yang Mempengaruhi Non Performing Loan pada Bank Umum BUMN Tahun 2012–2016”. *Jurnal Pendidikan dan Ekonomi*, vol. 7, no. 6, pp. 501-510, 2018.
- [22] Purba, Lamiduk Pincur and Nyoman Triaryati. “Pengaruh CAR, NPL, BOPO, dan LDR terhadap Net Interest Margin pada Perusahaan Perbankan yang Terdaftar di BEI”. *E-Jurnal Manajemen Unud*, vol. 7, no. 1, pp. 387-411, 2018.
- [23] Raharjo, Pamuji Gesang, Dedi Budiman Hakim, Adler Hayman Manurung and Tubagus Maulana. “The

- Determinant of Commercial Banks' Interest Margin in Indonesia: An Analysis of Fixed Effect Panel Regression". *International Journal of Economics and Financial Issues*, vol. 4, no. 2, pp. 295-308, 2014.
- [24] Riyadi, Slamet. *Banking Assets and Liability Management*. Jakarta: Lembaga Penerbit Fakultas Ekonomi Universitas Indonesia, 2006.
- [25] Salvatore, Dominick. *Ekonomi Manajerial Buku 1*. Jakarta: Salemba Empat, 2011.
- [26] Sutawijaya, Adrian and Etty Puji Lestari. "Efisiensi Teknik Perbankan Indonesia Pascakrisis Ekonomi: Sebuah Studi Empiris Penerapan Model DEA". *Jurnal Ekonomi Pembangunan*, vol. 10, no.1, pp. 49-67, Jun. 2009.
- [27] The World Bank. "Data Bank, Global Financial Development". Internet: <http://databank.worldbank.org/data/source/global-financial-development>, [Jul. 1, 2018].
- [28] Wijayanto. "Ekonomi Tersandera Bunga Tinggi, Pemerintah Indonesia akan Akhiri Oligopoli Perbankan". Internet: <https://www.pressreader.com/indonesia/jawa-pos/20160209/281496455327285>, Feb. 9, 2016 [Oct. 21, 2018].