Analysis of Internal Factors Affecting the Net Interest Margin of Conventional National Private Banks

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ABSTRACT

This study analyses the influence of size, capital adequacy ratio, Operating Costs and Operating Income, Loan to Deposit Ratio, and Loan to Asset Ratio on the Net Interest Margin of Conventional National Private Banks. The sample in this study is 37 conventional national private banks based on Indonesia Banking Statistics 2021. Data analysis with multiple linear regression analysis with secondary data during 2012-2021. The results of the study found that size has a significant negative effect on Net Interest Margin. The capital adequacy ratio has a significant positive impact on Net Interest Margin. Operating Expenses and Operating Income have an insignificant effect on Net Interest Margin. Loan to Deposit Ratio has a significant positive impact on Net Interest Margin. Loan to Asset Ratio has a significant positive effect on Net Interest Margin.

1. INTRODUCTION

The role of financial institutions is very important in a country's economy. This is because financial institutions affect the daily life of society and involve the flow of large sums of money through the economy. Furthermore, it will also affect business profits, the production of goods and services, and even the economy's welfare in a country.

The success of financial institutions as a vehicle in absorbing and distributing public funds effectively and efficiently shows the success of economic development. The function of a bank as a trustee of the public who deposits its funds in banking terms is often referred to as an agent of trust. Banks that serve the mobilization of funds for economic development are referred to as the function of agents of development, and banks are also known as agents of services functions because they provide services in the form of depositing valuables, remittances, providing bank guarantees, and completing bills.

The bank, as a financial intermediary, provides services in the form of funding and lending service products. Funding services are in the form of savings, current accounts, and time deposits, while lending services are credit provided to customers in the form of working capital, investment loans, home ownership loans, and other consumer loans (Sartono, 2001).

There are differences in the results of previous researchers related to internal factors and external factors that affect net interest margin. Economic growth will increase the business activity and business performance of borrowers. The increase will increase the wealth of borrowers so that their risk premium is reduced. This will make the bank reduce its net interest margin.

This can make companies reduce spending, production, and investments, exacerbating the recession's effects. Under this theory, banks tend to increase net interest margin during a recession and vice versa (Tarus et al., 2012).

Current accounts, savings, time deposits, loans received, placements in other banks, securities, and loan growth simultaneously do not significantly affect the growth of NIM of local government banks. Current accounts, savings, time deposits, placements in other banks, loans received, and partial credit growth did not affect and were not significantly negative either. However, the growth of

securities partially had a significant and positive effect on the NIM, and among seven independent variables, the growth of securities has a dominant influence on NIM (Machila and Anggraeni, 2013).

The development of the stock market as a means of alternative financial sources contributed to a decrease in net interest margins, while the development of the banking sector in solving banking cartels and lowering net interest margins was insignificant. Adjustments to the exchange rate, inflation rate and industrial growth also cannot be ignored in managing net interest margins. Incentives for bank executives and managers to ensure operational cost efficiency, reduction of premiums charged for bank health, diversification of bank activities, and providing scale efficiency to depositors and borrowers can also play a role in lowering interest margins to accelerate investment and domestic growth (Hussain, 2014).

Equity to asset ratio (EAR), loan to deposit ratio (LDR), Size and Operating Costs, and Operating Income (OCOI) have a significant positive effect on NIM, while non-performing loans (NPLs) have a negative but not significant impact on NIM. External factors of GDP growth and inflation have a positive but insignificant effect on NIM. This is because Indonesia is experiencing slow economic growth while NIM fluctuations rise and fall. The sharp decline in inflation has no significant impact on NIM because the banking industry is ready to anticipate inflation (Dewi and Triaryati, 2017). CAR and LDR have a positive and significant effect on NIM, NPL has a negative and significant effect on NIM, while OCOI has no significant effect on NIM.(Purba and Triaryati, 2018)

Economic growth has a negative influence on NIM, credit risk has a negative but insignificant influence on NIM, liquidity risk has a positive influence on NIM, credit risk according to economic growth has a negative influence on NIM, liquidity risk according to economic growth has a negative influence on NIM, the interaction of credit risk with liquidity risk has a positive but insignificant effect on NIM, and the interaction of credit risk with liquidity risk according to economic growth has a negative but not significant influence on NIM (Hidayat and Rizkianto, 2019).

LDR has a positive and significant effect on NIM. EAR has no significant effect on NIM. OCOI has no significant effect on NIM. The size of the bank has no significant impact on the NIM. NPLs have a significant effect on NIM. Liquidity, Capital Efficiency, Company Size (Size), and NPL significantly influence NIM. (Widyanto et al., 2020)

Based on this description, researchers are interested in researching and analyzing internal factors, namely: *size*, *capital adequacy ratio* (CAR), Operating Costs and Operating Income (OCOI), *Loan to Deposit Ratio* (LDR), *and Loan to Asset Ratio* (LAR) to *Net Interest Margin* (NIM) of National Conventional Private Banks.

2. METHOD

Researchers internal factors that influence the NIM of the Conventional National Private Sector Bank for the observation period of 2012-2021. The internal factors that are predicted to affect NIM (Y), namely: size (X_1), CAR (X_2), OCOI (X_3), LDR (X_4), and LAR (X_5). The operational definition of research variables is as shown in table 1 below:

Table 1. Variable Operational Definition

No	Variable	concept	Indicator	Scale
1	Size (X_1)		Size= Ln Total Aset	Ratio
2	CAR (X_2)	A ratio that shows how far all bank assets that contain risk (credit, participation, securities, bills at other banks) are financed from own capital funds in addition to obtaining funds from sources outside the	$CAR = \frac{capital}{ATMR}\ 100\%$	Ratio

No	Variable	concept	Indicator	Scale
		bank (Dendawijaya, 2003)		
3	OCOI (X_3)	This efficiency ratio is used to measure the ability of bank management to control operating costs to operating income (Pandia, 2012).	$OCOI = \frac{operating\ cost}{operating\ income} 100\%$	Ratio
4	LDR (X_4)	Ratio to measure the composition of the amount of credit given compared to the number of public funds and own capital used (Kasmir, 2014).	$LDR = \frac{disbursed\ loan}{total\ funds\ received} x10($	Ratio
5	LAR (X_5)	The ratio used to measure the level of bank liquidity which shows the bank's ability to meet credit demand with the total assets owned (Harjito and Martono, 2014)	$LAR = \frac{Total\ Loan}{Total\ Aset} x100\%$	Ratio
6	NIM (Y)	The ratio is used to measure the ability of bank management to manage its productive assets to generate net interest income. (Pandia, 2012)	$NIM = \frac{interest\ income}{productive\ assets} x100\%$	Ratio

The samples in this study were 37 conventional national private banks based on Indonesian Banking Statistics 2021, namely: Interregional Bank, Bank Artha Graha Internasional, Tbk. Bank Bukopin, Tbk, Bank Bumi Arta. Bank ICB Bumiputera Indonesia, Tbk, Bank Central Asia, Tbk, Bank CIMB Niaga, Tbk, Bank Danamon Indonesia, Tbk, Bank Ekonomi Raharja, Tbk, Bank Ganesha, Bank Hana, Bank Himpunan Saudara 1906, Tbk, Bank ICBC Indonesia, Bank Index Selindo, Bank SBI Indonesia , Bank Internasional Indonesia, Tbk, Bank QNB Kesawan, Tbk, Bank Maspion Indonesia, Bank Mayapada Internasional, Tbk, Bank Mega, Tbk, Bank Mestika Dharma, Bank Metro Ekspress, Bank Mutiara, Bank Nusantara Parahyangan, Tbk, Bank OCBC NISP, Tbk, Pan Indonesia Bank, Tbk, Bank Permata, Tbk, Bank Sinarmas, Tbk, Bank Of India Indonesia, Tbk, Bank UOB Indonesia, Bank BNP Paribas Indonesia, Bank Capital Indonesia, Bank KEB Indonesia, Bank Rabobank International Indonesia, Bank Resona Perdania, Bank Windu Kentjana International, and the Commonwealth Bank.

The data analysis technique of this study is multiple linear regression analysis with the help of the Eviews version 10 application to predict the influence of dependent variables on independent variables with the following regression equation model:

$$NIM = \alpha + \beta_1 size + \beta_2 CAR + \beta_3 OCOI + \beta_4 LDR + \beta_5 LAR + \varepsilon$$

3. RESULTS AND DISCUSSION

Results

Table 2 below is a Multiple Linear Regression Analysis Output

Table 2. Multiple Linear Regression Analysis Output

Dependent Variable: NIM
Method: Least Squares
Sample: 2012 2021

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Included observations: 10

Variable	Coefficient	Std. Error	t-Statistic	Prob.
SIZE	-12.6938	1.2202	-10.4031	0.0005
CAR	0.9036	0.0948	9.5345	0.0007
OCOI	0.0218	0.0160	1.3615	0.2450
LDR	0.2262	0.0236	9.6028	0.0007
LAR	0.3374	0.0606	5.5666	0.0051
C	147.5550	14.5550	10.1377	0.0005

R-squared	0.9685	Mean dependent var	4.4780
Adjusted R-squared	0.9290	S.D. dependent var	0.4529
S.E. of regression	0.1207	Akaike info criterion	-1.1078
Sum squared resid	0.0583	Schwarz criterion	-0.9262
Log-likelihood	11.5388	Hannan-Quinn criter.	-1.3069
F-statistic	24.5561	Durbin-Watson stat	2.8693
Prob(F-statistic)	0.0042		

NIM = -12.6938*SIZE + 0.9036*CAR + 0.0218*OCOI + 0.2262*LDR + 0.3374*LAR + 147.5550

Discussion

The Influence of Size, CAR, OCOI, LDR, and LAR on NIM

Net Interest Margin (NIM) is a ratio used to measure the ability of bank management to manage its productive assets to generate net interest income. Net interest income is derived from interest income minus interest expense. The greater this ratio, the more interest income. The greater this ratio, the higher the interest income on productive assets managed by the bank, so the possibility of a bank in a problematic condition is smaller. The standard set by Bank Indonesia for NIM is 6% and above. The greater this ratio, the increase in interest income on productive assets managed by banks so that the possibility of a bank in a problematic condition is smaller (Pandia, 2012)

NIM during 2012-2021 is below 6%, which is estimated to decrease interest income on productive assets managed by banks, so it is likely that conventional national private banks in problematic conditions are the bigger.

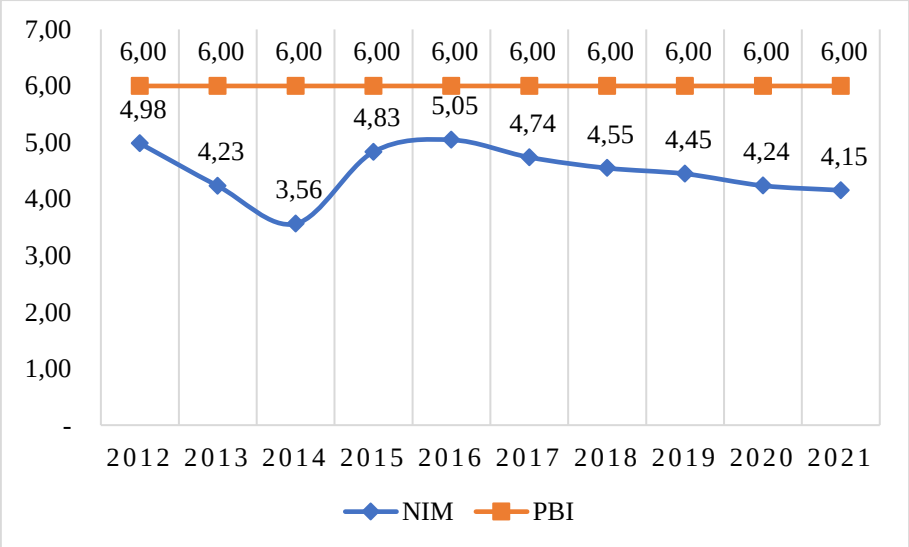

Figure 1. NIM 2012-2021

Based on Table 2, it is known that *size*, CAR, OCOI, LDR, and LAR simultaneously have a significant effect on NIM (0.0042 < 0.005). With the corrected coefficient of determination value of 0.9290 or 92.90%. The remaining 7.10% is influenced by other variables that have not been studied, such as *non-performing loans* and *equity to asset ratio*

The Influence of Size on NIM

Size is a variable used to measure economies of scale. In most studies on banking, the total assets of the bank are used as proxies. The size of the bank has a positive relationship with the bank's income to some extent and will have a negative impact if the size of the bank is very large for bureaucratic or other reasons. This study used the total asset log (Lnsize) as a proxy of the bank size as used Demirguc-Kunt et al. (2004) dan Athanasoglou et al. (2005).

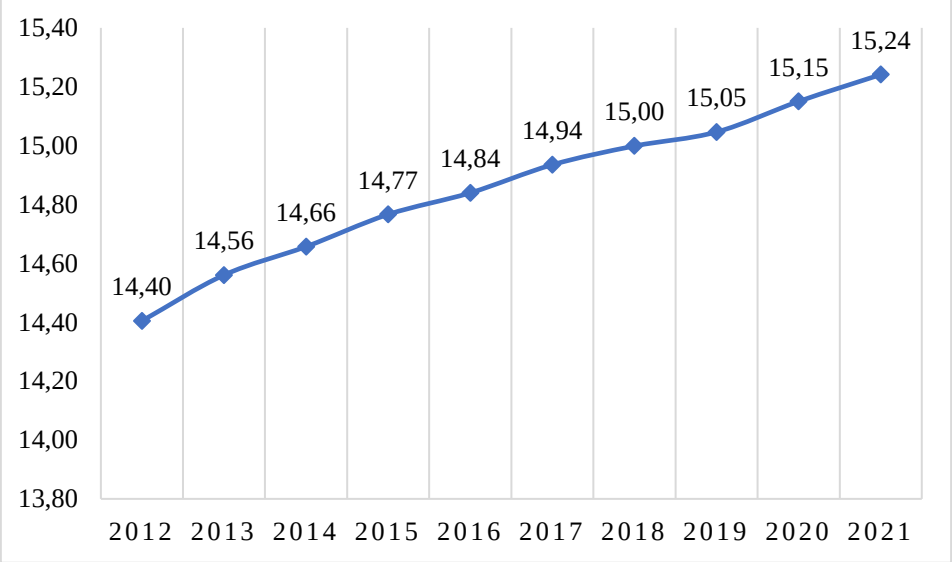

Figure 2. *Size* 2012-2021

Based on Table 2, it is known that *size* has a negative effect on NIM. This indicates that the costs associated with the investment are greater than the income from the investment returns. The type of bank investment tends to be more related to long-term investment, but the observation of this study is only ten years, so in the short term, the burden of investment costs is still high, resulting in a small NIM. Conventional national private banks with large *sizes* do not benefit from economies of scale; instead, they may be able to deal with the scale of diseconomies. Moreover, *size* can be generated from aggressive growth strategies. The results of this study are in line with the results of research conducted by Stiroh and Rumble (2006), Kasman (2010), Dietrich and Wanzenried (2011), and Nouaili et al. (2015). *The* larger size can be considered an obstacle to interest margins and profits. The tendency to increase economies of scale leads to an increase in costs and tends to lower yields.

The Influence of CAR on NIM

CAR is a capital ratio that shows the bank's ability to provide funds for business development purposes and accommodate the risk of loss of funds caused by the bank's operations. The CAR's size will increase banks' confidence in disbursing credit. With a CAR above 20%, banks can spur credit growth of up to 20 - 25% a year. The higher the CAR, the greater the financial resources that can be used for business development purposes and anticipate potential losses caused by lending, such as non-performing loans (Ali, 2004).

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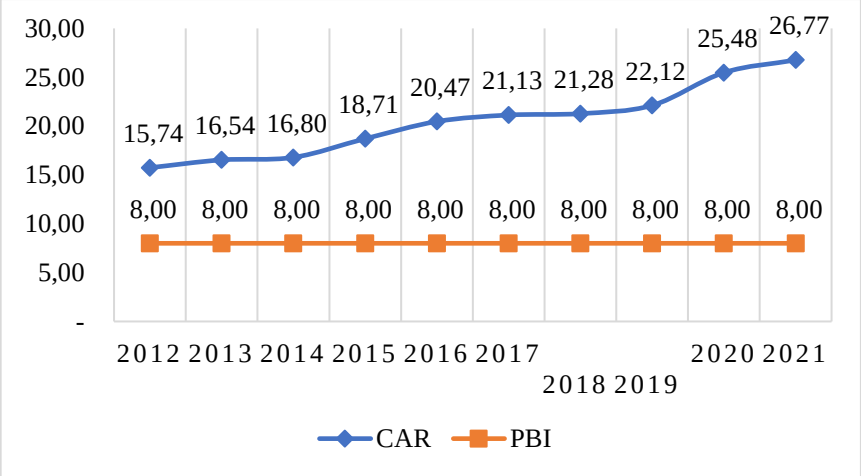


Figure 3. CAR 2012-2021

Based on Table 2, it can be seen that CAR has a significant positive effect on the NIM of conventional national private banks. This means that the higher the CAR owned by conventional national private banks, the higher NIM generated because a high CAR indicates the ability of conventional national private banks to provide funds for lending purposes to obtain higher interest income, as well as to float the possible risk of losses resulting from operations bank.

The results of this study align with the research conducted by (Nasserinia et al., 2015), (Trung and Dan, 2015) shows that CAR has a significant positive effect on NIM. This indicates that conventional national private banks have large funds to channel as credit, making conventional national private banks obtain higher interest incomes, thereby increasing the NIM.

The Influence of OCOI on NIM

OCOI is the ratio between operating costs to operating income. Operational costs are costs incurred by banks to carry out their main business activities such as interest, marketing, labour, and other operational costs. The smaller this ratio means, the more efficient the operating costs incurred by the bank. According to Bank Indonesia regulations, operational efficiency is measured by the OCOI with a maximum limit of 90%.

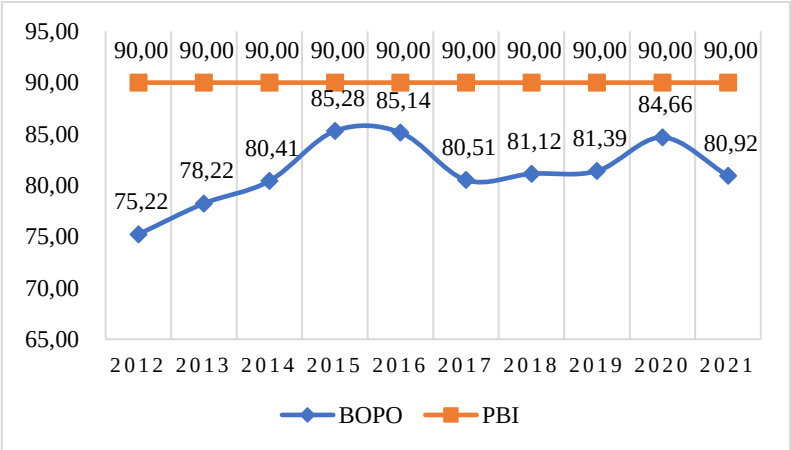


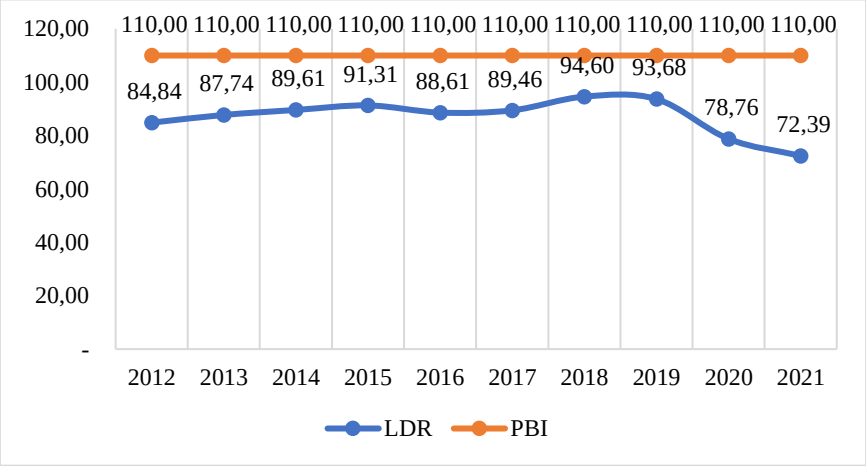
Figure 4. OCOI 2012-2021

Based on Table 2, it can be seen that OCOI has a positive but not significant effect on the NIM of conventional national private banks. This positive influence shows that the greater the operating cost, the greater the NIM owned by conventional national private banks. Banks with higher operating costs would logically provide a high margin benchmark because a high margin would allow them to cover those operating costs. Statistical results show that OCOI has an insignificant effect on NIM.

This is due to extreme data in 2015, 2016, and 2020 where the OCOI is very high while the NIM is low; this is inversely proportional to the results where results show OCOI has a positive effect on NIM. This is very likely to make OCOI not have a significant influence. The results of this study are in line with research conducted by those who get OCOI results have a positive and insignificant effect on NIM (Iloska, 2014)

The Influence of LDR on NIM

LDR is a ratio that describes the comparison between loans issued by banks and the total third-party funds raised consisting of current accounts, savings, and time deposits. The large amount of third-party funds raised is directly proportional to the amount of credit disbursed, meaning that the more third-party funds, the more credit is distributed. Banks with a high level of aggressiveness, as reflected in the LDR figure above 110%, will experience liquidity difficulties and, at the same time decrease in rentability. This is based on the assumption that LDR is considered the bank's asset earnings are lacking or even illiquid. With a high LDR, it can be suspected that cash flow from loan companies and interest payments from debtors to banks become disproportionate to the need to meet the cash outflow of withdrawals of current accounts, savings and time deposits that fall over time from the public. It can be suspected that with a high LDR/Loan to Deposit Ratio, banks could potentially experience liquidity difficulties



Gambar 5. LDR 2012-2021

Based on Table 2, it can be seen that LDR has a significant positive effect on NIM. This means that the higher the LDR or, the lower the liquidity of a bank, the higher the NIM produced by a bank. This is because a high LDR indicates that fewer funds are held in the form of liquid investments and an increase in funds disbursed in the form of credit (liquid assets provide a relatively lower rate of return) so that the NIM generated will be higher. Therefore, the NIM obtained will increase if the bank maintains sufficient liquid funds and optimizes its productive assets for lending. Hasil, this study corresponds to the results of research conducted by (Eralp, 2014) (Raharjo et al. 2014) and (Purba and Triaryati, 2018), which states that LDR has a positive and significant effect on NIM.

The Influence of LAR on NIM

LAR measures a bank's ability to meet credit demand by using the number of assets owned by the bank. LAR compares the credit given and the total assets owned by the bank. The higher the ratio, the lower the bank's liquidity level because the total assets used to finance its loans become larger (Dendawijaya, 2003).

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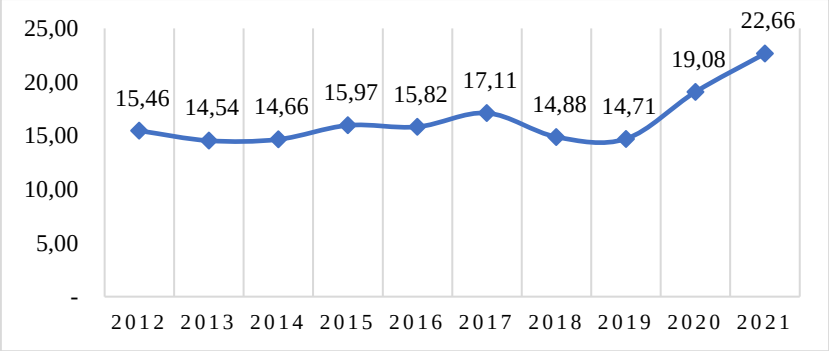

Gambar 6. LAR 2012-2021

Based on Table 2. It can be known that LAR has a significant positive effect on NIM. The results of this study are the results of research conducted by those who state that LAR has a positive and significant impact on NIM. This shows that the liquidity level of conventional national private banks can meet the demand for a loan with the total assets owned (Adhikary and Papachristou, 2017)

4. CONCLUSION

Based on the results of the study, it can be concluded that size has a negative impact on NIM. The larger size of the bank can be seen as a constraint to interest and profit margins. In addition, CAR has a significant positive effect on NIM. This shows that conventional national private banks have large funds to be channeled as credit, making conventional national private banks obtain higher interest income thereby increasing the NIM ratio. Whereas

OCOI had no significant effect on NIM. This is due to extreme data in 2015, 2016, and 2020 where the OCOI ratio is very high while the NIM ratio is low, LDR has a significant positive effect on NIM. This means that the higher the LDR or the lower the liquidity of a bank, the higher the NIM generated by a bank.

LAR has a significant positive effect on NIM. This shows that the level of liquidity of conventional national private banks can meet the demand for loans with total assets owned.

REFERENCES

Adhikary, S., Papachristou, G., 2017. Determinants of profitability in South Asian microfinance institutions. Journal of Global Economics, Management and Business Research 8, 76–87.

Ali, M., 2004. Asset Liability Management: Menyiasati Risiko Pasar dan Risiko Operasional, Jakarta: PT. Elex Media Komputindo.

Dendawijaya, L., 2003. Manajemen Perbankan Cetakan Kedua. Ghalia Indonesia. Jakarta Selatan.

Dewi, I.L., Triaryati, N., 2017. Pengaruh Faktor Internal Dan Eksternal Bank Terhadap Net Interest Margin di Indonesia. E-Jurnal Manajemen Unud 6, 3051–3079.

Eralp, B., 2014. Are the determinants of bank net interest margin and spread different? the case of North Cyprus. Banks and Bank Systems 9, 82–91.

Hidayat, A.A., Rizkianto, E., 2019. Pengaruh Risiko Kredit Dan Risiko Likuiditas Terhadap Net Interest Margin Sesuai Pertumbuhan Ekonomi Pada Bank Umum Di Indonesia Periode 2010 - 2017. JURNAL MANAJEMEN DAN BISNIS SRIWIJAYA 17, 119–138. https://doi.org/10.29259/jmbs.v17i2.10110

Hussain, I., 2014. Banking industry concentration and net interest margins (NIMs) in Pakistan. Journal of Business Economics and Management 15. https://doi.org/10.3846/16111699.2012.732105

Iloska, N., 2014. Determinants of Net Interest Margins - the case of Macedonia. Journal of Applied Economics and Business 2, 17–36.

Kasmir, 2014. Bank dan Lembaga Keuangan. Jakarta: Rajawali Pers., Angewandte Chemie International Edition, 6(11).

Machila, K., Anggraeni, A., 2013. Pengaruh Pertumbuhan Dana Pihak Ketiga Dan Aktiva Produktif Terhadap Pertumbuhan Net Interest Margin (NIM) Pada Bank-Bank Pemerintah Daerah. Journal of Business and Banking 3, 245. https://doi.org/10.14414/jbb.v3i2.241

Nasserinia, A., Ariff, M., Fah, C.F., 2015. Key determinants of German banking sector performance. Pertanika Journal of Social Sciences and Humanities 23.

Pandia, F., 2012. Manajemen Dana dan Kesehatan Bank. jakarta, Rineka Cipta 1.

Purba, P.L., Triaryati, N., 2018. Pengaruh CAR, NPL, BOPO,dan LDR Terhadap Net Interst Margin Pada Perusahaan Perbankan Yang Terdaftar di BEI. E-Jurnal Manajemen Unud 7.

Raharjo, P.G., Hakim, D.B., Manurung, A.H., Maulana, T.N.A., 2014. The Determinant of Commercial Banks' Interest Margin in Indonesia: An Analysis of Fixed Effect Panel Regression. International Journal of Economics and Financial Issues 4, 295–308.

Sartono, A., 2001. Manajemen Keuangan Teori dan Aplikasi, Revolusi Industri 4.0: Desain Perkembangan Transaksi dan Sistem Akuntansi Keuangan. BPFE, Yogyakarta.

Tarus, D.K., Chekol, Y.B., Mutwol, M., 2012. Determinants of Net Interest Margins of Commercial Banks in Kenya: A Panel Study, in: Procedia Economics and Finance. pp. 199–208. https://doi.org/10.1016/S2212-5671(12)00080-9

Trung, K.H., Dan, T.V.T., 2015. Determinants of Net Interest Margin of Commercial Banks in Vietnam. Journal of Economics and Development 17, 69–82. https://doi.org/10.33301/2015.17.02.04

Widyanto, D.A., Agung, R.E.W., Alwiyah, 2020. Analisis Faktor-Faktor yang Mempengaruhi Net Interest Margin Pada Perusahaan Perbankan yang Terdaftar Di Bursa Efek Indonesia Periode 2012-2016. MAKSIMUM 10, 95. https://doi.org/10.26714/mki.10.1.2020.95-105