FINANCIAL PERFORMANCE AND ECONOMICSIMPACT ON CAPITAL ADEQUACY RATIO

[1]SITI NORBAYA YAHAYA, [2]NUSAIBAH MANSOR, [3]KAZUHIRO OKAZAKI

[1,2,3]UniversitiTeknikal Malaysia Melaka, Aichi Institute of Technology

Abstract- Capital adequacy is very crucial in determining the level of risk absorption in banking institution. This issue has been discussed widely as it is an important yardstick to portray the whole picture of banking performance. Therefore this study investigates the financial performance and economic impact on capital adequacy ratio of regional bank in Japan. Five variables represent economic performance are unemployment rate, inflation rate, real exchange rate, money supply and gross domestic product, while financial performance of regional banks consists 6 variables namely deposit to asset ratio , return on asset, return on equity, total asset, total deposit and total loans. 64 regional banks were tested and covered the period of 10 years from 2005 to 2014. Secondary data were composed from World Bank data and individual financial statement of regional banks. Panel regression analysis was deployed In order to measure the relationship between capital adequacy and each variable.

Keywords- capital adequacy ratio, financial ratio, financial performance.

I. INTRODUCTION

The collapse of Lehman Brother in 2008 and Great East Japan Earthquake 2011 give a massive impact to Japan financial system. Regional bank in Fukushima Prefecture mostly is slightly affected. Regional bank currently required to maintain 4% capital adequacy ratio, some arguments whether the area which tendency to be affected by natural disaster need to maintain the same figure as area with less probability to hit by natural disaster. Affected area need to encounter additional financial aid to recover their operational risk. According to Junichi Ando at al (2012) small and medium enterprise faced with difficulties in getting a new loan due to double loan problem. This may increase the non-performing loan to the affected bank. Other than that Japan economics performance also contribute to the performance of each regional bank. Therefore this study attempt investigates the relationship between japan economic performance and financial position of regional bank on capital adequacy ratio. This ratio reflect the management of credit risk and it is very crucial in protecting the depositor and avoid any bankruptcy possibility.

Overview of Japanese Financial System

The regional banks have obtained a deep faith from customers due to prudent management over their long history of management. The regional banks are devoted to protection their stakeholder thorough practical management based on self-responsibility by working to stimulate further restructuring and proficiency of all aspects of management. They are efficient in responding to management issue and improve their operational risk by diversification customers' need. Introduction of Basel Accord require bank to calculate CAR based on international standard. According to Japanese Bankers Association (Zenginkyo) banks with international standard need to maintain CAR of 8% while domestic standard must have CAR of 4%.There are total of 64 regional bank in Japan operated based on principle city of a prefecture. Because of that they normally have resilient relations with local enterprise and local government organization. As at 2014, regional bank in Japan hold ¥172 trillion loans and bill discounted, ¥236 trillion deposit, 7.5 thousand branches, 132 thousand employees, 35 thousand automated teller machine and ¥2,556 billion capital stock.

II. LITERATURE REVIEW

Capital Adequacy always seen as a critical issue discussed by financial institution. It is define as percentage ratio of a financial institution's primary capital to its assets used as a measure of its financial strength and stability (Asikhia&Sokefun, 2013). Basel committee seeks to improve capital adequacy and liquidity risk management by introducing more stringent risk assessment to strengthening their capital (Aleksandra et al, 2014). Even though the Basel standards is apply for international bank however capital adequacy is agreed to have a positive relationship with profitability for both to local and international bank (Abba et al, 2013). The primary function of bank capital is to provide resources to absorb possible future losses on asset (Ahmet&Hasan, 2011).In determining the level of capital need to be secured by any deposit taking institution, macroeconomic indicators such as inflation, economic growth and employment rate need to be considered as the indicators will significantly affected on risk management process (Harley, 2008). Adegbite (2010) agreed that macroeconomic stability act as a major factor in financial steadiness, it is crucial in maintaining stable price and insuring that public sector deficits are marginal and external debt is sustainable. Bank with greater capital adequacy ratio

will absorb higher level of unpredicted losses before becoming insolvent. This study considered economic indicators and financial position of each bank as variable to examine the impact on capital adequacy ratio.

III. METHODOLOGY

The purpose of this study is to examinethe factor influencing Japan regional bank's capital adequacy ratio and its effect on financial position and economic level. Secondary data were gathered from World Bank data and individual financial statement of 64 regional bank in Japan. This study covered 10 years period start from 2005 to 2014. In order to analyze the relationship between banks' financial position represent by total assets (TA), total loans(TLoan), total deposit(TDep), Return on Asset (ROA), Return on Equity (ROE) and Deposit to Asset ratio (DAR) with dependent variables Capital adequacy ratio (CAR), Panel data regression methodology was used. Other than that the same methodology was applied to investigate the relationship between economic level and CAR whereby the economic level will used inflation rate (INF), real exchange rate (REx), unemployment rate (UNEM), money supply (MS) and gross domestic product (GDP) aseconomic indicators. CAR is calculated according to the formula and rule fixed by Japanese Bankers Association.

IV. ECONOMETRIC MODEL

This study investigate the effects of banks' financial position and economic indicator on capital adequacy ratio by using panel regression model. Based on theoretical literature review, this panel regression model is formed:

$CAR_{it} = \beta_0 + \beta_1 TA_{it} + \beta_2 TLoan_{it} + \beta_3 TDep_{it} + \beta_4 ROA_{it} + \beta_5 ROE_{it} + \beta_6 DAR_{it} + \beta_1 INF_{it} + \beta_2 REx_{it} + \beta_3 UNEM_{it} + \beta_4 MS_{it} + \beta_5 GDP_{it} + \varepsilon_{it}$

In the above equation the β_0 isa constant and β is coefficient of variables while $\varepsilon_{it}$is the residual error of the regression.

V. DISCUSSION

Table 1 shows the result of numerous descriptive analysis calculated based on selected variables data containing the means and standard deviation. During the period of the study, CAR average at 10.94%, this figure is high compare to regulator requirement at 4%.This figure indicates that the regional bank remained strong and stable. Furthermore the standard deviation of CAR is 3.52% shows the slight disparity between the CAR of various bank. Table 2 shows the correlation matrix used to determine the relationship between dependent and independent variables. It can be seen that there are inverse relation between INF,REx,GDP and CAR, while other variables show positive relationship. Furthermore all variables are tested for multicollinearity by using variance inflation factor and the result show is fairly satisfactory. Regression result will be analyzed using fixed effect model as shown in Table 3. Adjusted R square only at 13.2%, it shows that 13.2% variability of CAR can be explained by TA,TDep,TLoan,ROA,ROE,DAR, INF, REx, UNEM,MS and GDP, another 86.8% can be explained by other variables. The relationship between TLoan and CAR is significant at 1% with negative sign, while positive sign is normally expected by the researcher since the high risk expose by the bank through loan release required bank to keep high reserve to mitigate the default risk. Economic performance represent by GDP and MS shows a negative sign, it implies that the worse of economic level should attract more reserve in avoiding bankruptcy.

CONCLUSION

This study aims to investigate the relationship between financial performance of regional bank and Japan economic performance on capital adequacy ratio. Some sign of relationship between variables show a slightly different from previous study, for instance inflation should show positive relation but in this study inflation and CAR is inverse to each other. It can be concluded that other factor will give more impact to regional bank in determining their CAR. For further research more variable should be tested in order to get more satisfactory result in explaining the CAR.

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Appendixes

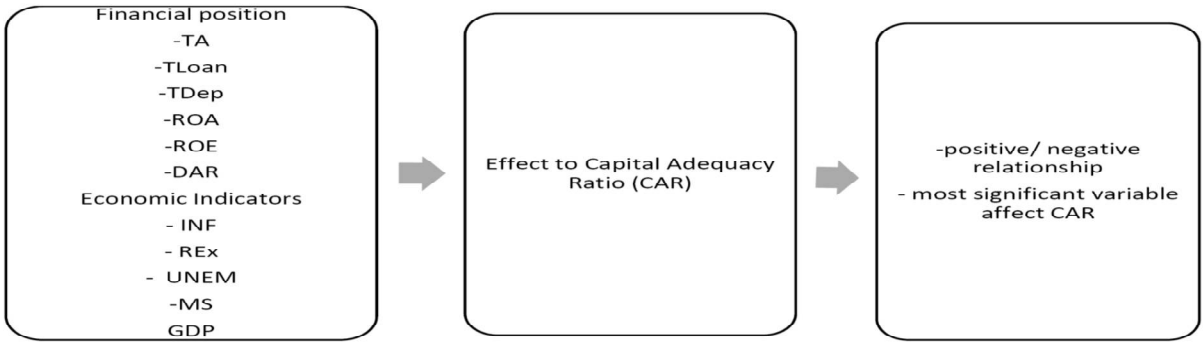


Figure 1: Research Framework

Variables	Observation	Mean	Std.Dev
CAR	640	10.941	3.529
TA	640	37236.51	26341.26
TLoan	640	25341.14	30301.92
TDep	640	35686.15	22365.04
ROE	640	3.6222	13.193
ROA	640	0.864	6.115
DAR	640	88.698	45.649
INF	640	-0.05	0.672
REx	640	83.95	29.159
UNEM	640	4.397	0.386
MS	640	1.47	1.283
GDP	640	0.87	2.590

Table 1: Descriptive Analysis of study varia

	CAR	TA	TDep	TLoan	ROA	ROE	DAR	INF	REx	UNEM	MS	GDP
CAR	1.0000											
TA	0.3208*	1.0000										
TDep	0.3005*	0.9809*	1.0000									
TLoan	0.1356*	0.5785*	0.5925*	1.0000								
ROA	0.0338	0.1479*	0.1579*	0.0784**	1.0000							
ROE	0.0925**	0.1174*	0.1404*	0.0879**	0.0489	1.0000						
DAR	0.1489*	-0.0285	0.1043*	0.0746	0.0061	0.0673	1.0000					
INF	-0.0933**	-0.0782**	-0.0827**	-0.0808**	0.0191	-0.1495	-0.0306	1.0000				
REx	-0.0643	-0.0825**	-0.0843**	-0.0079	-0.0031	0.0007	0.0376	0.1755*	1.0000			
UNEM	0.0789**	0.0923**	0.1053*	0.0987**	-0.0030	0.0983	0.0489	-0.7973*	-0.3128*	1.0000		
MS	0.1185	0.1584*	0.1699*	0.0789**	-0.0299	0.0549	0.0044	-0.2318*	-0.1231*	0.1954*	1.0000	
GDP	-0.0499	-0.0151	-0.0173	-0.0725	-0.0157	0.0341	-0.0358	0.2219*	-0.5299*	-0.1755*	-0.1455*	1.000

Table 2: The Pairwise correlation matrix for dependent (CAR) and explanatory variables. (*) and (**) significant at 1% and 5% respectively)

Explanatory Variables	Fixed Effect Regression Model
Constant	10.05865
TA	0.0001232
TDep	-0.0000241
TLoan	-2.91000
ROA	-0.00593
ROE	0.03825
DAR	0.01432
INF	-0.25281
REx	-0.00899
UNEM	-0.75243
MS	-0.06837
GDP	-0.11667
N x T = 64 x 10	640 (strongly balanced)
R^2	0.1320

Table 3: Panel Regression Result

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