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The Effect of Funding Liquidity on Financial Stability in Emerging Markets: Empirical Analysis Using System GMM Estimation

Ahmed Mohamed Dahir*, Fauziah Mahat

Faculty of Economics and Management, Universiti Putra Malaysia, Malaysia

Abstract

The purpose of this study is to examine the impact of funding liquidity and bank size on the financial stability for the period between 2006 and 2014 in BRIC countries. The study employs a system generalized method of moment (GMM) estimator and a sample of 53 publicly listed banks in BRIC. The results reveal that the funding liquidity and bank size are statistically significant and negative, which means higher funding liquidity, the fragility of the financial system increases more than 6 standard deviations. In addition, if the bank size increases by1, the risk of financial instability increases about 10%. The findings support the theory which argues large banks contribute to instability of banking system because complex banks have tendency to invest risky activities using short-term deposits. The interaction of bank size and funding liquidity is significant and positive suggesting that marginal effect of bank size on financial stability increases as the funding liquidity increases; however, bank's activities are insignificant. This paper lends bank managers and regulatory agencies more insights about the sources of risk that may threaten the financial stability.

Keywords: Funding liquidity, bank size, system GMM, BRIC

1. INTRODUCTION

Funding liquidity plays a very important role in well functioning financial institutions. Specifically, the main functions of banks are to transform deposits of the short-term into loans (long-term assets). The banks collect deposits from individual depositors and then invest in various sectors, this pool money improves economic expansion which consequently promotes the economic condition of the country (Umar, Sun, Ashton, & Ashton, 2016). The deposits actually serve as the core of liquidity funding which enables banks repayment of their liabilities due to maturity date (Drehmann & Nikolaou, 2013).Nevertheless, the likelihood of rollover risks occurring increases. Normally, the rollover risk arises from the assets require to be refinanced (Acharya, Shin, & Yorulmazer, 2011). This prompts holding an adequate liquidity funding in order to settle depositors' demands. Liquidity problems were recognized as central issue in the recent financial crisis which led to failure of banks due to shortages of liquidity. The crisis spread widely through money markets which usually offer liquidity to the banks and many of them collapsed, though central banks have intervened in order to tackles the threats(King, 2013). In fact, unavailability of insufficient funds threats the stability of an entire financial system (Khan, Scheule, & Wu, 2016). The liquidity troubles could spread through various channels and hamper more banks to operate longer (Drehmann & Nikolaou, 2013).

*Corresponding author. Tel.: +6-1491609860
E-mail: ahmedtall20@gmail.com

There are several reasons why financial crisis can occur and these include the bank size and liquidity problems were recognized as major root causes of the crisis. Firstly, Laeven, Ratnovski, and Tong (2016) advocated banks, specifically large in size were a seed of recent financial crisis and systemic risk depends on the bank size. Secondly liquidity problems triggered the crisis because when the depositors feel that the banks are in trouble, the depositors lose faith in banks and withdraw their deposits in banks fearing the loss of their funds. Adding extra margins are another matter for spreading the issue widely. The margin is a discount paid to depositors for attracting maximum deposits and extending to long-term deposits rather than the short time deposits. However, there is challenging trade-off between short time deposits and long-term deposits. Finally, higher costs associated with frequent rollovers (Acharya et al., 2011; He & Xiong, 2012).These costs would most likely increase default rates for the interest rates raise in the time of crisis(He & Xiong, 2012). These factors mentioned above have an adverse impact on functionality of banking system efficiently. In particularly, rolling-over problems drive banks to sell their assets, and worsen a condition of funding liquidity. As the result, liquidity of banks adjusts to change into the deposits by squeezing the bank lending which is felt in credit markets (Acharya & Viswanathan, 2011). In other words, banks cannot easily raise the necessary liquidity to fund their activities and leads declination of their financial performances quickly.

This evidence raises a number of questions that substantiate for devising useful policy in respect of stability of banks. Is the funding liquidity a source of risk of the stability of banking system? Is the bank size a source of risk of the banking stability? What are the interaction effects between funding liquidity and bank size? There is a growing interest in the literature of funding liquidity (Drehmann & Nikolaou, 2013; Khan et al., 2016; Lei & Song, 2013; Umar et al., 2016; Vazquez & Federico, 2015) and bank size as a determinant of recent financial crisis (Laeven et al., 2016). However, little is known of the relationship between funding liquidity and bank stability and the interaction between funding liquidity and bank size and their impact on the bank stability in emerging countries, like BRIC countries. BRIC countries include Brazil, Russia, India, and China.

To answer the questions mentioned above, we first investigate the relationship between funding liquidity and bank size and their combination effects on the stability of banking system in BRIC countries. Our study is closely related to the study of Khan et al. (2016). Their study is conducted in a developed country, USA. The paper offers a number of contributions to the existing literature regarding potential effects of funding liquidity and the stability of banking system (Drehmann & Nikolaou, 2013; Khan et al., 2016; Lei & Song, 2013; Umar et al., 2016; Vazquez & Federico, 2015), and bank size and the stability of banking system (Laeven et al., 2016). The contribution of the paper is threefold. First, we first analyze the determinants of instability of banking system in sample of countries, where the current literature concentrates on United States and across countries. Second, our contribution covers a new geographical area. To the best of our knowledge, it is the first study to identify the determinants of instability of banking system by applying *generalized method of moment (GMM) estimator*. Finally, our analysis mostly links to the microprudential regulation debate. The regulations emphasize the importance of funding liquidity and impose banks to have adequate liquidity that prevents liquidity shocks. The evidence shows whenever liquidity funding risk decreases; banks take more risk that may lead financial distress. Factors like bank size and capital normally prevent the banks from taking more risk (Bonner, Van Lelyveld, & Zymek, 2015; Khan et al., 2016).

Other papers study liquidity funding through other measures other than bank stability with the proxy of logarithm of Z-score. Funding liquidity risk emerges when bank customers demand an unexpectedly large amount of cash coupled with the asymmetric information (Umar et al., 2016). This evidences liquidity crunches on the recent financial global turmoil, suggesting questions revisions to bank risk management practices, supervisory and regulatory frameworks which address bank liquidity funding (Vazquez & Federico, 2015).

The remainder of the paper is outlined as follows. Section 2 describes literature. Methodology and data are explained in Section 3. Section 4 reports the results and discussion, and Section 5 contains the conclusion and implications.

2. LITERATURE REVIEW

In this section, we are going to explain relationship between bank sizes, funding liquidity, financial stability. Funding liquidity expresses a situation in which banks can attract deposits less costly. Regulatory agencies reform risk management for liquidity banks, concentrating the liquidity of banks after liquidity crunches, which triggered the recent Global Financial Crisis (GFC). Banks normally carry financial intermediations in which they accept deposits and hold portfolios of loans. These activities are inherent in financial risks which include liquidity risk, credit risk, market risk, and operational risk (Broll, Guo, Welzel, & Wong, 2015). There is a growing interest in the literature related to funding liquidity and its impacts on bank risk taking (Drehmann & Nikolaou, 2013; Khan

et al., 2016; Lei & Song, 2013; Umar et al., 2016; Vazquez & Federico, 2015) and funding liquidity and bank capital (Berger & Bouwman, 2009; Choi, Park, Ho, & Johnson, 2016; Horváth, Seidler, & Weill, 2014; Lei & Song, 2013; Vazquez & Federico, 2015).

Our analysis is put forward the theories which explain the variables of stability of financial system. Theory of financial intermediation emphasizes the strong connection between liquidity creation and financial stability suggesting the safety of banking system depends upon more liquidity. Banks create liquidity by transforming illiquid assets, such as loans to liquid liabilities like deposits because the depositors cannot withdraw unless the stipulated conditions are satisfied (Diamond & Dybvig, 1983). The theoretical argument regarding liquidity creation on and off the balance sheet was developed by Diamond and Dybvig (1983), who observed that the asset side of banks' balance sheet is not active. This theory considers that liquidity creation can only be created from the liability side of the bank's balance sheet. Liquidity creation enables depositors to share risks with banks because they prevent savers from facing uncertainty about their preference for the timing of consumption, which means that banks give them the opportunity to make simple investments with the predetermined yield. The banks ensure that the depositors have the rights to make withdrawals at any moment they need.

Banks generally purchase liquid assets for short-term borrowings as a securitization and finance the difference between loans and core deposits by banks' equity (Bonner et al., 2015), failing to pay the obligations immediately threatens to the financial stability bank operations. The probability on which banks are not able to acquire funds in a cost effectiveness and efficiency can get bigger. Subsequently, funding liquidity risk which may emerge from banks' activities can trigger the financial instability. Large banks have tendency to invest more risky activities by using short-term deposits. Finally the engagement of risky activities may trigger the banks more susceptible to liquidity shortages and fire sales (Gennaioli, Shleifer, & Vishny, 2013; Kashyap, Rajan, & Stein, 2002; Laeven et al., 2016; Shleifer & Vishny, 2010). Brunnermeier and Pedersen (2009) defined funding liquidity as the ease with which an institution can obtain funding. Funding liquidity is also referred to as the ability to raise cash on short notice (Strahan, 2010). Drehmann and Nikolaou (2013) examined the association between funding liquidity risk and market liquidity, using a measure of insurance premium by using regression as a method of data analysis and short-term main refinancing data from the period between June 2005 and October 2008 in a European area. Their findings showed that the funding liquidity risk is normally low and stable, with temporal spikes during events in the recent financial crisis and evidencing a declining sign in spirals between market liquidity and funding liquidity risk.

Debate continues about the liquidity funding and how it affects the stability of the financial system. Vazquez and Federico (2015) evaluated the structures of bank funding and its effects on financial stability , and their results show that banks with lower funding liquidity failed the onset of the crisis; moreover, those with higher ratios of equity to asset were more likely to fail after the financial turmoil. The findings also proved that bank risk-taking was responsible for likely bank failure, because the large cross-border banks did not experience liquidity risk while the domestic banks which were weaker than global banks for the domestic banks had a high ratio of leverage. While, Khan et al. (2016) investigated the correlation between funding liquidity and bank risk taking and their finding indicates if funding liquidity increases and banks take more risk. Whenever funding of liquidity risk is lower, banks take more risk. Empirically, banks with lower funding liquidity risk took on less risk during the Global Financial Crisis, and bank size and capital buffers generally prevented them from taking on more risk. Additionally, complex banks have adverse effects on financial stability because complex banks can easily get sufficient liquidity (Schwerter, 2011). The regulatory agencies are unwilling to end large and complex banks (Laeven et al., 2016). To that effect, banks have more incentives to take more risks because they can easily access to the "lender of last resort" and advantage of the safety net (Distinguin, Roulet, & Tarazi, 2013). In other words, these activities of excessive risk-taking would result in moral hazard in the expectation of government bailouts (Laeven et al., 2016).

3. DATA AND METHODOLOGY

In recent years, this study explores the relationship effect of liquidity funding, bank size and financial stability. Many factors that influence financial stability have been found. However, this paper focuses on the liquidity funding, bank size, and financial stability. To control the effect of liquidity funding, bank size and financial stability, we employ bank activities (loan to total assets (LTA), the return on assets (ROA), and macroeconomic variables of GDP and inflation. In fact, the inclusion of these independent variables ensures that there is no multicollinearity problem and considers the formation of a single model.

3.1 Data Description

This study constructs an unbalanced panel data of almost 120 publicly listed banks from the countries: Brazil, Russia, India, and China (BRIC) over the period of 2006-2014. The annual data of funding liquidity (deposits/ total assets), bank size, loan to the total assets (LTA), return on assets, banks' stock returns were banks were collected from the Thomason Reuters SDC Platinum. Macroeconomic control variables were collected from world development indicator. We dropped from the list of the banks whose data observations are missing and represent a history of less than 3 years. After cleaning the data, a total of 53 banks from BRIC were left in the unbalanced data with 471 observations.

Bank stability as the dependent variable has a measure of Z-scores which is common in the literature of bank stability, and if the value of Z-scores increases, bank stability also goes up. Z-scores are the ratio of the sum of the return on assets and the capital to asset to the standard deviation of asset returns. In other words, it is equal to the number of standard deviations in bank profits falling below the mean value in bank profits. In order to adjust, it depletes the bank's equity and income (Lepetit & Strobel, 2013). Therefore, this study employs logarithm of Z-score.

$$Z - scores_{it} = (ROA_{it} - CAR_{it})/\sigma ROA_{it} \quad (1)$$

$ROA_{i,t}$ is the expected return on assets in bank *i* and year *t*, $CAR_{i,t}$ is the ratio of bank's equity to total assets and $\sigma ROA_{i,t}$ is the bank's variability of return on assets in bank *i* year *t*.

3.2 Model Specification

Econometric dynamic panel analysis is employed for the measurement of bank size, funding liquidity and their interaction effects on stability of financial system. For the nature of data, we have lends to use a dynamic generalized method of moment (GMM) estimation to test the bank size, funding liquidity and their interaction effects on stability of financial system. The empirical model consists of control variables that capture the bank characteristics which may have impact on the stability of financial system. The model is as follows.

$$Stab._{it} = \beta_0 + \beta_0 Stab._{it-1} + \beta_1 FL_{it} + \beta_2 lSZ_{it} + \beta_3 (FL \times lSZ)_{it} + \emptyset_1 Z_{it} + \varepsilon_{it} \quad (2)$$

where $Stab_{it}$ stands for financial stability, lagged $Stab_{it-1}$ stands for financial stability, FL_{it} stands for funding liquidity, lSZ for logarithm of bank size and Z for control variables for bank and country specific effects.

3.3 GMM Model Estimation

Employing static panel analysis tends to release result which bias and inconsistent estimates because of dependent variable of this study, the lagged dependent variable or regressors may create endogeneity problem in the presence of lagged financial stability as dependent variable (Harris & Mátyás, 2004; Nickell, 1981), unobserved heterogeneity and correlation between independent variables. This problem is likely common when the time periods are few years and observations are large. The econometric model can be rearranged as follows:

$$Y_{it} = \alpha Y_{it-1} + \beta X_{it} + u_{it} \quad (3)$$

Where $u_{it} = \delta_i + \varepsilon_{it}$ with $\delta_i \approx iid(0, \sigma_\delta^2)$ and $\varepsilon_{it} \approx iid(0, \sigma_\varepsilon^2)$ are independent of each other and among themselves. δ_i presents the bank-specific effect that stands for the heterogeneity of individual banks and δ_i stands for the disturbance.

In order to overcome the problems mentioned, we apply Generalized Method of Moments (GMM) estimation which is an appropriate analysis that yields unbiased and consistent estimate parameters. Difference GMM model developed by Arellano and Bond (1991) difference GMM model the lagged equation from unlagged equation, that removes estimated parameters of Y_{it} as N→∞ with fixed T inconsistency and biasedness. The difference equation is as follows:

$$Y_{it} - Y_{it-1} = \alpha_1 (Y_{it-1} - Y_{it-2}) + \beta_1 (X_{it-1} - X_{it-2}) + (\varepsilon_{it} - \varepsilon_{it-1}) \quad (4)$$

The differencing removes the bank-specific effect; in addition, it introduces a new endogeneity bias by formation of new error term$(\varepsilon_{it} - \varepsilon_{it-1})$. Therefore, the error term formed does not show a serial correlation. The independent and predetermined variables must also be weakly exogenous, which means that these variables are not correlated with future realizations of the disturbance. However, the difference GMM solves unobserved heterogeneity by considering the existence of fixed effects, and the problem of endogeneity still remains and that further demands the system GMM application.

Arellano and Bover (1995) and Blundell and Bond (1998) developed system GMM involving lagged levels as well as lagged differences. The system GMM estimation assumes that there is no correlation between instrumental variables of first differences and the fixed effects, and lets additional instruments which significant improves the efficiency. Arellano and Bond (1991) proposed two-step GMM estimation in the following moment conditions.

$E[Y_{it-s}(\varepsilon_{it} - \varepsilon_{it-1})] = 0$ where S > 2 t= 3 N (5)
$E[X_{it-s}(\varepsilon_{it} - \varepsilon_{it-1})] = 0$ where S > 2 t= 3 N (6)

4. EMPIRICAL RESULTS AND DISCUSSION

The study begins with showing some preliminary associations among our variables of interest through univariate analysis in Section 4.1.Correlation matrix is reported in Section 4.2. The panel regression analysis is shown in Section 4.3 and Section 4.4 presents robustness checks.

4.1 Univariate Analysis

Table 1. Descriptive statistics

Variables	Obs.	Mean	Std. Dev.	Min	Max
LZSC	471	2.86	0.52	1.36	4.27
FL	471	0.71	0.20	0.11	0.93
LSZ	471	20.19	1.93	13.81	23.95
LSZ*FL	471	14.42	4.36	1.90	20.47
LTA	471	0.60	0.10	0.26	0.86
ROA	471	0.01	0.01	-0.04	0.06
GDP	471	6.79	3.28	-7.82	14.23
INF	471	6.62	2.97	-0.70	11.99

Financial stability (LZSC) is the dependent variable with proxy of logarithm of Z-score. FL is funding liquidity, LSZ stands for bank size measured by logarithm of bank total assets, LSZ*FL is the interaction effects of funding liquidity and bank size, LTA for bank activities with the proxy of loans divided by total assets, ROA for return on total assets, GDP for GDP annual growth rate, and INF if inflation rate. All variables are given US dollar as their unit of account (millions).

Table 1 reports the descriptive statistics for the sample of publicly listed banks in BRIC countries over the time period 2006 to 2014. The table reports the averages of our main explanatory and predicted variables across the banks. The result reveals financial stability (LZSC) ranges from minimum of $1.36 million to maximum of US$4.27 million, average value of funding liquidity is .71, suggesting a low standard deviation of 20% with range between maximum values of US$0.11 million and US$0.93, thus showing the slight difference of funding liquidity of banks included in the sample. The mean values of bank size (LSZ) have a mean score values of US$20.19 million, standard deviation of 1.93, and range between US$13.81 million and US$23.95 million.

Table 2. Correlation matrix

	LZSC	FL	LSZ	LSZFL	LTA	ROA	GDP	INF	GFC
LZSC	1.00								
FL	-0.77*	1.00							
LSZ	-0.16*	0.22*	1.00						
LSZFL	-0.74*	0.95*	0.49*	1.00					
LTA	-0.11*	0.31*	0.13*	0.33*	1.00				
ROA	0.35*	-0.23*	-0.10*	-0.24*	-0.15*	1.00			
GDP	-0.50*	0.46*	0.27*	0.49*	0.00*	-0.21*	1.00		
INF	0.05*	0.27*	-0.03*	0.22*	0.11*	-0.08	-0.03	1.00	
GFC	-0.04	0.01*	-0.05	-0.01*	-0.04*	0.02	-0.16	0.06	1.00

Table 2 presents the correlation between funding liquidity, bank size and financial stability which are our main explanatory variables, suggesting strong and negative association; however, it does not show a sign of existence of perfect correlation, which means there is a problem of multicolinearity. The funding liquidity correlates with financial stability about 70%, suggesting they capture different aspects of financial stability. Furthermore, the correlation between bank size and financial stability is low but it is statistically significant, it suggests that bank size has slight impact on the stability of financial stability. The other factors, except inflation have impact on stability of banking system.

4.2 Baseline Model Results and Discussion

In this section, we examine financial stability as a dependent variable with the proxy of natural logarithm of Z-score by employing two-step system generalized method of moments (GMM) of dynamic panel data analysis. To check whether the model is well specified or not we used the Sargan test for the over-identification restrictions to identify whether the instruments have correlation with the error term or not. The Sargan test fails to reject the null hypothesis which states that over identifying restrictions are valid and satisfied the orthogonality condition. Similarly, the model satisfied that there is no serial correlation, as the null hypothesis is rejected in the first-order serial correlation and failed to reject in the second-order, which means there is no serial correlation in the second-order serial correlation. However, though we used two-step GMM because it is efficient, the two-step system GMM is appropriate rather than two-step difference GMM. Moreover, we used the Wald test for joint significance whether the variables in the study are well specified or not. Therefore, the diagnostic tests and the lagged dependent variable which confirms statistically significance validates that the dynamic GMM is an appropriate estimator and statistical inference based on the model are reliable.

Table 3. Difference and system GMM

Variables	Difference GMM	System GMM
L.LZSC	0.00132	0.255***
	(0.01)	(3.63)
FL	-5.894***	-6.279***
	(-4.77)	(-6.19)
LSZ	-0.0585	-0.107*
	(-1.00)	(-2.42)
LSZFL	0.238***	0.262***
	(3.54)	(4.69)
LTA	0.319*	0.269
	(1.98)	(1.79)
ROA	6.268***	3.994***
	(5.38)	(3.60)
GDP	-0.00149	-0.00242
	(-0.59)	(-0.94)
INF	0.00442	0.00334
	(1.41)	(1.06)
GFC	-0.0151	-0.0241
	(-0.92)	(-1.48)
Constant	4.514***	4.733***
	(4.01)	(5.96)
Sargan Test:		
chi2(12)	14.11245	chi2(19)=19.21
p-value	0.2936	0.4436
Autocorrelation of order:		
AR(1), p-value	0.1056	0.0000
AR(2), p-value	0.0750	0.1813
Wald Test:		
chi2(9)	329.20	756.11
p-value	0.0000	0.0000
N	365	418

t statistics in parentheses * p < 0.05, ** p < 0.01, *** p < 0.001, Financial stability (LZSC) is the dependent variable with proxy of logarithm of Z-score. FL is funding liquidity, LSZ stands for bank size measured by logarithm of bank total assets, LSZ*FL is the interaction effects of funding liquidity and bank size, LTA for bank activities with the proxy of loans divided by total assets, ROA for return on total assets, GDP for GDP annual growth rate, and INF if inflation rate. All variables are given US dollar as their unit of account (millions).

Table 3 represents the results of funding liquidity, bank size and financial stability using two-step GMM estimation two-step difference GMM estimation in column (1) and two-step system GMM estimation in column (2). We find that funding liquidity is significantly negative for financial stability, which means higher funding liquidity, fragility of financial system increases more than 6 standard deviations. However, with the interaction of funding liquidity with global financial crisis, GDP is insignificant. The result is in concordance with the theory which argues when banks receive more deposits, they take more risk (Acharya & Naqvi, 2012). Moreover, the results provide substantial implications that are also in line with empirical studies. If the funding liquidity increases, it offers managers incentives to take more risks (Khan et al., 2016). In fact, excessive risk taking behavior is one of the sources of financial instability.

The result also finds that bank size is significantly negative 1 % significant level, but it has less impact on financial stability of banking system as the comparison of funding liquidity. If bank size increases 1 unit dollar, the risk of financial instability increases almost 10%. The bank size has substantial implications: if the parameter estimate becomes negative, it is in line with the hypothesis of "too big to fail". Therefore, this study proves evidence that the size of the bank's assets is in accordance with the theory of "too big to fail,"(Farhi & Tirole, 2012) and also

the empirical studies (Ashraf, Rizwan, & L'Huillier, 2016; Laeven et al., 2016; Schwerter, 2011). Bigger banks have expectation to be bailed out in the economic stress situations and easy accessibility of the "lender of last resort" (Distinguin et al., 2013). We also find the interaction of bank size and funding liquidity is significantly positive for financial stability of banks. It suggests that marginal effect of bank size on financial stability increases as the funding liquidity increases. This interaction effect result also is in accordance with the theoretical hypothesis of that bank have expectation to be bailed out in the time of economic stress (Laeven et al., 2016).

The financial stability of the bank is a function of its profitability, and banks that earn strong returns have the benefit of constant stable incomes (Hong, Huang, & Wu, 2014; King, 2013). The bank's profit has a measure of the ratio of net income to total assets (ROA), and this study expects a positive sign. This concept corresponds with the previous study (Ashraf et al., 2016). The bank profit (ROA) of each model is statistically significant at 1 % of significant level and is in accordance with the expected signs, financial stability is positive significant at the 10 % significant level which indicate higher profit, would impact financial stability of banks. Therefore, this result is in concordance with Ashraf et al. (2016), who argued that, with higher profit margins, banks engage more risk. The difference in the results can be attributed to sample size and economic environment. Moreover, bank's activities (LTA) are insignificant, which means that financial stability does not relate with the engagements of banks, and it is accordance the previous study (Laeven et al., 2016). We also control for variables pertaining to country specific factors: dummy of 1 is used financial shock that banks experienced at 2008 and 0 otherwise. The results show that global financial crisis have no significant on financial stability.

5. CONCLUSION

The aim of this study is to examine if funding liquidity and bank size are the sources of risk for the financial stability of banking system. The study also determines the interaction effect of funding liquidity and bank size are the sources of risk for the financial stability of banking system controlling bank activities, profits, financial crisis and other macroeconomic control variable, like GDP growth rate and inflation. The results reveal that both liquidity funding and bank size are significantly negative 1 % significant level on financial stability, but it has less impact on financial stability of banking system, while the interaction of bank size and funding liquidity is significantly positive for financial stability of banks. It suggests that marginal effect of bank size on financial stability increases as the funding liquidity increases. The bank profit (ROA) of each model is statistically significant at 1 % of significant level and is in accordance with the expected signs. The activities of banks are insignificant, which means that financial stability does not relate with the engagements of banks and control variables with dummy of 1 is used financial crisis in which banks experienced at 2008 and 0 otherwise. The results show that global financial crisis have no significant on financial stability.

This paper emphasizes the importance of regulatory view to revisit the size of banks as our result shows BRIC banks have similar characteristics in the case of excessive risk taking which has negative effect on the financial stability with their developed countries. . However, caution must be given when interpretation of bank size because banks play a substantial role in economic efficient due to their economy of scale. Funding liquidity has adverse implications on the financial stability; therefore it is demanded to reduce redundant funds.

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