



The role of Basel III with performance measurement based on RAROC, study on bankings in Indonesia.

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Abstract

The regulation of bank soundness is important for a country's financial stability. Basel accord makes a provision regarding risk assessment in controlling the banking business with risk management. liquidity risk market risk and capital structure are imperative for a sound banking level. This study describes the assessment of bank health based on the commitment of the bank in maintaining the aspects of liquidity risk, capital structure and market risk that have an impact on banking performance. The research methodology was carried out by descriptive comparative surveys at book banks 3 and 4 with sampling of 19 Bank by identifying the data on bank performance reports for the 2008 to 2014. Linear regression test and hypothesis testing on panel data with eviews 9. The results of the study show that partially, liquidity risk has an effect on the level of bank health as seen from financial performance. Capital structure influences the soundness level of the bank as seen from financial performance, and the risk of market discipline has an influence on the soundness level of the bank as seen from its financial performance. simultaneously, financial performance is influenced by liquidity risk, capital structure and market discipline risk. This result strengthens the basel accord rule as an assessment of the health of a bank by taking into account the aspects of liquidity, capital adequacy and market discipline.

Key words: liquidity risk, capital structure and market discipline risk. Bassel III, banking performance by RAROC.

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I. Introduction

The implementation of risk management at banks in Indonesia is directed in line with the new global standards issued by the Bank for International Settlements (BIS) with a new concept of capital where the capital calculation framework is more sensitive to risk (risk sensitive) and provides incentives for improving the quality of risk management in banks. or better known as Basel II (improvement of Basel I), as adopted by Bank Indonesia through Bank Indonesia Regulation Number 5/8/PBI/2003 concerning Implementation of Risk Management for Commercial Banks. Subsequently in December 2010, the Basel Committee on Banking Supervision (BCBS) issued two Basel III documents, namely: "Basel III: A global regulatory framework for more resilient banks and banking systems (revised edition issued in June 2011)", and "Basel III: International framework for liquidity risk measurement, standards and monitoring" (DeduV and Nitescu 2012)

There is an extensive body of literature existing on evaluating the implementation of the Basel III framework globally such as that provided by Masood and Fry (2012), Bilal and Salim (2016), Kozarevic and Polic (2016), Sheng (2013), Salami (2012), Hussain et al. (2012). OJK's policy in assessing banking health is by adopting Basel III rules which have been legally implemented in 2018. Capital regulation in Basel III is to have quality capital. The regulator hopes that this rule change will reduce the risk of a bank crisis and that banks have sufficient reserve funds to deal with shocks in financial markets.

The banking capital structure can affect the bank's ability to carry out operational activities. If the amount of capital owned by banks is small, the bank's ability to face risks related to bank activities will also be small. This is because banks have a capital incentive nature, namely banks are required to have the capability and accountability to bear the risk of managing public funds.

Literature on the impact of Basel III in terms of benefits and costs (Maria & Eleftheria, 2016; Kozarevic & Polic, 2016; Ayadi R., 2012; Bilal & Salim, 2016; Boora & Jangra, 2019) concluded the following:

The benefits of implementing Basel III included an efficient risk management and portfolios, effective risk and financial supervision, transparency in financial declarations, high sensitivity to risk and balanced risk-returns.

Al-Omar, H., Al- Mutairi A (2008) increasing bank capital is more sensitive to risk and provides incentives to improve the quality of risk management implementation in banks. The bank's capital structure is due to regulatory provisions, and therefore, adding debt will increase the risk if it is not balanced with the addition of equity in order to meet the portion determined by the regulator (Amorello L; 2016). Arifin N.M (2012) Liquidity risk causes changes in bank performance. The causes of liquidity risk include components of liquid assets and dependence on external funding, supervisory factors.

Al Tamimi and Al-Mazrooei (2007); Hussain and Al-Ajmi (2012) conclude that the commercial banks face credit risk and operating risk as the part of the most important risks. Considering that banks face various risks that have an impact on their performance, it is important for management to mitigate these risks by implementing effective risk management. Managers can apply comprehensive risk management principles to each type of risk such as credit risk, liquidity risk, and operational risk, because each risk contributes to the bank's performance. Attar D. et al. (2014) and Soyemi et al. (2014) found that there was a significant influence of the risk management effectiveness on bank performance. While, Olamide et al. (2015, Massood O & Fry J. (2012) found that there was no relationship between risk management and bank performance.

AL-Omar and AL-Mutairi (2008) divided bank's risk into credit risk and liquidity risks. Unfortunately, their study showed that those risks were not influence profitability. Alkassim (2005), conclude that liquidity risk influence the profitability of both conventional and Islamic banks.

RAROC is a measure of profitability that has been adjusted to the magnitude of the risk that management allows for the allocation of capital, linking costs, capital and relating to credit risk (credit risk), market risk (market risk), and operational risk (operational risk) for various types of transactions clients and lines of business. The RAROC ratio tests the risk adjusted return (RAR) factor with the risk adjusted capital (RC). In this ratio, the level of profit and capital has been adjusted to the magnitude of the risk, so that it can provide an explanation of net profitability.

The RAROC model basically allocates capital for two basic reasons, namely risk management and for performance evaluation. RAROC allocates equity capital depending on the risk of loss, calculates the rate of return on equity, RAROC is part of the Risk Adjusted Performance Measurement or commonly known as RAPM. The results of the study provide an explanation of the relationship between various risks to RAROC's banking performance. So that the Bank's soundness level is very concerned about the stability of the banking business from the failure to manage various risks due to changes in the global economy that threaten the liquidity and market aspects of the banking business.

II. Review of Literature.

2.1. The development of the Basel Accord rules.

The Basel Committee on Banking Supervision has set rules starting from Basel I, Basel II and continued Basel III, paying attention to the readiness of banks to manage business by looking at various risk criteria, including credit risk, liquidity risk, operational risk and market risk as well as banking capital readiness. On October 1, 2014 OJK issued a Consultative Paper on Liquidity Coverage Ratio (LCR) in the Basel III Framework in assessing banking health to be further implemented by the banking industry in Indonesia. LCR is intended to ensure that banks have sufficient stock of unencumbered HQLA consisting of cash and/or easily liquidated assets for liquidity needs within a 30 calendar day period of stress scenarios. (Dedu V; 2012), FSI, (2012), Boora K & Jangra K; (2019).

a. Bank company capital theory.

According to Diamond and Rajan (1999) banks can increase bank liquidity from bank depositors but are vulnerable to risk over time. Increased uncertainty in the money market can make deposits more vulnerable because there is a role from outside the bank's capital. Larger bank capital can reduce the dependence of bank liquidity on depositors and allow banks to survive longer and avoid financial distress. Bank's paid-up capital by shareholders is valued as capital risk and public funds collected as components of capital are measured with liquidity risk so that bank capital is often referred to as the use of leverage which moderately or reasonably will reduce the overall initial capital costs and at the same time increase the value of the company.

b. Market Discipline Theory

Market discipline is necessary because of development increasingly complex financial institutions (Bliss, 2005). The more The complexity of financial institutions can be seen in financial institutions that large with a fairly large and large number of derivative transaction positions off-balance sheet activities. Amount of derivative transactions and off-balance sheet activities makes monitoring difficult and increases risk. Hall, Meyer, and Vaughan (2004), market discipline is less effective in preventing banks from taking excessive risk. market

discipline policies should include structures incentives that encourage investors to be risk aware and therefore supervise the risk taking that is carried out by bank.

c. RAROC theory

The consequence is a shift in banking practice from using regulatory instead of economic capital for performance measurement (Gaganis C; 2013) A similar trend can be observed in the insurance sector where Solvency II capital is applied in performance measures (Angelini P, Clerk L et.all; 2011).

RAROC can be considered as a bottom-up performance measure, which is computed from various basic information on the borrower and the loan facility. Alternative approaches try to improve the performance of a bank portfolio by using the past performance of a loan product as the input of a statistical forecasting model, which should help to predict future performance (Al Kasiim F.A (2005). Another study that is related to profitability measurement is by Al-Shatti AS (2015), who suggests an improvement of the loan origination process by integrating credit scoring models with loan performance measures.

RAROC is a measure of profitability that has been adjusted to the magnitude of the risk that management allows for the allocation of capital, linking costs, capital and relating to credit risk (credit risk), market risk (market risk), and operational risk (operational risk) for various types of transactions clients and lines of business. The RAROC ratio tests the risk adjusted return (RAR) factor with the risk adjusted capital (RC). In this ratio, the level of profit and capital has been adjusted to the magnitude of the risk, so that it can provide an explanation of net profitability.

In managing the company, RAROC can be used to measure performance of each Strategic Business Unit (SBU). The higher the shareholder's value added that is created, then the performance of the SBU is still good will ultimately affect the reward that will be received for the performance of the SBU. The ideal indicator of bank performance should contain the relationship between risk and return. RAROC aims to measure the risk of a bank's credit portfolio in order to be able to measure the amount capital required by a bank to maintain exposure to investors depositors and other debtholders at a high probability of loss determined. (Ayadi R & Groen W; 2012) The RAROC model defines capital as part of determining the level of risk adjusted return and added value for each business unit.

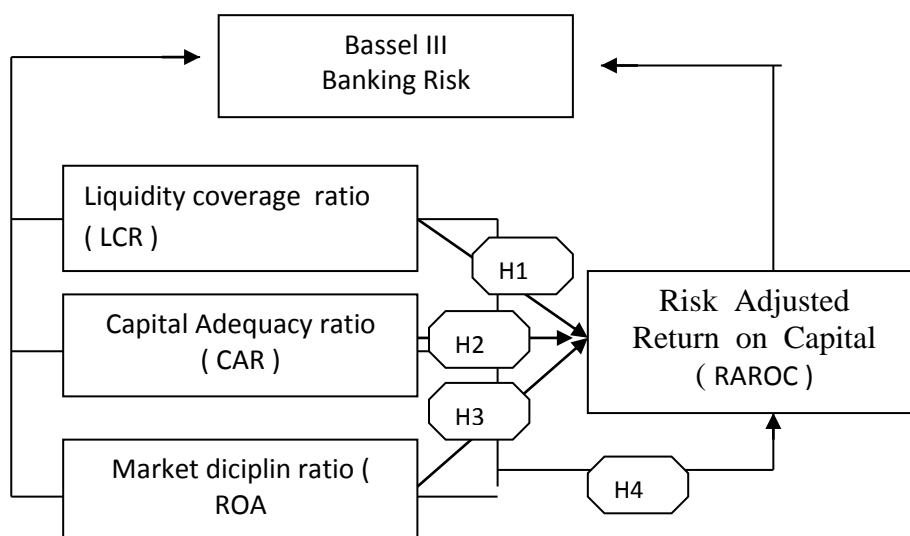
III. Research purposes.

This research was conducted to identify and analyze:

1. Effect of Liquidity Coverage Ratio or liquidity risk on banking performance (RAROC).
2. Effect of capital structure on banking performance (RAROC).
3. The effect of market discipline on banking performance (RAROC).
4. Effect of LCR or liquidity risk and capital structure and market discipline together on banking performance (RAROC)

RAROC is a measure of profitability that has been adjusted to the magnitude of the risk that management allows for the allocation of capital, linking costs, capital and relating to credit risk (credit risk), market risk (market risk), and operational risk (operational risk) for various types of transactions clients and lines of business.

IV. Reseach Model.



V. Proposition and Hypothesis.

Proposition 1:

Liquidity risk has a significant effect on RAROC's banking performance.

Banking policy to measure performance is based on RAROC with criteria such as using liquidity risk (LCR), capital structure using CAR, and measuring market risk using ROA. Srairi (2009) emphasized that better liquidity risk management followed by the higher profitability. Hidayat, S.E Al-Khalifa MD. (2012).

Chaudhry et al. (1995) and Kosmidou et al. (2005) found liquidity risk influence performance, even when using different measurements for liquidity. An evaluation of the impact of Basel regulation on loan prices is done in Dedu V and Nitescu D (2012). The impact of the Basel regulation on the variability of bank capital is analyzed in Bors I (2015); Kosmidou K and Tanna (2005); Massood O and Fry J (2012). A similar analysis for evaluating capital fluctuation under IFRS and the likelihood for bank recapitalization is done in Masciandaro D & Romelli (2017), while the new Basel rules for provisions are empirically studied in Hussain M.S Ramzan (2012). All these studies focus on capital levels, not on performance measurement.

Proposition 2: Capital structure has a significant effect on RAROC's banking performance.

An implementation of Basel regulation on loan prices is done in Massood (2012) The impact of the Basel regulation on the variability of bank capital is analyzed by Nowak R (2011); Srairi SA.(2009); Neuenkirch M (2011). The implementation of Basel II in the banking sector is expected to make the banking industry healthier and able to survive in crisis conditions. Basel III is a continuation of the three pillars in Basel II with additional protection requirements, including requiring banks to have a minimum general equity and liquidity ratio. If the CAR value is high (according to Bank Indonesia regulations of 8%) it means that the bank is able to finance the bank's operations. The CAR ratio that shows large results means that the bank can be said to be healthy.

Proposition 3 : Market risk has a significant effect on RAROC's banking performance.

a study conducted by Peria and Schmukler (2011) to prove the impact of the crisis on market discipline in Argentina, Chile, and Mexico in the period 2000s to 2010s shows that investors punish high-risk banks by withdrawing their funds and/or market discipline and preventing bottlenecks. -obstacles that may arise. Levy-Yeyati, Peria, and Schmukler (2011) conclude that market discipline will be strong if systemic risk is included in the concept. Hall, Meyer, and Vaughan (2004), market discipline is less effective in preventing banks from taking excessive risk. market discipline policies should include structures incentives that encourage investors to be risk aware and therefore supervise the risk taking that is carried out by bank.

VI. Empirical Results the Studies

RAROC Descriptive Data on National Commercial Banks Book III and Book IV.

The results of the T-Test and R-Test for the 2008-2014 Data yield the t-value for the LCR, CAR and ROA variables as follows :

Dependent Variable : RAROC
 Method: Panel Least Squares
 Date: 03/01/2020 Time: 17.35
 Sample: 2008 2014
 Periods included : 7
 cross-sections included : 19
 Total panel (balanced) obs : 133

Variable	Coefficient	Std. Error	t-statistic	Prob.
C	1.649004	0.216078	0.913502	0.0039
LCR	0.497225	0.008377	2.354222	0.0192
CAR	0.326621	0.008563	2.247993	0.0051
ROA	0.019214	0.007745	2.041711	0.0103
R- squared		0.63289	Mean dependent var	0.042682

Adjusted R-squared	0.50369	S.D. dependent var	0.166357
SE.of regression	0.16211	Akaike info criterion	0.784237
Sum squared resid	7.62142	Schwarz criterion	0.721746
Log likelihood	120.675	Hannan Quinn criteri	0.759214
F-statistic	4.89849	Durbin Watson stat	1.485649
Prob(F-statistic)	0.00007		

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1. Measurement Variables and Testing Hypotheses

From the multiple linear regression equation used in this study, it can be explained as follows:

a. constant with a value of 1.649 indicates that if all the independent variables, namely liquidity risk, capital structure and market discipline remain, the banking performance (RAROC) is worth 1.649 meaning that in the banking business, banking performance by taking into account various possible risks, both liquidity risk, capital risk and market risk has high level of stability and needs to be anticipated. This shows that the Bank's operating capital must be able to support the opportunities for risks that may occur at any time.

b. The effect of liquidity risk (LCR) shows 0.497 that if liquidity risk increases by 1 unit, then banking performance (RAROC) will increase by 0.497 units, meaning that in the banking business banking performance is influenced by liquidity risk. If the liquidity of a bank is experiencing problems, the performance of the bank has the same problem.

Meanwhile, Srairi (2009) emphasized that better liquidity risk management followed by the higher profitability. Chaudhry et al. (1995) and Kosmidou et al. (2005) found liquidity risk influence performance, even when using different measurements for liquidity. However, Molyneux and Thornton (1992) found a weak inverse relationship between liquidity and bank performance. Thus, the liquidity risk in Basel III parameters has a high level of stability and needs to be anticipated.

c. Capital Structure (CAR) of 0.326 means that it indicates that the capital structure has increased by one unit, so it has a positive effect on RAROC's financial performance of 0.326. This illustrates that capital is a factor that can affect banking performance. This shows that the minimum capital requirement is a prerequisite for the health of the Bank in the Basel III parameter.

The role of capital is very vital in banking operations. Suyono (2005) suggests that the Capital Adequacy Ratio (CAR) shows the ability of banks to provide funds for business development purposes and accommodate the risk of losses caused by bank operations. Value of CAR to up indicates the greater the total bank capital that can be used to expand credit, so that interest income will increase and banking financial performance will also increase.

d. Market Discipline as measured by Return on Assets (ROA) of 0.019 means that each increase in the return on asset ratio of 1 unit will increase banking performance by 0.019. The company's financial performance from the management side expects a high net profit because the higher the net profit, the more flexible the company is in carrying out its operational activities (Suyono 2005).

The higher the ROA, the better the company's financial performance. This is due to the increasing rate of return on the assets used. Market risk is the risk that arises due to the movement of market variables from the portfolio owned by the bank, where the movement can result in profits and losses (in this case is the movement of increasing income from interest rates and exchange rates (Mahardian 2008) thus making profitability increase.

VII. Result and Discussion on Hypothesis.

The research hypothesis supports the first hypothesis where there is a positive and significant effect of liquidity risk on financial performance (RAROC) in banking companies. The results support the research of Chaudhry et al. (1995) and Kosmidou et al. (2005), Seng A (2013), Geetika (2016), Kozarevic E and Polic N (2016), Boora K, Jangra K (2019), Bors (2015).

The results of the second hypothesis test, the CAR capital structure has a significant positive effect on RAROC. The research hypothesis supports the second hypothesis where there is a positive and significant effect of capital structure on financial performance (RAROC) in banking companies. CAR has a significant effect on the company's financial performance. This study strengthens several previous studies. Mutairi and Naser 2015, Zaroki and Rouhi 2015, Anarfo 2015, Sagara and cline 2015.

Market discipline (ROA) has a significant positive effect on RAROC.

The results implementation of market risk that affects bank performance (RAROC) where financial institutions generally carry out activities in stocks, bonds, mutual funds, forex and foreign exchange that have a high level of risk, while the Basel III rules describe a goal to increase resilience both at the micro level as well as at the macro level. Increasing resilience at the micro level is carried out by strengthening the quality of bank capital, increasing bank capital ratios, increasing resilience and adequate bank liquidity. The research hypothesis supported by Valensi (2003), Caprio and Honohan (2004), Peria and Schmukler (2001) Romera and Tabak, (2007) Barajas and Steiner (2000), Peria and Schmukler (2009) Levy-Yeyati, Peria, and Schmukler (2003) Crockett (2001).

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