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Strategic environment and bank performance (Empirical study of bank listed in Indonesian Stock Exchange period 2011-2015)

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A B S T R A C T

This study aimed to explain the interaction between macroeconomic and the internal environment with the performance of banks in Indonesia. The analyzed data obtained from 10 banks for 5-year observation period by using descriptive and inferential analysis through PLS program. The results showed that the BI rate is the most significant indicator in measuring changes in the macro environment, the efficiency ratio indicators for internal environment variables and indicators ROA for the variable performance. Further analysis showed that changes in the macro environment do not significantly influence the efficiency and performance of the banking system. However, efficiency is measured by using a ratio BOPO significant effect on bank's performance.

A B S T R A K

Penelitian ini bertujuan untuk menjelaskan keterkaitan antara lingkungan makro ekonomi dan lingkungan internal dengan kinerja perbankan di Indonesia. Data yang dianalisis diperoleh dari 10 bank selama 5 tahun periode pengamatan dengan menggunakan analisis desktiptif dan inferensial melalui program PLS. Hasil penelitian menunjukkan bahwa SBI merupakan indikator paling signifikan dalam mengukur perubahan lingkungan makro, indikator rasio efisiensi untuk variabel lingkungan internal dan indikator ROA untuk variabel kinerja. Analisis lebih lanjut menunjukkan bahwa perubahan lingkungan makro tidak berpengaruh signifikan terhadap efisiensi dan kinerja perbankan. Namun demikian, efisiensi yang diukur dengan menggunakan rasio BOPO berpengaruh signifikan terhadap kinerja bank.

1. INTRODUCTION

The Bank has a central role in the economic development of a country. Economic growth in a country can't be separated from the contribution of the banking sector. In Indonesia, the contribution is shown by the dominance of the banking assets in the financial system that is the average within 5 (five) years by 76 percent compared to other financial sectors (Annual Report of Bank Indonesia 2015). Their performance has achieved the growth in Indonesian banking sector. It cannot be separated from the efforts made to continuously improve performance and maintain the level of health in order to recover public confidence, especially after the crisis in 1997-1998.

Operational continuity in Indonesia's banking sector is affected by the ability of the banking enterprise in maintaining its high competitiveness. The competitiveness can be seen in how efficiently the company to perform its functions and its ability to face any challenges that arise, both externally and internally. External challenges are becoming increasingly evident, especially with the implementation of the ASEAN Economic Community (AEC) by 2015. Each bank was challenged to compete with regional banking institutions that already have a level of operational efficiency is relatively higher. Failure in this competition could potentially lead to national banks excluded from the market itself, while the existence of a national banking institution has a very important meaning in performing the function of national economic development (Dadang Muljawan et al. 2014).

The high contribution of the banking sector has become a strategic issue in the economic growth of Indonesia. Failure to move the banking sector has a

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direct impact on the national economy growth. Therefore, it is necessary to study and effort in improving the performance of banks in order to remain competitive demonstrated by the achievement of the company's profit is greater than the competitors (Porter 1987).

Some research suggests that the banking performance is generally influenced by internal factors such as operating costs (Kwan 2003), net interest margin, ROAA, ROAE, EVA (Fu and Heffernan 2008), and the bank's capital (Lee and Hsieh 2013). In addition to these factors, the performance of a bank is also influenced by liquidity risk and asset quality. Liquidity risk does not just affect bank performance, but also the reputation of the bank (Jenkinson 2008). A bank will lose the trust of its customers if the invested funds are not redeemable or payable when needed.

The situation above will certainly affect the bank's reputation for not only the customers but also the government as a regulator. Therefore, each bank must optimally manage its liquidity in order not to cause a drop in performance of the company. A bank that has good asset quality, strong earnings and sufficient capital will fail if it does not maintain the liquidity conditions (Crowe 2009). Capital plays an important role in driving the performance of the bank. Results of research conducted by Staikouras and Wood (2003) showed that the banks have big capital also has a better performance compared to banks with a small capital. The relationship between capital or equity and the performance of banks have also been found in previous research (Abreu and Mendes 2002; Goddard et al. 2004).

In addition to internal factors, Kwan (2003), Fu and Heffernan (2008), Jenkinson (2008), Crowe (2009), Lee and Hsieh (2013), suggest that the external factor or the macroeconomic environment also play an important role in driving the bank's performance, especially in developing countries like Indonesia. Therefore, a conducive macroeconomic environment can significantly affect the performance of the banking organization itself. Instead, the macroeconomic environment and financial conditions are relatively stable will trigger the emergence of market risk and credit risk, which in turn may have an impact on the bank's performance.

For example, the economic crisis in 1998 was one of the causes of the collapse of the financial sector, especially banking and triggered the economic crisis in Indonesia. Results of Rumler and Waschiczek's research (2010) which uses ROE as a performance indicator for the case of banking in the state Austria found that economic growth, interest rate/yield, and inflation is a positive and significant impact on ROE. Conversely, Research of Abiodun (2012) found that the macroeconomic reflected by economic growth, inflation, interest rates and exchange rates had no significant effect on ROA. Just like a cycle, the stability of the banking system is an important element in the creation of the stability of the financial system of a country's economy. Several other external shocks coming from abroad as the global financial crisis that followed a series of recessions in the world can impact directly or indirectly on the bank's performance. The indirect effect happens, e.g., when the shocks affecting the condition of Indonesian macro, the macro condition can affect the performance of the bank (Aviliani et al. 2015).

Several previous studies used profitability indicators ROA and ROE to measure the performance of the banking (Alper and Anbar 2011; Ali et al. 2011; and Mirzaei et al. 2011). The profits of an organization come from the company's assets and equity held. ROA reflects the ability of the bank's management to create profits derived from the bank's assets. ROE shows the return on equity to shareholders. ROA is not distorted by the high equity multiplier, while ROE ignores the risks associated with high financial leverage.

In addition to using ROI and ROE indicators, some researchers use Net Interest Margin (NIM) and Non-Performing loan (NPL) as an indicator of the bank's performance. NIM and NPL are indicators that focus on the main activities of the bank. NIM showed profits of banks from activities that produce flowers (Naceur 2003; Dumičić and Ridzak 2013; Bektas 2014), while NPL able to measure the quality of the company balance sheet (Festic and Beko 2008; Curak et al. 2013; Makri et al. 2014).

In general, previous studies only describe the effect of macroeconomic and internal factors on bank performance. Though, the macroeconomic environment also had an influence on internal environment of bank. The instability of exchange rates, interest rates and inflation will have an impact on the company's success in managing assets and loans or loans received by investors. Therefore, this study will examine the interrelations between macroeconomic environment, internal environment and the performance of banks in Indonesia period 2011-2015.

2. THEORETICAL FRAMEWORK AND HYPOTHESES

The Macroeconomic Environment and Performance

The bank's performance is related to environmental

changes and the competitors' behavior. The form of environmental change can also affect the companies' performance. A bad environment can degrade the banks' performance. Conversely, if the external environment such as regulatory or improving economic conditions will improve bank performance. Therefore, profit maximization as the performance indicators relating to market forces. In economic theory also stated that in a situation of perfect competition, the profit maximization is equivalent to cost minimization. Exogenous factors such as regulation and economic shocks can cause mediocre performance (Bikker and Bos 2008).

Kunt (2000) describes the factors that determine the occurrence of banking crises that may affect the bank's performance is a factor of macroeconomic, financial, and institutional. Since early 1980, macroeconomic problems become systemic problems in the banking sector throughout the country. The banking crisis occurs when the macroeconomic conditions weaken. The decline in per capita income leads to increased risk in the banking sector. Kunt (2000) emphasizes the importance of considering changes in the external environment banks so that does not lead to a decrease in the company's performance.

The economic development of a country can be measured by national income, economic growth, or even more generally considered to be a positive influence on the bank's performance. When the economy is booming, there are more sources of capital that can be obtained easily from the financial markets as a buffer from the various possibilities that may occur as a result of risk-taking activities of banks (Aviliani et al. 2015). But research Bonin, et al. (2005) actually found that the macro variables that proxy for economic growth have a significant influence but negative ROA. The higher the economic growth that associated with the development of the banking sector so that competition among the banks with other banks becomes more intense, and ultimately reduce the level of ROA.

Internal Environment and Performance

As a growing organization in a dynamic environment, banks should not only focus on changes in the external environment and develop a strategy to improve its performance, but also simultaneously develop performance by performing alignment on environmental factors or internal. Mishkin (2001) stated that the performance of a bank seen from the main objective, namely how it operates to obtain the highest profit potential. Based on the operations or business of a bank manager is basically concerned with four main things to improve its performance.

There are some strategies for the above efforts. First, liquidity management, which ensures the bank, has sufficient cash to pay depositors who will take the funds. Second, asset management, which banks, should pursue a low risk level by acquiring assets that have a lower risk and diversify asset holdings. Third, liability management, which banks concern to how to obtain funds at a lower cost. Fourth, the bank's capital adequacy management which must decide on the amount of capital that must be managed and to get the required amount of capital. In the meantime, the performance of the bank or the bank's ability to increase its business value is through increased profits, assets and future prospects, but the focus of the evaluation will continue to rely on earnings or profitability and risk.

Research of Berger et al. (1993) and Shahchera (2012) found that the bank's profitability as a performance indicator is influenced by internal factors such as liquidity bank. In the country's financial situation is relatively stable, high liquidity will encourage lower bank profitability (Bordeleau and Graham 2010; Olarewaju and Adeyemi 2015). In addition, internal factors others include management decisions and policy targets bank (Syafri 2012), the bank's capital, size, liquidity risk, productivity and cost efficiency (Alexiou C and Sofoklis 2009), capital adequacy, bank size, liquidity risk, risk loan, efficiency and effectiveness of management (Ayanda et al. 2013), capital adequacy, asset liquidity, management efficiency, and liquidity (Adeusi et al. 2014).

The Macroeconomic Environment and Internal Environment

The internal environment is an environment that is relatively controllable by companies as compared with the external environment. In banking, internal factors synonymous with financial ratios for each bank always takes into account the ratio of a bank's performance as a tool in any financial statement. The internal factors affecting profitability include Capital Adequacy Ratio (CAR), Operating Expenses to Operating Income (BOPO), and Loan to deposits Ratio (LDR). Capital Adequacy Ratio is the percentage of capital to major financial institutions with assets (loans and investments) which are used as a measure of financial strength and stability.

Especially, BOPO illustrates the interest expense to be paid and bank earnings. Interest rate depends on the macro variables, especially the BI rate is the basis for determining both lending and

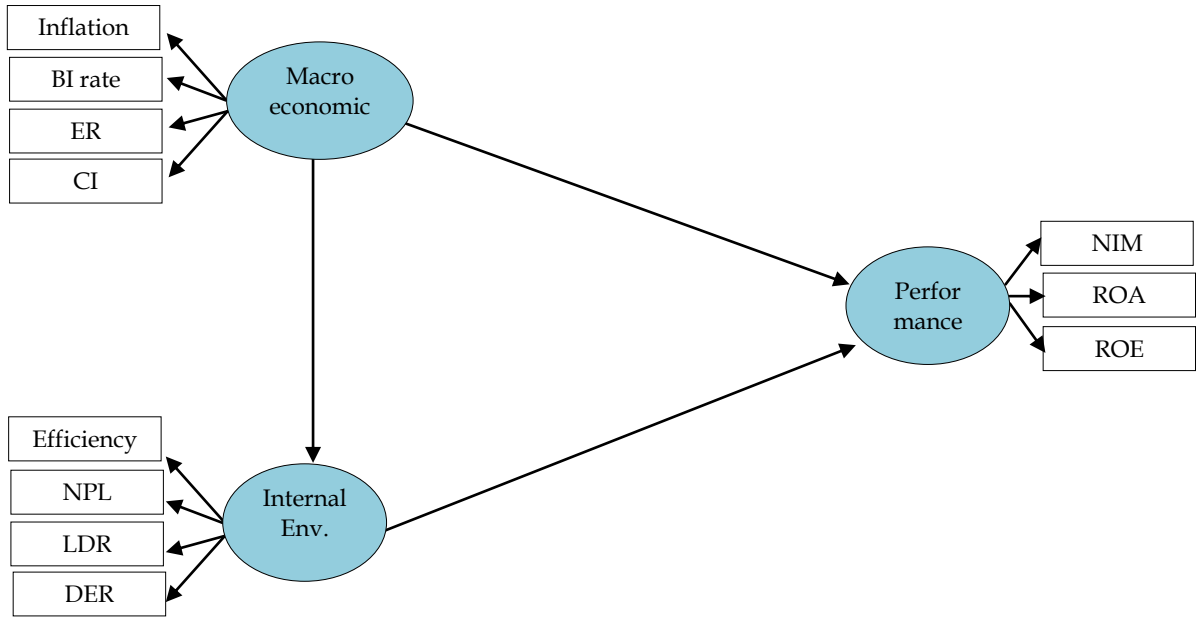

Figure 1
Conceptual Framework

deposits. When the BI rate increased the cost of funds will rise. Assuming a constant operating income ROA ratio will increase (Aviliani et al. 2015). LDR describe the size of the bank's liquidity obtained from the ratio of the number of loans with deposits. High LDR showed an increase in bank deposits or increase the ability of banks to earn (Rengasamy 2014).

The assessment of bank performance in Indonesia is regulated by Bank Indonesia Regulation Number 13/1/PBI/2011 on the Assessment of Commercial Banks. On the regulation of bank, performance factor consists of three elements that include the implementation of good corporate governance (GCG), profitability, and capital. At the risk profile are 8 risks such as credit risk, market, liquidity, operational, legal, strategic, compliance, and reputation. The bank's performance according to the regulation is based more on risk management aspects when it becomes important to analyze the sources of risk are also directly affects the performance of the bank. Therefore, according to the bank's performance PBI relevant to the opinion expressed by Miskhin (2001) which gives emphasis on the aspect of risk as a determinant variable performance of the bank.

Domestic banks have better performance compared to foreign banks (Berger et al. 1995). This finding suggests that banks operating in more than two countries face greater challenges than banks that only operate in one country. The different environment consists of policies, financial regulations, interest rates, exchange rates, inflation or economic growth of national income (Aviliani et al. 2015). Hedwigis and Dwiningtyas study (2010) showed that the rupiah exchange rate against the dollar is not proven positive and significant impact on state-owned bank profitability (ROA). But the research results of Octaviyanty et al. (2013) would indicate that the exchange rate has a significant effect on the performance of the bank as measured by ROA indicator. Another variable that affects the bank's performance is the growth of GDP and inflation (Naceur 2003), economic growth and inflation (Ali et al. 2011; Mirzaei et al. 2011) and interest rates (Festic and Beko 2008; De Bock and Demyanets 2012).

3. RESEARCH METHOD

Research Design

This research is causality research that tested the effect of several variables on the performance of banks in Indonesia. The data were obtained from the time series data of financial statements and performance reports Indonesia Stock Exchange period 2010 - 2015. The data were analyzed using inferential statistics using Structural Equation Modeling (SEM) variance-based method called Partial Least Square (PLS). All can be seen in Figure 1 and Table 1.

Based on the literature review and conceptual framework shown in Figure 1, then the hypotheses are stated as the following:

Hypothesis 1 : Environmental macroeconomic positive and significant impact on performance.

Hypothesis 2 : Environmental macroeconomic positive and significant impact on internal environment.

Table 1
Research Variables

No	Indicator name	Type of data	Description
Independent Variable			
Macroeconomic (X1)			
1.	Inflation	Ratio	
2.	BI Rate	Ratio	
3.	Exchange rate (ER)	Ratio	
4.	Composite index (CI)	Ratio	
Dependent Variable			
Internal Environment (X2)			
1.	Efficiency	Ratio	Operational cost / Operational revenue
2.	NPL	Ratio	Non-performing loan / total loan
3.	LDR	Ratio	Loan/ Deposits
4.	DER	Ratio	Total debt/ Total equity
Performance (Y)			
1.	Net Interest Margin (NIM)	Ratio	Net interest income / average of earning assets
2.	Return on Asset (ROA)	Ratio	Earnings before tax / average of total asset
3.	Return on Equity (ROE)	Ratio	Earnings after tax/ average of equity

Table 2
Research Sample

No	Description	Total
1	Bank listed in Indonesia stock exchange period 2011 – 2015	42
2	Bank publish financial report regular and timely	21
3	Bank publish financial report regular and timely period 2011 - 2015	10
Sample		10

Hypothesis 3 : Internal environment positive and significant impact on performance.

Sampling Criteria

Criteria for determining the sample in this study are as presented in Table 2.

4. DATA ANALYSIS AND DISCUSSION

Results

Table 3 shows the descriptive analysis and summary statistics of each variable used. The overall determinant variable performance of the bank has an average value that is positive. As shown in Table 3, for the internal environment, the indicator with the highest value is the standard deviation of BOPO (Operating Expenses Operating Income). For performance variables, indicators ROE has the highest standard deviation while the macro environment, exchange rate indicator has the highest standard deviation. The value of the highest standard deviation shows that the indicator has the most significant variance compared with other indicators in each variable.

Table 4 shows the correlation matrix of each variable. In Table 4, it appears that the variable BI rate, exchange rate, stock index, ROA, NPL, LDR, DER has a negative correlation with ROA, while the variable inflation is positively related to ROA as the dependent variable. Variable inflation, BI rate, exchange rate, stock index, ROA, and LDR has a negative correlation with the variable NIM, while the NPL and DER have a positive relationship. Table 4 also shows the correlation between the variables of the macro environment and the internal environment with the ROE as dependent variable. Variable inflation, BI rate, exchange rate, stock index, ROA, DER NPL and negatively correlated with ROE while LDR and NIM was positively related.

The negative correlation between variables as shown by the variable BI rate, exchange rate, stock index, ROA, NPL, LDR, DER to ROA, variable inflation, BI rate, exchange rate, stock index, ROA, and LDR against NIM and inflation, BI rate, exchange rate, stock index, ROA, NPL and DER to ROE means that changes each independent variable with the dependent variable the opposite direction. Meanwhile, the positive correlation between the variables Inflation by ROA, and the NPL variable DER with NIM, as well as the LDR and NIM with ROE showed a unidirectional relationship. In other words, that changes in line with the changes of independent variables dependent.

Table 5 shows the ability of each indicator in

Table 3
Descriptive Statistic

	Minimum	Maximum	Mean	Standard deviation
ROE	(18.96)	34.16	13.46	12.37
ROA	(1.64)	5.54	1.99	1.64
NIM	2.80	8.55	5.37	1.34
Inflation	3.35	8.38	5.64	2.28
SBI (BI rate)	5.75	7.75	6.85	0.82
IHSG	3,822.00	5,227.00	4,446.60	466.68
Exchange rate	9,023.00	13,726.00	11,375.40	1,790.29
DER	3.03	11.40	7.79	1.88
BOPO	56.34	114.63	81.85	14.72
LDR	65.79	113.30	90.90	9.67
NPL	0.10	6.25	1.94	1.48

Source: Proceed 2016.

Table 4
Correlation Matrix

	Inflation	BI rate	Exch. rate	CI	BOPO	NPL	LDR	DER	NIM	ROA	ROE
Inflation	1										
BI rate	0.692	1									
Exch. rate	0.306	0.866	1								
CI	0.508	0.702	0.658	1							
BOPO	-0.017	0.044	0.058	0.059	1						
NPL	-0.043	-0.028	-0.016	0.004	0.478	1					
LDR	0.117	0.260	0.300	0.197	0.029	0-.284	1				
DER	-0.101	-0.246	-0.277	-0.215	0.135	0.390	0.303	1			
NIM	-0.090	-0.190	-0.187	-0.160	-0.655	0.018	-0.243	0.010	1		
ROA	0.015	-0.054	-0.077	-0.063	-0.978	-0.414	-0.074	-0.120	0.745	1	
ROE	-0.034	-0.116	-0.115	-0.097	-0.948	-0.439	0.006	-0.029	0.710	0.962	1

Source: Proceed 2016.

measuring the variables. Based on Table 5 it can be seen that all significant indicators as a measure of a macroeconomic environment variable. BI rate is an indicator that has the highest value of outer loading which means that the BI rate be the most significant indicator represents the macro environment variable. In other words, words that significant changes in the macro environment is seen from the changes BI rate. Changes in the bank's internal environment variables in this study are represented by the indicators ROA, DER, LDR and NPL. Having regard to the outer loading value of each indicator, the indicator BOPO be the most significant indicator describes the changes that occur in the internal environment of a bank in Indonesia period 2011-2015.

The variable of bank's performance in the study was measured using indicators ROA, ROE and NIM. But based on the results of the count value of outer loading, then the variable performance of banks in Indonesia in 2011 - 2015 is represented by the most significant indicators of ROA. In other words, whether or not the bank's performance should be seen from the ability to earn a return on investment of the assets owned.

Goodness of Fit model is done by using a predictive value relevance (Q^2) based on the value of R^2 each endogenous variables, as follows:

1. Measurement of endogenous variable performance of the bank, obtained R^2 of 0.7818 or 78.18%. This indicates that 78.12% of bank performance is affected by the decree of the macroeconomic environment and internal environment.
2. Measurement of an endogenous variable internal environment, obtained R^2 of 0.001371, or a 0.01%. This indicates a 0.01% internal environment is affected by the macroeconomic environment.

Thus the relevance predictive value (Q^2) is obtained as follows:

$Q^2 = 1 – (1 – R_1^2)(1 – R_2^2)$
$Q^2 = 1 – (1 – 0.7818)(1 – 0.0,001)$
$Q^2 = 0.7820$

Table 5
Outer Loading Indicator on Variables

			Outer Loading	Remarks
CI	←	Macro	0.857411	Significant
Inflation	←	Macro	0.580451	Significant
Exchange rate	←	Macro	0.920131	Significant
BI rate	←	Macro	0.950310	Significant
BOPO	←	Internal	0.964972	Significant
DER	←	Internal	0.288088	Non-significant
LDR	←	Internal	0.042735	Non-significant
NPL	←	Internal	0.671605	Significant
NIM	←	Performance	0.838612	Significant
ROA	←	Performance	0.980812	Significant
ROE	←	Performance	0.971705	Significant

Source: Data proceed 2016.

Table 6
Calculation Result Inner Model Direct Effect between Variables

Direct Effect	Inner Weight	T-statistic	P-value	Remarks
Macroeconomic -> internal environment	0.057	0.375	0. 723	Non-significant
Macroeconomic-> performance	-0.074	1.186	0.288	Non-significant
Internal environment -> performance	-0.877	39.740	0.000	Significant

Source: Data proceed 2016.

The calculation result showed predictive value-relevance of 0.7820 or 78.20% very high value, so the model is said to be worthy to have predictive value relevant. Relevance predictive value of 78.20% indicates that the diversity of data that can be explained by the PLS model built amounted to 78.20%, or in other words, the information contained in the data 78.20% can be explained by the model. Besides that, the remaining 21.79% can be explained by other variables (which is not contained in the model) and error.

Discussion

The Influence of the Macro Environment of the Internal Environment

Table 6 describes the results of a count of the direct influence of each independent variable on the dependent variable.

As shown in Table 6, the test results show the direct influence of the macroeconomic environment of the internal environment, inner weight coefficient values obtained for 0.057, with the value of the T-statistic of 0.375, and p-value of 0.723. The results of these tests show that there is no significant direct effect between the macroeconomic environments of the internal environment of the bank. Inner weight coefficient that is positive indicates that the relationship positive. That is, the higher the changes in the macroeconomic environment, the better the bank's internal environmental change in Indonesia. When looking at the value of outer loading indicator most significant variable macro environment and internal environment, it can be said that the change in BI rate does not significantly affect the level of efficiency of banks in Indonesia period 2011-2015.

BI rate changes are considered a benchmark for other interest rates so that changes that occur in the BI rate will be followed by changes in interest rates on inter-bank funds and deposit rates. Increasing interest rates has an impact on people's desire to save or invest. Hence, the expected profits from investments over the interest rate (the cost of the use of such loans). In the event of interest rate conditions in the balance, it means there is no incentive to save would be similar to urge entrepreneurs to make investment.

The efficiency of banks represented by BOPO basically reflects the bank's activities in collecting and distributing funds from the public. ROA ratio is used to measure the ability of bank management in controlling operating expenses to operating income. The smaller this ratio means more efficient operational costs incurred by the bank concerned. But the results of this study showed that the BI rate changes do not affect significantly the level of banking efficiency in managing its activities as intermediation institution.

Macroeconomic Environment Influences on Performance

The test of direct influence of the macroeconomic

environment on the performance indicates the inner weight coefficient of -0.074, with the value of the T-statistic of 1.186, and p-value of 0288. The results of these tests show that there is no significant direct effect between the macroeconomic environments on the performance of the bank. Inner weight coefficients, which are negative, mean that their relationship is negative or contradictory. That is, the higher the changes in the macroeconomic environment, will lead to increasingly poor performance of banks in Indonesia period 2011-2015.

It can be said that BI rate change will reduce the bank's ability to take advantage of the assets owned in reference to the value of outer highest loading, the BI rate to the macroeconomic environment variables and ROA for the variable performance. BI rate changes directly affect the response of the community to interact with banks as intermediaries in the economy. Loans interest rates are high, with the other assumptions constant, would impact the amount of credit granted when the loans is one of the assets expected to be high by the bank. Conversely, if interest rates are low, then the bank's revenue from its investments will impact the low ROA obtained.

The results of this study is different from the findings of Muhammad Ali (2015) who found that interest rates and inflation positive and significant impact on the profitability of banks in Pakistan. This indicates that the macroeconomic environment of different countries will have different impacts on the performance of the bank. However, the findings of this study together with the results of research conducted by Ongore and Kusa (2013) that the macroeconomic environment does not significantly influence the performance of the bank.

Internal Environmental Influences on Performance

The direct influence of the internal environment of the performance shows the inner weight coefficient of -0.087, with the value of the T-statistic of 39.740, and p-value of 0.000. The test results indicate that there are significant effects between the internal environments of the bank's performance. Inner weight coefficients, which are negative, mean that their relationship is negative or contradictory. That is, the higher the internal environment changes will result in increasingly poor performance of banks in Indonesia.

It can be said that the higher the ROA, the lower ROA in reference to the value of outer loading two variables, namely the internal environment variables and performance of the bank. ROA as a measure of efficiency is directly related to the costs and revenues that occurs in each bank. Changes in the value BOPO not only affect the efficiency of the bank, but also directly affect the ability of banks to make a profit.

5. CONCLUSION, IMPLICATION, SUGGESTION, AND LIMITATIONS

It can be concluded that it is important to see the strategic role of banking to the country's economic growth. As a financial intermediary, the banks' performance that is achieved indirectly affects the nation's economy. The results showed that the changes in the BI rate negative effect but not significant changes in the performance of banks listed on the Indonesia Stock Exchange period 2011 - 2015. However, the internal environment has a significant negative effect on bank performance.

Based on the research results, the suggestion is to make the banking institutions more focused on management activities that can make a major contribution to the company compared to the costs incurred. Similarly, in terms of the generation of profits derived from assets and equity held.

It can be implied that in order the banks can improve their performance, they should improve their internal environment. The banks with better internal environment can be predicted that they can increase their performance.

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