DOI <https://doi.org/10.18551/rjoas.2018-07.17>**STUDY OF FACTORS AFFECTING BANK SOUNDNESS****Satrio Vigo*, Achsani Noer Azam, Andati Trias**

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ABSTRACT

This research aimed to analyze the development and soundness level of banks using RGEC method to banking companies registered in ISE during the period 2010-2016. This research was aimed to 20 banks registered in ISE and conducted in August-December 2017. The secondary data, which is used to complement the writing of this research, came from the financial statements of period 2010-2016.

KEY WORDS

Bank, soundness, public services, policy.

The level of bank soundness will determine the quality and balance of the national financial system. According to Thomson (1991), bank soundness is an early warning system for the bank's current performance and for its future prospects. The purpose of the assessment of the soundness of a bank is to illustrate whether or not the bank can perform its function properly. The banks are categorized and considered as sound if it can perform its functions well, which is to maintain and preserve public trust, help smooth payment traffic and assist the government in carrying out the policy, especially monetary policy. In addition, to be able to perform its functions properly, the bank must have enough capital (Derviz Podpiera, 2008).

Bank Indonesia as the central bank of Indonesia has established a policy on the soundness of commercial banks using Capital, Asset Quality, Management, Earning, Liquidity (CAMEL) method. This regulation is set forth in Bank Indonesia Regulation no.6/10/PBI/2004 on April 12, 2004. Bank Indonesia subsequently improved the Bank's soundness assessment method from CAMEL method to Risk Profile, Good Corporate Governance, Earning, and Capital (RGEC) method. The implementation of this method is contained in the Circular Letter of Bank Indonesia No.13/24/DPNP on October 25, 2011 about the assessment of the soundness of commercial banks.

Figure 1 – LDR of 23 Banks in the Period 2010-2016, %

Based on Figure 1, the LDR of 23 banks tested in the research from 2010 to 2016 were 92.44%, 88.58%, 102.01%, 101.73%, 93.63%, 95.25% and 106.17%. During this period, LDR values were fluctuating but tend to be in fairly sound and unsound conditions. In 2011, the LDR was declining but starting from 2012 and then it was continuing to increase by 106.17%. The increasing LDR value indicated that the bank highly disbursed its credit while

the source of funds owned by the bank was limited. If the condition was left unchecked, it would let the bank to experience liquidity that affects the public's trust in the bank.

The form of loan disbursement by a bank can be in the form of property loans that is regulated in the Regulation of the Minister of Housing of the Republic of Indonesia, No. 13 of 2012 on the procurement of housing through loans or financing the ownership of a prosperous house with the support of housing financing liquidity facility with the highest interest rate of 7.25%. On September 24, 2013, Bank Indonesia issued circular letters related to the completion of Loan to Value (LTV) or Financing to Value (FTV) for property ownership credit and credit consumption of collateral property. The reason of Bank Indonesia issuing the Loan to Value regulation was that property values in Indonesia in recent years have soared too high so that it was feared to continue to increase the price of property assets in Indonesia that does not reflect the actual price (property bubble). If the property industry collapsed, then the bubble property price was corrected in the market, then the property prices decline below its intrinsic value, and will certainly have an impact on the banking industry (Lacovone and Zavacka, 2009). Figure 2 shows how the financing distribution on property loans which was published on 23 September 2013.

Table 1 – LTV Regulation on September 23, 2013

Financing & Collateral Type	Maximum LTV/FTV FK/FP 1	FK/FP 2	FK/FP 3
HOL Type>70	70%	60%	50%
SHOL Type >70	70%	60%	50%
HOL Type 22-70	-	70%	60%
SHOL Type 22-70	80%	70%	60%
SHOL Type to 21	-	70%	60%
Store/Office OL	-	70%	60%

Source: Circular Letter of Bank Indonesia No. 15/40/DKMP.

A year since the issuance of the regulation, Bank Indonesia noted that the LTV policy had an impact on slowing House Ownership Loan (HOL) growth to 11.9% in December 2014 from 26.5% in December 2013. It prompted Bank Indonesia to revise one of its macro-prudential policies through the enactment of Regulation No. 17/PBI/2015 on Loan to Value or Financing to Value for loans or property financing and loan advances or motor vehicle financing. It was performed as an effort to encourage banking intermediation, as well as to provide a signal of support to the national economy through macro-prudential policy adjustment. In addition, LTV policy is aimed at helping lower middle income societies in meeting the real needs (first homes) for shelter.

Table 2 – LTV Regulation on June 18, 2015

Financing & Property Type	Ownership Loan & Sharia Ownership Loan		
	1	2	3
Landed Houses	70%	60%	50%
Type>70	70%	60%	50%
Type 22-70	-	70%	60%
Type to 21	80%	70%	60%
Flats	-	70%	60%
Type>70	-	70%	60%
Type 22-70			
Type to 21			
Stores/Offices			

Source: The Regulation of Bank Indonesia No 17/10/PBI/2015.

The objectives of conducting the research are:

- Analyzing the development and soundness level of banks using RGEC method to banking companies registered in ISE (Indonesia Stock Exchange) during the period 2010-2016.
- Testing and analyzing the effect of the LTV regulation on RGEC to banks registered in the ISE during the period 2010-2016.

LITERATURE REVIEW

Bank is a financial institution whose main activity is collecting funds from the society and channeling the funds back to the society and providing other bank services (Kasmir, 2012). According to Law No.18 of 1998, the definition of a bank is a business entity that collects funds from the public in the form of savings and distributes it to the community in the form of credit and or other forms in order to improve the standard of living of the people.

From the above understanding, it can be concluded that the bank is a place for people who make business in the field of finance, where people can save money and get credit facilities or other services.

According Susilo (2000), bank soundness can be defined as the ability of a bank to perform operational banking activities normally and fulfill all its obligations well under the applicable regulations. The definition of bank soundness is a very wide limitation because the soundness of the bank does include the soundness of a bank in carrying out its entire banking activities (Anderson and Fraser, 2000). The activities are: the ability to raise funds from the society, from other institutions and equity, the ability to manage funds, and the ability to channel funds to the society (Abbasi, 1999). In addition, it includes the ability to fulfill obligations to the public, employees, owners of capital and other parties and compliance with the applicable banking regulations.

This research measures the risk profile factor by using two indicators namely credit risk factor using Non-Performing Loan (NPL) formula and liquidity risk using Loan to Deposit Ratio (LDR) formula. From these two risks, the researchers can obtain quantitative data that cannot be obtained on operational risk factors, legal risk, strategic risk, compliance risk and reputation risk (Furqan, 2012).

The assessment of GCG factors in the RGEC approach is based on three main aspects: governance structure, governance process, and governance output (Peni and Vähämaa, 2012). According to the stipulations of Bank Indonesia stated in Bank Supervision Report (2012), "governance structure covers the implementation of duties and responsibilities of the Board of Commissioners and Board of Directors as well as the completeness and execution of the committee's duties; governance process includes bank compliance function, handling of conflict of interest, implementation of internal and external audit function, implementation of risk management including internal control system, provision of fund to related parties and big fund, and bank strategic plan (Santiso, 2001); the final aspect, governance output include transparency of financial and non-financial conditions, GCG implementation reports that meet the principles of Transparency, Accountability, Responsibility, Independency, and Fairness (TARIF)".

The assessment of earnings factor is based on three ratios:

- Return on Asset (ROA) is the ratio of earnings before tax to the average of the total assets.
- Net Interest Margin (NIM) is the ratio of the net interest income to the average of the total assets.

According to Bank Indonesia regulation no. 13/1/PBI/2011 article 7, paragraph 2 as referred to in article 6 letter d shall include an assessment of capital adequacy and capital management. CAR is the ratio of bank performance to measure capital adequacy owned by banks in supporting the assets that contain or generate risk (Cashmere 2012).

METHODS OF RESEARCH

This research was aimed to 20 banks registered in ISE and conducted in August-December 2017. The type of data and information used in this research consisted of secondary data (Ryan et al., 2002). The secondary data, which is used to complement the writing of this research, came from the financial statements of period 2010-2016. In this research, the data collection technique used was documentation. According Suharsimi Arikunto (2014) documentation method is to observe (stare) the object to obtain information in the form of three kinds of sources, namely writing (paper), setting (place), and paper or

human being (people). The documents required in this research were the financial statements of commercial banks for the period 2010-2016 accessed through www.idx.co.id and the websites of each commercial bank.

Binary Logistic Regression. Binary regression model is a model used to determine the relationship between explanatory variable (X) with the response variable (Y) that is binary. Logistic regression requires a logit connective function, logit transformation as a function of $\pi(x)$ as follows:

$$g(x) = \ln [\pi(x) / 1 - \pi(x)] = \beta_0 + \beta_1 X_1 + \dots + \beta_p X_p$$

Therefore, in general, the equation is:

$$g(x) = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \dots + \beta_6 X_6$$

Where: $g(x)$ = Bank Soundness; X_1 = NPL; X_2 = LDR; X_3 = GCG; X_4 = ROA; X_5 = NIM; X_6 = CAR; β_0 = Intercept; $\beta_1, \beta_2, \dots, \beta_6$ = the coefficients of each variable.

For independent variables that were categorical, dummy variables were required. Generally, if a nominal or ordinal scale variable has a value probability of k, then the dummy variable of k-1 is required. For example, the independent variable j has kj level. D_{ju} represents dummy variable of kj-1 and β_{ju} is the dummy coefficient with $u = 1, 2, \dots, kj - 1$. Thus, the logit model with the independent variable of p and the j variable was discrete.

RESULTS AND DISCUSSION

Non-Performing Loan (NPL). Prior to the policy of LTV 1, banks with an average sound level of 1 had a good NPL value. After the issuance of LTV 1, the NPL of the banks was getting better because it decreased to 0.60%. The impact of LTV 1 easing is the issuance of LTV 2 along with the increase of NPL value to the banks with sound level of 1. The impact of LTV 1 and LTV 2 on banks with sound level 2 tends to make the NPL continue to increase. One of them was BBTN in which BBTN is the pioneer of credit in housing. Banks with the sound level of 3 and 4 tend to be opposite and relatively volatile.

Loan to Deposit Ratio (LDR). At that time, the aim of LTV was to reduce the possibility of bubble property. The risk of this bubble property occurs when the money in circulation exceeds the growth of gross domestic product in which in the future the excess money will be misused. If the money liquidity within the community cannot be managed by the bank, then it will cause an economic crisis. Based on the following table, it can be seen that the LDR in all four level of bank soundness tend to increase. If this increase is ignored, then it tends to degrade the bank soundness because the sound LDR limit is 75% -85%. The increase of LDR is due to the large amount of funds used by banks in the property sector due to the increased property demand.

Good Corporate Governance (GCG). The average of GCG owned by these 23 banks during 2010 to 2016 was 1.87 in which the value is below 2.5 which means that the banks had good GCG. The highest GCG value was owned by BCA in 2012 of 3.25 and the lowest or best GCG number was 1 which was owned by NISP twice consecutively namely in 2015 and 2016. The GCG level in all four ratings of the bank was fluctuating but still at a sound level, so the existence of policies and changes from LTV did not have a big effect on GCG.

Return on Assets (ROA). If it is associated with LTV 1 and LTV 2 policies, all banks, becoming the samples, by 2014 had decreased the ROA value which was caused by after the issuance of LTV 1, the interest from the public in purchasing the property tended to decline due to the amount of down payment to be paid. The decline in public interest to purchase property loans will certainly lead to a decline in profit or benefit to be obtained by the bank. After the easing of LTV policy in 2015, the ROA value of all banks increased again, which means that the public interest in purchasing property improved again.

Net Interest Margin (NIM). The average NIM value of 23 banks under the research was 3.43, which means the average NIM was in good category. The highest NIM was owned by

BBNP in 2016, which was 17.59 and the lowest NIM was owned by SDRA in 2014 which was 0.25 that decreased after SDRA merger between Bank Saudara and Bank Woori. The issuance of LTV 1 and LTV 2 policies did not affect the soundness of banks in sound level of 1 and 2. Although there was a decrease in 2016, but the NIM ratio was still within the limits of the category of sound banks; occurred also to the banks with sound levels of 3 and 4 namely SDRA, BEKS and BSWD that had a decreasing NIM ratio.

Capital Adequacy Ratio (CAR). The average CAR of 23 banks under the research was 17.39, which means that the average NIM was in good category. The highest CAR was 48.49 owned by BKSJ in 2011 and the lowest CAR was 8.02 owned by BEKS in 2015. The impact of LTV 1 was attributed to CAR. Although all banks becoming the sample had sound CAR ratios, but after the issuance of LTV 1, the CAR ratio tends to decline as the existing capital in the bank was channeled to finance customers who will apply for property loans. After the LTV 2 in 2015, the CAR ratio had increased again, which means that the banks could reduce their capital because LTV 2 contains loosening rules on down payments in property purchases.

The Results of Binary Logistic Regression:

- Test of the Effect of NPL on Y. The results of Wald Test showed that the probability value was 0.000. The probability value (0,000) was smaller than alpha 10% which meant that the NPL had significant effect on Y. The coefficient value was -0.721 (negative) which meant that the increase of NPL value would tend to become unsound. The value of odds ratio was 0.486 which meant the increase of NPL by 1%. The chance to be sound was 0.486 times of unsound opportunities.
- Test of the Effect of LDR on Y. The results of Wald Test showed that the probability value was 0.023. The probability value (0.023) was smaller than alpha 10% which meant that the LDR had significant effect on Y. The coefficient value was -0.017 (negative) which meant that the increase of LDR value would tend to become unsound. The value of odds ratio was 0.983 which meant the increase of LDR by 1%. The chance to be sound was 0.983 times of unsound opportunities.
- Test of the Effect of GCG on Y. The results of Wald Test showed that the probability value was 0.000. The probability value (0.000) was smaller than alpha 10% which meant that the GCG had significant effect on Y. The coefficient value was -2.351 (negative) which meant that the increase of GCG value would tend to become unsound. The value of odds ratio was 0.095 which meant the increase of GCG by 1%. The chance to be sound was 0.095 times of unsound opportunities.
- Test of the Effect of ROA on Y. The results of Wald Test showed that the probability value was 0.050. The probability value (0.050) was smaller than alpha 10% which meant that the ROA had significant effect on Y. The coefficient value was 0.422 (positive) which meant that the increase of ROA value would tend to become sound. The value of odds ratio was 1.525 which meant the increase of ROA by 1%. The chance to be sound was 1.525 times of unsound opportunities.
- Test of the Effect of NIM on Y. The results of Wald Test showed that the probability value was 0.017. The probability value (0.017) was smaller than alpha 10% which meant that the NIM had significant effect on Y. The coefficient value was 0.414 (positive) which meant that the increase of NIM value would tend to become sound. The value of odds ratio was 1.513 which meant the increase of NIM by 1%. The chance to be sound was 1.513 times of unsound opportunities.
- Test of the Effect of CAR on Y. The results of Wald Test showed that the probability value was 0.081. The probability value (0.081) was smaller than alpha 10% which meant that the CAR had significant effect on Y. The coefficient value was -0.075 (negative) which meant that the increase of CAR value would tend to become unsound. The value of odds ratio was 0.928 which meant the increase of CAR by 1%. The chance to be sound was 0.928 times of unsound opportunities.

- Test of the Effect of LTV 1. The results of Wald Test showed that the probability value was 0.209. The probability value (0.209) was bigger than alpha 10% which meant that the LTV 1 had no significant effect on Y.
- Test of the Effect of LTV 2. The results of Wald Test showed that the probability value was (0.001). The probability value (0,001) was smaller than alpha 10% which meant that the LTV 2 had significant effect on Y. The coefficient value was -2.613 (negative) which meant that the banks in LTV 2 category would tend to become unsound. The value of odds ratio was 0.073 which meant that the banks in LTV 2 category has chance to be sound compared with unsound 0.073 times from Non-LTV-2 category to be sound compared with unsound.

MANAGERIAL IMPLICATIONS

For government regulators, especially those are related to the submission regulations of House Ownership Loan, this research found that NPL, LDR, GCG, ROA, NIM, CAR, and LTV 2 variables have effects on bank soundness. One of the tasks of banks is to keep the economy and when bank soundness is disrupted, it will affect the performance of the bank. In addition, the existence of LTV regulation that is intended to reduce the risk of bubble effect on the property sector can still be played by people outside the bank such as developers so that the LTV regulation runs less than optimal.

The findings of this research indicated that NPL, LDR, GCG, ROA, NIM, CAR, and LTV 2 had effects on bank soundness. It could be used as a reference for banks to continuously try to reduce the NPL because when there are many customers who have troubled loans, it will make the bank becoming more illiquid and must dilute its fixed assets to the third parties. The LDR describes the bank's ability to repay the withdrawals made by its customers by relying on the loans given as a source of its liquidity; the higher the LDR the lower the liquidity ability of a bank. Therefore, banks are required to keep the LDR value so that it does not exceed the maximum limit and the bank soundness is maintained. ROA is the ratio used to see the ability of banks in managing their assets to generate profits for the bank. Thus, it means that the higher the value of ROA, the better the bank's ability to manage its assets. As one of the variables affecting the soundness of banks, they are required to maintain ROA and continue to improve ROA to keep banks in sound condition.

CONCLUSION AND SUGGESTIONS

Based on the research findings that have been conducted, the following conclusions can be drawn:

- Based on the level of bank soundness, it could be seen that the RGEC in 23 banks in the period 2010-2016 were sound. From the total sample of 23 banks, they commonly have composite 2 which reflected that the bank was ready to deal with the significant negative effects of internal and external factors. The lowest composite rating was 4 which illustrated that the condition of the bank was not sufficiently ready to deal with internal and external negative and internal factors; namely PT Bank Swadesi or Bank of India Indonesia.
- Based on the results of regression test of the panel data, the ratios used consisting of NPL, NPL, GCG, ROA, NIM, CAR, LTV 1, and LTV 2 simultaneously have a significant effect of 62.4%. It means that the variability explained by factors in the model is 62.4% and the remaining 37.6% is explained by other factors outside the model. Based on the partial test results, the variables that significantly affect the soundness of the banks are NPL, LDR, GCG, ROA, NIM, CAR, and LTV 2.

Based on the research findings that have been concluded, the following suggestions are obtained:

- Based on partial testing, only LTV 2 affects the bank soundness. Therefore, further research may discuss more deeply about how the new government policy design in order to be able to achieve its goals without any disturbances to the bank soundness.

- It is expected to the next research to be able to add the number of banks and explain how much the percentage of its distribution to the credit of the consumer and add periods of time with quarterly or monthly data to get more detailed findings.

REFERENCES

1. Abbasi, K. (1999). The World Bank and world health: Changing sides. *BMJ: British Medical Journal*, 318(7187), 865.
2. Anderson, R. C., & Fraser, D. R. (2000). Corporate control, bank risk taking, and the health of the banking industry. *Journal of Banking & Finance*, 24(8), 1383-1398.
3. Arikunto, Suharsimi. (2014). *Prosedur Penelitian Suatu Pendekatan Praktik*. Jakarta (ID): PT Rineka Cipta.
4. Derviz, A., & Podpiera, J. (2008). Predicting bank CAMELS and S&P ratings: the case of the Czech Republic. *Emerging Markets Finance and Trade*, 44(1), 117-130.
5. Furqan, S. (2012). Analisis Komparatif Kinerja Keuangan Bank Devisa dan Non Devisa Dengan Menggunakan Metode REC (Risiko, Earning dan Capital). *Jurnal Manajemen Bisnis Telekomunikasi dan Informatika*.
6. Iacovone, L., & Zavacka, V. (2009). Banking crises and exports: Lessons from the past for the recent trade collapse. *The Great Trade Collapse: Causes, Consequences and Prospects*, 107.
7. Kasmir, 2012. *Analisis Laporan Keuangan*. Jakarta (ID): PT Raja Grafindo Persada.
8. Peni, E., & Vähämaa, S. (2012). Did good corporate governance improve bank performance during the financial crisis?. *Journal of Financial Services Research*, 41(1-2), 19-35.
9. Ryan, B., Scapens, R. W., & Theobald, M. (2002). *Research method and methodology in finance and accounting*.
10. Santiso, C. (2001). Good governance and aid effectiveness: The World Bank and conditionality. *The Georgetown public policy review*, 7(1), 1-22.
11. Susilo S. 2000. *Bank dan Lembaga Keuangan Lainnya*. Jakarta (ID): Salemba Empat
12. Thomson J B. 1991. Predicting Bank Failure in 1980s. *Economics Review (First Quarter)*. 9-20.