FINANCIAL INTERMEDIATION EFFICIENCY AND ITS IMPACT ON PROFITABILITY (STUDY IN STATE SAVING BANK IN INDONESIA)

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ABSTRACT. Bank BTN as a state-owned savings bank in Indonesia during the period 2010-2016 has been carrying out financial intermediation function optimally. It can be seen from ratio of loan to deposit ratio (LDR) is high compared with the national banking and other state-owned banks. But the increase in LDR is not followed by an increase in profitability. The low profitability of allegedly caused by the implementation of financial intermediation less efficient due to credit growth, funds structure and credit risk. The aim of this study is to analyze the determinants of financial intermediation efficiency including credit growth (CG), funds structure and credit risk. And its impact on profitability. Financial intermediation efficiency is measured by net interest margin (NIM), funds structure is measured by ratio time deposits to total third party funds (STPF), credit risk is measured by non performing loans (NPLs) and profitability is measured by return on assets (ROA). The methods used are descriptive and verification methods, with secondary data from financial statements of Bank BTN period 2010 – 2016. The data analysis technique used is multiple linear regression, while hypothesis testing uses T - test to examine the effect of partial independent variables and F - test to examine the effect of independent variables simultaneously. Based on the research results, it is concluded that partially, CG and STPF have positive and significant effect on NIM; while the NPLs have negative effect but not significant on NIM; Simultaneously, STPF, LDR, and NPLs significantly influence NIM with the level of 62.9%, while the remaining 37.1% is influenced by other variables. And NIM has positive and significant effect on ROA with the level of 78.3%, while the remaining 21.7% is influenced by other variables not examined in this study.

KEYWORDS: *credit growth, financial intermediation efficiency, non-performing loans, structure of third party funds, net interest margin*

1 INTRODUCTION

Bank BTN as one of the commercial banks that focused on financing commercial house plays an important role in the Indonesian economy. The role is mainly seen from how wide BTN can apply intermediary function. One commonly used indicator to measure the implementation of banking intermediation, is the ratio of loans to deposits (LDR) (Haruna, 2011; Buchory, 2006). The higher this ratio, the better the bank could carries out intermediation function optimally.

During the period of 2010-2016, Bank BTN has implemented banking intermediation function optimally. This is indicated by the average LDR achieved during the 2010-2016 period of 107.78%. While LDR on December 31, 2016 is 102.66% higher than the national banks (90.70%) and other state-owned banks such as bank BRI (87.77%), bank BNI (90,41%), and Bank Mandiri (85.86%). Similarly, when compared with the LDR achieved by other groups of banks such as foreign exchange banks (84.83%), non-foreign exchange banks (88.37%), and regional development banks (93.65%) but lower than joint venture banks (129.01%), foreign owned bank (122.38%). (Source : The Financial Services Authority, Republic of Indonesia, Indonesian Banking Statistics Volume 15 No. 1, December 2016).

Loans or credit disbursed by bank BTN during the period 2010 - 2016 achieved an average growth of 87.52% and the period 2015 - 2016 of 17.61% above the growth of national banking (7.85%) and other state-owned banks such as BRI (13.76%) , bank Mandiri (10.57%), but lower than BNI bank (20.86%). The credit growth of bank BTN was followed by a relatively high credit risk. This is indicated by the average NPLs during the period 2010-2016 is 4.04% and December 2016 is 2.84% higher than other state-owned banks such as BRI (2.03%), but lower than bank BNI (2.96%) and Bank Mandiri

(3.96%).

The third party funds collected by BTN banks during the period 2010 - 2016 achieved an average growth of 83.35% and the period 2015 - 2016 of 24.52% above the growth of national banking (9.60%) and other state-owned banks such as bank BRI (12.61%), bank BNI (20.41%) and bank Mandiri (12.20%). But the growth of third party funds of BTN bank is dominated by time deposits so that the fund structure becomes expensive, this is indicated by the ratio of time deposits to third party funds (STPF) on average during 2010 - 2016 period of 56.04% and December 2016 by 47% higher than other state-owned banks such as BRI (39.43%), bank BNI (34.52%) and Bank Mandiri (33.96%).

Credit growth followed by high NPLs and growth in third party funds dominated by expensive fund structures will lead to the banking intermediation function performed by BTN banks to be less efficient. Because of the difference in income from interest on the credit with interest cost paid to third party funds (net interest margin/NIM) becomes low. The level and dynamics of NIM indicate the efficiency of financial intermediation. (Plakalović, 2015). NIM indicates the efficiency of financial intermediation (Moussa, 2016). The higher NIM, means that the bank has the potential gains derived from the difference between interest income resulted in increased earnings and capital as one of the financial resources that can be used to support intermediation function especially the provision of credit. (Mujeri and Younus, 2009). The NIM achieved by BTN in the period 2010 – 2016 amounted to 5.25% while NIM achieved in December 2016 amounted 4.98%, which was lower than the national banks (5.63%), and was lower compared to other state-owned banks, such as BRI (8.27%); BNI (6.17%) and Mandiri (6.29%). Thus, NIM achieved by BTN becomes less optimal. The not optimal NIM achieved by the bank BTN allegedly the influence of credit growth followed by a high NPL and expensive fund structures.

In carrying out the intermediation function BTN also has to make profit to sustain its business and provide welfare to the shareholders. The indicator used to measure the level of bank’s ability is Return on Assets (ROA). The larger the bank's ROA, the greater the level of profit that the bank achieved and the better the bank's position in terms of asset utilization. The ROA achieved by BTN in the period 2010 – 2016 amounted to 1.68% while ROA achieved in December 2016 amounted 1.76%, which was lower than the national banks (2.23%) and other state-owned banks such as BRI (3.84%), bank BNI (2.69%) and bank Mandiri (1.95%). Thus, profitability achieved by BTN becomes less optimal. The not optimal profitability by BTN is thought to include the effect of NIM as indicate the efficiency of financial intermediation.

Based on the phenomenon above, the problem in this research can be formulated into a research question: How to influence of credit growth, structure of funds and credit risk on net interest margin as ? And how to influence of net interest margin on return on asset ? This study aims to analyze the effect of CG, STPF, and NPLs on the NIM. And to analyze the effect of NIM on ROA.

2 FRAMEWORK AND EMPIRICAL STUDIES

The main function of the banking business is financial intermediation. Financial intermediation is a process of channeling funds collected from a surplus economic unit (saver) to a deficit economic unit (investor). In other words intermediation is the process of transformation or direct purchase of a claim with a series of characteristics (maturity, denomination) of deficit spending units/DSUs and turns it into a claim indirectly by a different set of characteristics to be sold to surplus spending units/SSUs (Hempel et al., 1994; Kidwell and Petterson, 2000). The implementation of financial intermediation in banking can be seen from the bank's ability to transform savings received primarily from household economic units into credit or loans for companies and others to invest in buildings, equipment and other capital goods (Rose, 2013). The indicator commonly used to measure the extent of intermediation by the banking system has been implemented, namely by looking at the ratio of loans to deposits known as Loan to Deposit Ratio (LDR) (Haruna, 2011; Buchory, 2006). The higher LDR shows greater use of bank deposits for lending, which means that the bank has been capable to run intermediary function properly and vice versa. When banks raise funds from depositors, the bank pays interest while at the time of disbursing funds, especially bank loans, earns interest income. The difference between interest income and interest expense compared to earning assets is the net interest margin. The higher NIM, means that the bank has the potential gains derived from the difference between interest income resulted in increased earnings and capital as one of the financial resources that can be used to support intermediation function especially the provision of credit. (Mujeri and Younus, 2009). The level and dynamics of NIM indicate the efficiency of financial intermediation. (Plakalović, 2015). Therefore, the implementation of optimal financial intermediation in the banking sector can be seen from the ratio of loan to deposit ratio (LDR), while to know the efficiency level of financial intermediation implementation can be seen from net interest margin (NIM) ratio (Plakalović, 2015; Beck, 2006).

The main purpose of banks is to reach the maximum level of profitability in conducting its operational activities. Profitability describes the company's ability to make profit through all the capabilities of existing sources (Harahap, 2015). To measure the ability of bank management in gaining overall, Return on Assets ratio is used (Dendawijaya, 2009). The larger the bank's ROA, the greater the level of profit that the bank achieved and the better the bank's position in terms of asset utilization. NIM achieved by the bank will affect the ROA. The high NIM achieved by the bank, then will cause the ROA achieved also will be high. And vice versa

According to the research result by Buchory (2006), implementation of financial intermediation function gives effect to banking performance. This means that a bank will have good financial performance if the bank could apply its intermediary function optimally. Results of research conducted by Nusantara (2009), Vong (2009), Widati (2012) and Restiyana (2011), research result showed LDR has positive and significant impact on ROA. While according to Arimi (2012) and Purwoko (2013) research result showed that Loan to Deposit Ratio (LDR) does not have significant positive effect on Return on Asset (ROA).

2.1. The effect of Credit Growth on Net Interest Margin (NIM)

Implementation of financial intermediation by the banking sector, especially in the distribution of credit or loans. Therefore, credit is the largest investment of bank assets, and is also the largest source of income for banks. Success in managing credit is one of the indicators of financial intermediation efficiency which is indicated by high NIM achievement. Vice versa. Therefore, credit growth achieved by banks should be able to increase NIM. Unless the growth of credit is followed by an increase in NPL, the bank's NIM will decrease. And ultimately will reduce the bank profitability. Some previous research on the effect of credit on NIM and ROA among others done by Blaise (2012) that higher credit growth reduce net interest margins. Sharifi and Javaid (2016), that credit deposit ratio has a positive influence on NIM. While, research result by Siddiqua (2016) that loan to deposit had a positive effect on the determinants of profitability which are ROA, ROE, and NIM.

2.2. The effect of Structure of Third Party Funds (STPF) on Net Interest Margin (NIM)

Third party funds is one source of funds for banks raised from the public. The amount of third party funds is the biggest compared to other funding sources. Furthermore, the funds distributed by banks in the form of credit or financing. For the funds raised, the bank pays interest while from loans bank obtained a interest income. The difference between the interest received minus interest paid compared to the amount of earning assets is the net interest margin (NIM). Therefore the growth in the number and structure of third party funds collected by the bank will affect NIM. According to some previous research results stated that deposit affect the level of profitability and net interest margin were obtained bank. Leykun (2016), finds that deposit growth rate are the most important drivers of the commercial bank of Ethiopia's (CBE's) net interest margins. Husain (2015) in his study to investigates the relationship between return on asset and deposits of Islamic banks in Malaysia found are significant in determining the profitability. Likewise, the results of research Muda (2013) in his research found that deposits have a significant effect in determining banks' profitability of both domestic and foreign banks. Meanwhile according to Abbas (2013) in his research found that deposits, service income and financing are inversely related with profitability.

2.1.3. The effect of NPLs on NIM

NPLs is one indicator of the quality of the credit provided by the banking. NPLs also describe the level of credit risk faced by banks. The lower of the level of NPLs show the better quality of credit and vice versa. Therefore, the level of NPLs will affect the level of NIM achieved by the bank. Some previous research such as that conducted by Tarus (2012) the estimation results show that operating expenses and credit risk has a positive and significant effect on net interest margin of the commercial banks in Kenya. And Buchory (2015) NPLs has positive and significant effect to

Profitability. Kansoy, Fatih (2012) found operation diversity, credit risk and operating costs are important determinants of margin in Turkey. Plakalović (2015) found credit losses and the ratio o affect net interest margins. Ozili (2015), he found that loan quality significantly influences bank interest margin. While Sharma and Neelesh Gounder (2011) found that NIM has a positive association with credit risk.

Chowdhury (2015) in studies on Islamic banks', profitability are important towards improving performance. The findings reveal that bank-specific factors such credit risks factors are insignificant on the performance of the Islamic banks. Sanwari (2013), who studied the performance of Islamic Banks and Macroeconomic Conditions in Malaysia found that the performance of Islamic banks depends more on bank specific characteristics such asset quality. Husain (2015) in his study to investigates the relationship between dependent variable (return on asset) and independent variables (bank size, capital adequacy, liquidity, deposits and asset quality) of Islamic banks in Malaysia found it was revealed that asset quality are significant in determining the profitability with positive and negative relationship respectively. Shahida (2012) on her study to examine the performance and to identify the determinants of the performance of Islamic banks found four variables significantly determined Islamic banks' performance. The variables are BLR, EBIT, NPL and CAR. BLR and EBIT positively determined performance whereas NPL and CAR negatively determined performance. The other two variables LTA and TA are found to be not significant. Dewi (2010) in her research to analyze determinants factors influence of Islamic Bank profitability in Indonesia found that non-performing financing (NPF) has negative influence and significant to ROA Islamic Banks in Indonesia. Chong (2012) in his study to characterize some of indicators of overall bank performance in Malaysia found the empirical results indicated that credit risk is the most significant meaning in performance of local Islamic Commercial Banking in Malaysian. Raharjo et.al. (2014) found that the net interest margin of regional development bank is affected by profitability (ROA), efficiency (BOPO), and credit risk (NPL). Plakalović (2015), the results of the research led to the conclusion that high reserves for potential credit losses and the ratio of liquid assets affect net interest margins. Alkhatib (2012) in his study to empirically examine the financial performance of five Palestinian commercial banks listed on Palestine securities exchange (PEX) found the study rejected the hypothesis claiming that there exist statistically insignificant impact of bank size, credit risk, operational efficiency and asset management on financ*ial performance of Palestinian commercial banks. Maryati (2015) in her research, the testing of empirical findings about the effect of financial ratios proxied into the ratio of CAR, NPF, FDR, TPF (Third Party Funds), and Debt to Equity Ratio (DER) on ROA found the variable CAR, NPF, FDR, TPF, OEOI and DER effect on ROA. While the variable NPF, DER and ROA shows a negative direction. Of these five variables only variables TPF and ROA significantly influence ROA because the significance value less than 0.05, while the variable CAR, NPF, DER and FDR did not significantly affect the ROA because significant value greater than 0.05*. García (2010), the main results suggest that the main determinants of net interest rate margins in developing countries include: capital adequacy, credit risk, implicit interest payments, cost of holding reserves, the efficiency level and the level of taxes. Overall, operating expenses is the most important variable responsible for increased net interest rate margins for the entire sample. Mokoagow (2015) in his research about factors affecting profitability of islamic banks in Indonesia found that the variable CAR , asset quality and ROE on ROA. Meanwhile, according to Tarus (2012) The estimation results show that operating expenses and credit risk has a positive and significant effect on net interest margin of the commercial banks in Kenya. And Buchory (2015) NPLs has positive and significant effect to Profitability.

2.1.4. *The effect of NIM on ROA*

Raharjo et.al. (2014) the net interest margin of regional development bank is affected by profitability (ROA) Chong (2012) in his study to characterize some of indicators of overall bank performance in Malaysia found the empirical results indicated that credit risk is the most significant meaning in performance of local Islamic Commercial Banking in Malaysian.

2.3. Hypotesis

Based on the relationship between research objectives and theoretical framework to the formulation of the research problem, the research hypothesis are as follows:

H1 : Credit Growth (CG) has positive effect on NIM
H2 : Structure of Third Party Funds (STPF) has negative effect on NIM
H3 : Non Performing Loans (NPLs) have negative effect on NIM
H4 : CG, STPF and NPLs have effect on NIM
H5 : NIM has positive effect on ROA

3 METHODOLOGY AND DATA

3.1. Research method

The methods used in this research are descriptive method and verification method. Descriptive method is a method used to analyze data in a way to describe the data that has been collected without intending to apply general conclusions or generalizations while verification method is a method of research that aims to determine the relationship between the independent variables, namely credit growth (CG), structure of third party funds (STPF), and non performing loans (NPLs) to the dependent variable is net interest margin (NIM) and Return on Assets (ROA). And this verification method is used to test the truth of a hypothesis. Influence or the shape of causal relationship between independent variables and dependent variables can be known from the research method of verification. (Sugiyono, 2009)

3.2. Type, data source, and data collection methods.

The data used in this study are secondary data from PT. Bank Tabungan Negara Persero), Tbk. which include CG, STPF, NPLs, NIM and ROA that are obtained from the Financial Statement Publications period 2010 – 2016 (calculated quarterly). Data collection method used is study of documentation. Study of documentation is done with the data collection and classification category of written materials related to the research problem.

3.3. Data Analysis Technique

The data analysis technique used in this study is–multiple linear regression. First, it is tested to determine whether the assumptions of classical linear regression model doesn't have problem of normality, multicollinearity, heteroscedasticity and autocorrelation. If all of them were fulfilled, it means that the model has a decent analysis used (Gujarati, 2003). To examine the hypothesis T-test is used to determine the statistical significance of effect of independent variables on dependent variable partially, F-test is used to determine the statistical significance of coefficient of multiple significance or to determine the significance of independent variables on dependent variable simultaneously. Data processing is done by using a software, namely Statistical Package for Social Science (SPSS) version 23.0 for Windows. The regression equation used is as follows:

$$Y = a + \beta X_1 + \beta X_2 + \beta X_3 + e \quad (1)$$

$$Z = a + \beta Y + e \quad (2)$$

Where,

Y = Net Interest Margin (NIM)
Z = Return On Assets (ROA)
a = A constant which is the value of the variable Y when the variable X is 0 (zero)
β = Coefficient of the regression line
X_1 = Credit Growth (CG)
X_2 = Structure of Third Party Funds (STPF)
X_3 = Non-Performing Loans (NPLs)
e = Residual

4 DISCUSSION ON EMPIRICAL RESULTS

4.1. Empirical Results

The development of Credit Growth, Structure of Third Party Funds, Non Performing Loans, Net Interest Margin and Return on Assets PT. Bank Tabungan Negara (Persero) Tbk. Period 2010 – 2016 is presented in Table 4.1. following:

Table 4.1.: Development of Credit Growth (CG), Structure of Third Party Funds (STPF), Non Performing Loans (NPLs), Net Interest Margin (NIM) and Return On Assets (ROA) PT. Bank Tabungan Negara (Persero) Tbk, Period 2010 – 2016 (in percentage)

Years	CG	STPF	NPLs	NIM	ROA
QI/2010	0.60	68.00	4.00	5.57	1.94
QII/2010	7.60	67.00	4.12	5.81	1.92
QIII/2010	5.90	66.00	4.22	5.72	1.93
QIV/2010	4.28	65.00	3.26	5.93	2.05
QI/2011	3.39	67.00	4.04	5.69	1.93
QII/2011	5.32	66.00	4.35	5.46	1.85
QIII/2011	4.60	62.00	4.18	5.49	1.70
QIV/2011	6.97	53.00	2.75	5.75	2.03
QI/2012	4.54	60.00	3.22	5.93	1.99
QII/2012	8.41	57.00	3.46	5.89	1.98
QIII/2012	5.95	56.00	3.68	6.00	2.01
QIV/2012	5.85	55.00	4.09	5.83	1.94
QI/2013	1.00	56.00	4.77	5.39	1.60
QII/2013	10.95	51.00	4.63	5.35	1.58
QIII/2013	5.43	51.00	4.88	5.43	1.63
QIV/2013	3.69	53.00	4.05	5.44	1.79
QI/2014	2.26	57.00	4.74	4.97	1.39
QII/2014	2.89	53.00	5.01	4.53	1.11
QIII/2014	4.32	52.00	4.85	4.42	1.02
QIV/2014	4.80	51.00	4.01	4.47	1.14
QI/2015	3.98	53.00	4.78	4.70	1.53
QII/2015	4.93	50.00	4.70	4.72	1.55
QIII/2015	4.42	51.00	4.50	4.77	1.50
QIV/2015	5.50	49.00	3.42	4.87	1.61
QI/2016	2.81	50.00	3.59	4.59	1.56
QII/2016	4.23	51.00	3.41	4.65	1.54
QIII/2016	2.85	52.00	3.60	4.59	1.59
QIV/2016	6.71	47.00	2.84	4.98	1.76
Average	4.79	56.13	4.03	5.25	1.68
Min	0.60	47.00	2.75	4.42	2.05
Max	10.95	68.00	5.01	6.00	1.02

Source : - Bank BTN Financial Report, 2010 – 2016

Based on the data for period 2010 – 2016, the development of CG, STPF, LDR, NPLs, NIM and ROA achieved by PT. Bank Tabungan Negara (Persero) Tbk (see Table 1) can be described as follows:

1. During the period 2010 – 2016, CG experienced an average growth of 4.7 %, the highest growth occurred in the QII/2013 by 10.95% while the lowest growth occurred in QI/2010 amounted to only 0.60%. Credit growth followed by a decline in asset quality. This is reflected in the NPLs continued to increase during the period 2010 - 2016. Increasing in NPLs causing the decrease in NIM.
2. STPF during the period 2010 – 2016, experienced an average growth of 56.13 %, the highest STPF occurred in the QI/2010 by 68% while the lowest STPF occurred in QIV/2016 amounted to only 47.00%. This means the TPF BTN is dominated by high-cost structure of funds especially time deposits and will affect to the higher funding costs and causing the decrease in NIM.
3. Credit growth was achieved by BTN followed by a decline in credit quality. This is reflected in the NPLs continued to increase during the period 2010 - 2016. The highest NPL occurred in QII/2014 amounted to 5.01% , and QIV/2016 amounted 2.84% higher than the other state-owned banks such as BRI (2.03%), but lower than bank BNI (2.96%) and Bank Mandiri (3.96%). NPLs must cause the income of banks has decreased and the rising cost of provisioning for impairment losses of financing so impact on the declining level of NIM and profitability of banks.
4. Results of the financial intermediation efficiency by BTN will be reflected in the NIM obtained. NIM is the difference between revenue and cost of the assets owned by banks. NIM BTN achieved during the period 2010 - 2016 average of 5.25%. The highest NIM achieved in QIII/2012 amounted to 6.0% and the lowest NIM was achieved in QIII/2014 amounted to 4.42%. NIM in QIV/2016

amounted to 4.98% which was lower than the national banks (5.63%), and was lower compared to other state-owned banks, such as BRI (8.27%); BNI (6.17%) and Mandiri (6.29%). Thus, NIM was achieved by BTN becomes less optimal. The not optimal NIM achieved by the bank BTN allegedly the influence of credit growth was followed by a high NPL and expensive fund structures. However, if the bank's operating efficiency is low, the NIM will decreased and then profit reduced so ROA to be low.

5. The ROA achieved by BTN in the period 2010 – 2016 amounted to 1.68%. The highest ROA achieved in QIV/2010 amounted to 2.05% and the lowest ROA was achieved in QIII/2014 amounted to 1.02%. While ROA in QIV/2016 amounted to 1.76%which was lower than the national banks (2.23%) and other state-owned banks such as BRI (3.84%), bank BNI (2.69%) and bank Mandiri (1.95%). The ROA was achieved by BTN becomes less optimal. The not optimal profitability by BTN is thought to include the effect of NIM as indicate the efficiency of financial intermediation.

4.2. Multiple Linear Regression Analysis

Multiple linear regression analysis was used to determine basically dependence of dependent variable with one or more independent variables, with the aim of estimating or predicting the average of population data or average value of the dependent variable based on the value of the independent variable known (Gujarati, 2003). By regression analysis it can be seen whether there is influence between independent variables with the dependent variable. The results of multiple linear regression analysis in this study can be seen in Table 4.2. Based on Table 4.3, the regression equation is as follows:

$$\mathrm{NIM}\ (\mathrm{Y}) = 2.404 + .088\,\mathrm{X}_1 + .057\,\mathrm{X}_2 - .196\,\mathrm{X}_3 \quad (3)$$

$$\mathrm{ROA}(\mathrm{Z}) = -.799 + .473\,\mathrm{Y}_1 \quad (4)$$

The equation above it can be explained as follows:

1. Constant value (a) of 2.404, which means a positive constant value. This shows if the CG (X_1), STPF (X_2) and NPLs (X_3) has a value of zero, then the NIM (Y) increase by 2.404
2. Regression coefficient for the variable CG (X_1), is .088, indicating a positive relationship between the CG (X_1) with NIM (Y), meaning that if there is additional STPF (X_1) per unit, assuming other variables remain the NIM (Y) was increase by 0.088 and vice versa.
3. Regression coefficient for the variable STPF (X_2) is .057, indicating a positive relationship between the STPF (X_2) with NIM (Y), meaning that if the addition of STPF (X_2) for every one unit, assuming other variables constant, the NIM was increase by 0.057 and vice versa.
4. Regression coefficient for the variable NPLs (X_3) is -.196, indicating a negative relationship between the NPLs (X_3) with NIM (Y), meaning that if the addition of NPLs (X_3) for every one unit, assuming other variables constant, the NIM decrease by 0.196 and vice versa.
5. Regression coefficient for the variable ROA (Z) is .473, indicating a positive relationship between the NIM (Y) with ROA (Z), meaning that if there is additional NIM (Y) per unit, assuming other variables remain the NIM (Y) was increase by 0.473 and vice versa.

Table 4.2: *Test Results of Multiple Linear Regression Coefficients*

Model		Unstandardized coefficients		Standardized coefficients	t	Sig.
		B	Std. error	Beta		
1	(Constant)	2.402	.783		3.069	.005
	CG	.088	.032	.356	2.774	.011
	STPF	.057	.010	.693	5.524	.000
	NPLs	-.196	.106	-.236	-1.854	.076

Dependent variable: NIM;
Source: Output SPSS 23.0.

Table 4.3: *Test Results of Multiple Linear Regression Coefficients*

Model		Unstandardized coefficients		Standardized coefficients	t	Sig.
		B	Std. error	Beta		
1	(Constant)	-.799	.257		3.105	.005
	NIM	.473	.049	.885	9.698	.000

Dependent variable: ROA;
Source: Output SPSS 23.0.

4.3. Analysis of correlation coefficient and coefficient of determination

Correlation coefficient analysis was used to determine the direction and the strong relationship among the independent variables with dependent variable. Based on Table 4.3. it can be concluded that the variable CG (X_1), STPF (X_2) and NPLs (X_3) with NIM have a value of correlation (R) 0.793, meaning that the correlation level are in strong correlation (Sugiyono, 2013). And the coefficient of determination analysis was used to determine the contribution effect of CG (X_1), STPF (X_2) and NPLs (X_3) with NIM as a dependent variable (Y) is 0.629 (R^2), indicating that CG (X_1), STPF (X_2) and NPLs (X_3), accounted for 62.9% of the NIM (Y), and the remaining 37.1% thought to be influenced by other variables not examined. While the variable NIM (Y) with ROA (Z) has a value of correlation (R) 0.885, meaning that the correlation level are in strong correlation. And the coefficient of determination analysis was used to determine the contribution effect of NIM (Y) with ROA (Y) is 0.783 (R^2), indicating that NIM (Y) accounted for 78.3% of the ROA(Z), and the remaining 21.7% thought to be influenced by other variables not examined.

Table 4.4: Test Results Correlation Coefficient and Coefficient of Determination

Model	R	R square	Adjusted R square	Std. error of the estimate
1	.793[a]	.629	.583	.34434

a. Predictors: (Constant), CG, NPLs, STPF
b. Dependent Variable: NIM
Source: Output SPSS 23.0.

Table 4.5: Test Results Correlation Coefficient and Coefficient of Determination

Model	R	R square	Adjusted R square	Std. error of the estimate
1	.885[a]	.783	.775	.13517

a. Predictors: (Constant), NIM
b. Dependent Variable: ROA
Source: Output SPSS 23.0.

4.4. Partial significance test (t-test)

To examine hypotheses on the significance of the partial model used t-test. It is intended to determine the effect of independent variables (CG, STPF, and NPLs) partially to NIM as a dependent variable (Y). Partially, the influence of the three independent variables to the NIM as an dependent variables, shown in the Table 4.2. partial test results (t-test), it can be argued that:

1. The effect of Credit Growth (CG) on Net Interest Margin (NIM)

Partial test results between CG to NIM shows the t-value of 2.774 greater than the t-table (2.064) with a significant value of 0.011 which was upper 0.05 This means that the CG has positive effect but not significant effect on the net interest margin (NIM). Thus the hypothesis H1 which states CG has positive effect on the NIM is is acceptable. The results of this study, in line with previous research conducted by Sharifi and Javaid (2016), stated that credit deposit ratio has a positive influence on NIM and research result by Siddiqua (2016) that loan to deposit had a positive effect on the determinants of profitability which are ROA, ROE, and NIM. However, contrary to the research results according to Blaise (2012) that higher credit growth reduce net interest margins.

2. The effect of Structure of Third Party Funds (STPF) on Net Interest Margin (NIM)

Partial test results between STPF to NIM shows the t-value of 5.524 greater than the t-table (2.064) with a significant value of .000 which is below 0.05. This means that the STPF has positive effect and significant effect to the net interest margin (NIM). Thus the hypothesis H2 which states STPF negatively effect the NIM is rejected. The results of this study, in line with previous research was conducted by Leykun (2016), finds that deposit growth rate are the most important drivers of the commercial bank of Ethiopia's (CBE's) net interest margins. Husain (2015) in his study to investigates the relationship between return on asset and deposits of Islamic banks in Malaysia found are significant in determining the profitability. Likewise, the results of research Muda (2013) in his research found that deposits have a significant effect in determining banks' profitability of both domestic and foreign banks. Meanwhile according to Abbas (2013) in his research found that deposits, service income and financing are inversely related with profitability. However, contrary to the research results according to Abbas (2013) found that deposits, service income and financing are inversely related with profitability of Islamic banks.

3. The effect of Non Performing Loans (NPLs) on Net Interest Margin (NIM).

Partial test results between the NPLs to NIM shows the t-test value of -1.854 is lower than t-table (2.064) with a significant value of 0.076 which was upper 0.05. This means that the NPLs has negative effects but not significant effect on NIM. Thus hypothesis H3 which states NPF negative effect on NIM is acceptable. The results of this study, in line with previous research was conducted by Shahida (2012) on her study to examine the performance and to identify the determinants of the performance of Islamic banks found four variables significantly determined Islamic banks' performance. The variables are BLR, EBIT, NPL and CAR. BLR and EBIT positively determined performance whereas NPL and CAR negatively determined performance. Alkhatib (2012) in his study to empirically examine the financial performance of five Palestinian commercial banks listed on Palestine securities exchange (PEX) found the study rejected the hypothesis claiming that there exist statistically insignificant impact of bank size, credit risk, operational efficiency and asset management on financial performance of Palestinian commercial banks. Kansoy, Fatih (2012) found operation diversity, credit risk and operating costs are important determinants of margin in Turkey. Plakalović (2015) found credit losses and the ratio of liquid assets affect net interest margins. Ozili (2015), he found that loan quality significantly influences bank interest margin. While Sharma and Neelesh Gounder (2011) found that NIM has a positive association with credit risk. And García (2010), the main results suggest that the main determinants of net interest rate margins in developing countries include: capital adequacy, credit risk, implicit interest payments, cost of holding reserves, the efficiency level and the level of taxes. However, contrary to the research results according to Tarus (2012) the estimation results show that operating expenses and credit risk has a positive and significant effect on net interest margin of the commercial banks in Kenya. And Buchory (2015) NPLs has positive and significant effect to Profitability.

4.5. Simultaneous significant test (F-test)

F - test was conducted to determine the effect of independent variables simultaneously to the dependent variable. Simultaneously influence of the three independent variables (CG, STPF and NPLs) to the independent variables (NIM) is shown in Table 4.6. Based on the results of the F-test calculations in Table 4.6., F-count was 13.562 greater than the F-table (3.028) with a significance value (sig) of 0.000 is below 0.05. This means that the CG, STPF and NPLs simultaneously significant effect to NIM. Thus the H4 hypothesis which states CG, STPF and NPLs effect on NIM is acceptable. The results of this study, in line with previous research was conducted by Sharifi and Javaid (2016), stated that credit deposit ratio has a positive influence on NIM and research result by Siddiqua (2016) that loan to deposit had a positive effect on the determinants of profitability which are ROA, ROE, and NIM. Abbas (2013) that deposits, service income and financing are inversely related with profitability of Islamic banks. Then Leykun (2016), the research result shows that deposit growth rate are the most important drivers of net interest margins. Muda (2013) found that deposits have a significant effect in determining banks' profitability. Shahida (2012) on her study to examine the performance and to identify the determinants of the performance of Islamic banks found four variables significantly determined Islamic banks' performance. The variables are BLR, EBIT, NPL and CAR. BLR and EBIT positively determined performance whereas NPL and CAR negatively determined performance. Alkhatib (2012) in his study to empirically examine the financial performance of five Palestinian commercial banks listed on Palestine securities exchange (PEX) found the study rejected the hypothesis claiming that there exist statistically insignificant impact of bank size, credit risk, operational efficiency and asset management on financial performance of Palestinian commercial banks. Kansoy, Fatih (2012) found operation diversity, credit risk and operating costs are important determinants of margin in Turkey. Plakalović (2015) found credit losses and the ratio of liquid assets affect net interest margins. Ozili (2015), he found that loan quality significantly influences bank interest margin. While Sharma and Neelesh Gounder (2011) found that NIM has a positive association with credit risk. And García (2010), the main results suggest that the main determinants of net interest rate margins in developing countries include: capital adequacy, credit risk, implicit interest payments, cost of holding reserves, the efficiency level and the level of taxes.

However, contrary to the research results according to Blaise (2012) that higher credit growth reduce net interest margins. Abbas (2013) found that deposits, service income and financing are inversely related with profitability of Islamic banks. Tarus (2012) the estimation results show that operating expenses and credit risk has a positive and significant effect on net interest margin of the commercial banks in Kenya. And Buchory (2015) NPLs has positive and significant effect to Profitability.

6. The effect of Net Interest Margin (NIM) on Return on Assets (ROA).

Partial test results between the NIM to ROA shows in the Table 4.3. The t-test value of 9.698is upper than t-table (2.064) with a significant value of 0.000 which was lower 0.05. This means that the NIM has positive and significant effect on NIM. Thus hypothesis H5 which states NIM has positive effect on NIM is acceptable. The results of this study, in line with previous research conducted by Raharjo et.al. (2014) found that the net interest margin of regional development bank is affected by profitability (ROA) and then Arimi (2012) found that Net Interest Margin (NIM) has significant positive effect to Return On Asset (ROA). Purwoko and Bambang Sudiyatno 2013 in they research found that that the variables BOPO and NPL are significant negative effect on ROA, NIM is significant positive effect on ROA, CAR and LDR where as no significant effect on ROA.

Table 4.6.: Simultaneous Test Results (F-Test)

ANOVA						
Model		Sum of squares	Df	Mean square	F	Sig.
	Regression	4.824	3	1.608	13.562	.000[b]
1	Residual	2.846	23	.119		
	Total	7.650	26			

Dependent variable NIM;
Predictors: (constant), CG, NPLG, STPF
Source: Output SPSS 23.0.

Table 4.7.: Simultaneous Test Results (F-Test)

ANOVA						
Model		Sum of squares	Df	Mean square	F	Sig.
	Regression	1.718	1	1.718	94.048	.000[b]
1	Residual	.475	26	.119		
	Total	2.193	27			

a. Dependent Variable: ROA
b. Predictors: (Constant), NIM

5 CONCLUSION

1. Bank BTN has implemented banking intermediation function optimally. This is indicated by the average LDR achieved during the 2010-2016 period of 107.78%. While LDR on December 31, 2016

is 102.66% higher than the national banks (90.70%) and other state-owned banks. The high LDR of BTN is not followed by the increase of NIM and ROA. This indicates that the financial intermediation carried out by BTN is less efficient. The high NPL and rising interest costs are the cause of the decreasing NIM achieved by BTN.

2. Loans or credit disbursed by bank BTN during the period 2010 - 2016 achieved an average growth of 87.52% and the period 2015 - 2016 of 17.61% above the growth of national banking (7.85%) and other state-owned. But the credit growth of bank BTN was followed by a relatively high credit risk. This is indicated by the average NPLs during the period 2010-2016 is 4.04% and December 2016 is 2.84% higher than other state-owned banks such as BRI (2.03%), but lower than bank BNI (2.96%) and Bank Mandiri (3.96%). NPLs must cause the income of banks has decreased and the rising cost of provisioning for impairment losses of financing so impact on the declining level of profitability of banks
3. Third party funds collected by BTN banks during the period 2010 - 2016 achieved an average growth of 83.94% and the period 2015 - 2016 of 24.52% above the growth of national banking (9.60%) and other state-owned banks. But, BTN TPF growth is dominated by high-cost structure of funds so deposits especially the higher funding costs and causing the decrease in net interest margin
4. The net interest margin (NIM) achieved by Bank BTN in December 2016 amounted 4.98%, which was lower than the national banks (5.63%), and was lower compared to other state-owned banks, such as BRI (8.27%); BNI (6.17%) and Mandiri (6.29%). Thus, NIM achieved by BTN becomes less optimal. The not optimal NIM achieved by the bank BTN allegedly the influence of credit growth followed by a high NPL and expensive fund structures.
5. The ROA achieved by BTN in the period 2010 – 2016 amounted to 1.67% while ROA achieved in December 2016 amounted 1.76%, which was lower than the national banks (2.23%) and other state-owned banks such as BRI (3.84%), bank BNI (2.69%) and bank Mandiri (1.95) Thus, profitability achieved by BTN becomes less optimal. The not optimal profitability by BTN is thought to include the effect of NIM as indicate the efficiency of financial intermediation.
6. Based on the statistical test results showed that partially, CG and STPF have positive and significant effect on NIM; while the NPLs have negative effect but not significant on NIM; Simultaneously, STPF, LDR, and NPLs significantly influence NIM with the level of 62.9%, while the remaining 37.1% is influenced by other variables. And NIM has positive and significant effect on ROA with the level of 78.3%, while the remaining 21.7% is influenced by other variables not examined in this study.

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