DO RISK, BUSINESS CYCLE, AND COMPETITION AFFECT CAPITAL BUFFER? AN EMPIRICAL STUDY ON ISLAMIC BANKING IN ASEAN AND MENA

Novita Kusuma Maharani [1]
Bowo Setiyono [2]

Abstract

Basel III guidelines were released in 2010 by the Basel Committee on Banking Supervision (BCBS) as a revision of the previous Basel guidelines with the aim of strengthening the bank's capital and liquidity of banks. BCBS formulate a new policy that is the capital buffer. Capital Buffer is the difference between the minimum capital required by regulators with its overall capital and is considered a "cushion" against the shocks of the financial crisis. This study examine the impact of risk, business cycle, and competition on banks' capital buffer. This paper used the sample of Islamic banks and conventional banks in ASEAN and MENA in the period 2011-2015 with unbalanced panel data. Using System GMM method to test the characteristics of Islamic banks in managing its capital. The finding indicates that the degree of capital buffer in islamic banks tend to adjust its risk. The result also shows that capital buffer decrease during economic expansion where banks act aggressively by extending their lending activities. The relationship between capital buffer and competition is positive in that the high level of competition to motivate banks to have higher capital.

Keywords: Capital Buffer, Islamic Risk, Business Cycle, Bank Competition

JEL Classification: G21, E58, G32

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1 Faculty of Economics and Business, Universitas Gadjah Mada, Jl. Sosio Humaniora No.1 Bulaksumur, Yogyakarta, 55281 Indonesia; Tel: +60274-580726, Email: novita.kusuma.m@mail.ugm.ac.id.
2 Faculty of Economics and Business, Universitas Gadjah Mada, Jl. Sosio Humaniora No.1 Bulaksumur, Yogyakarta, 55281 Indonesia

I.   INTRODUCTION

Basel Accord stipulate that banks have to hold minimum 8% from its capital, called Capital Adequacy Ratio (CAR). However, in reality, most of the banks tend to violate the regulation to respond the competitive pressure in the market by extending their lending activities on the riskier asset (Prasetyantoko and Soedarmono, 2010). Then, in 2004, Basel committee release the new regulation, Basel II, as a revise of the old rule where banks must maintain their capital above minimum capital requirement (Atici and Gursoy, 2013). The financial crisis in 2008 that facing global economy forced Basel committee to create the new guideline, Basel III which purpose was strengthening bank capital and their liquidity. In Basel III, there are two components of capital buffer were formulated: (1) Capital Conversation Buffer, where such capital is designed to ensure that banks increase capital buffers outside periods of recession (crisis), and (2) Countercyclical Capital Buffer,to ensure that the requirements bank capital into account the macro environment in which banks operate where CCB focused on reducing the excessive lending (BCBS, 2010).

The capital buffer is defined as the amount of bank capital which was held in addition to the minimum capital requirements (Jokipii and Milne, 2011) and considered as a "cushion" on the financial crisis. Banks hold capital buffer to absorb the financial loss which was caused by unexpected return on asset (Carvallo et al., 2015; Shim, 2013). Based on capital buffer concept, predicted that banks with the lower capital buffer would try to increase their capital by its target level, whereas the banks with the higher capital buffer will maintain the capital on their target (Jokipii and Milne, 2011).

Most of the studies have confirmed a positive relationship between capital and risk which was predicted by the theories. These studies indicated that bank has build-up their capital over time, have increased their risk. On the other hand, a negative relation arises if banks seek to exploit the deposit insurance subsidy (Jokipii and Milne, 2011).

Islamic banks use various types of contracts. There are three types of deposit on the liability side: (1) Non-Investment Deposit (SA), (2) Unrestricted Profit Sharing Investment Account (PSIAU), (3) Restricted Profit Sharing Investment Account (PSIAR).[3] These contract have a different risks so that maintaining the capital adequacy becomes more important. Islamic

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[3] SA, Islamic banks ensure the amount of deposits and share any monetary, while the banks will share any profit or loss in PSIAU, and islamic banks will provide only administrative services to the PSIAR since depositors are themselves in investment decision making actively (Mulajawan et al., 2004).

banks must have the ability to pay return for depositors who avoid the rsk (risk-averse) and provides the possibility of high return to depositors who are risk-taking (Muljawan, Dar, and Hall, 2004).

Islamic banks have some unique risk which can raise potential loss that comes from their operational activities (IFSB, 2005) : (1) Rate of return risk (ROR), and (2) Displaced commercial risk (DCR). (Daher et al., 2015) identified the susceptibilities of Islamic bank capital buffer to unique risk with examining the effect of ROR risk, DCR, and equity investment risk on Islamic capital buffer. The finding shows that Islamic banks are seen to ensure shareholder interest by reducing the impact of ROR risk and DCR arising from balance sheet mismatches with showed the higher capital buffer.

The excessed of lending growth leads to banks behave procyclicality and caused systemic risk (Pramono et al., 2015). Banks tend to act aggresively on their lending activity and expand the loans on riskier assets during economic expansion (upturn). The business cycle has a particularly important role, in determining the amount of capital which will hold and the level of bank risk. Shim (2013) revealed a negative correlation between the business cycle and capital buffer implying that banks are increasing the buffer by minimizing the value of RWAs (Risk Weighted Assets) during the economic downturn. Carvallo et al., (2015) revealed that there are negative fluctuations between the capital buffer and the business cycle, which means levels of capital buffers high when the economy experienced a decline(downturn).Thus, the level of capital buffers higher would be associated with more stringent capital regulation and adjustment costs higher.

The improvement of banks capital consistently is also motivated by competition in which bank will hold the greater capital as a commitment monitoring and attracting the borrower's attention (Schaeck and Cihak, 2012). Another argued that the ownership of excessive capital was caused by the market discipline arising from the asset side of the bank. Mamatzakis et al. (2005) measuring the degree of concentration and competition in South Eastern Europe and find that the increasing 1% on competition can boost a capital ratio up to 3.7% for each bank on average and 3.9% in the overall bank sample.

Based on the explanation which has been described above, this paper will examine: First, testing the effect of Shariah risk on the capital buffer whether the high risk of the bank will increase the buffer or inversely. Second, examining the impact of the business cycle on the capital buffer.

Third, to test the effect of bank competition where it becomes considered for banks to manage their lending activities. This paper is organized as follows: It begins with a review of related literature on the effects of risk, business cycle, and competition on the capital buffer as well as a research objective. Further, the rest of this paper will discuss the methodological approach used, empirical result, and conclusion.

II. LITERATURE REVIEW

2.1 Bank Capital Buffer

There are three elements underlie the ability of the financial system to be able to maintain the stability and efficiency under the pressure of the market and economic turbulence (Muljawan et al., 2004). First, the financial system must be able to accommodate any changes in the market system (flexibility). Second, the financial system must have the capability to cope with the economic turbulence due to external shocks including macro economic instability. Third, the financial system must have internal stability. Regulatory capital is designed to encourage the capability of banks to absorb losses due to the financial turmoil. Another academic interpreted the phenomenon of two perspectives (Huang and Xiong, 2015): (1) From the standpoint of the settlement of the problem of asymmetric information between banks and depositors, in which the bank operates with high debt usage and depositors as a provider of funds for banks. The depositor will have more confidence in the banks that have capital and moral hazard a higher and provide a positive signal for the market, (2) Academics see the phenomenon from the perspective of prevention incentives which banks hold capital above the minimum and prevent any potential losses. Thus, it will maintain the smooth banking system to avoid systemic risk.

Based on capital buffer concept, predicted that banks with the lower capital buffer would try to increase their capital by its target level, whereas the banks with the higher capital buffer will maintain the capital on their target (Jokipii and Milne, 2011). The implication of Moral hazard theory states that Banks maintain capital in excess of the regulatory minimum in order to cushion potential negative shocks (Daher et. al., 2015).

Fonseca et al. (2010) show the relationship among capital buffer, cost of deposits, market power, and the regulation of banks in 70 countries of the period 1992-2002 and found that the capital buffer is positively related to the cost of deposits and market power. The existence of a positive relationship of both is consistent with evidence that banks with higher value

charters have a lower incentive on risk taking and lack of control of supervisors. While the positive correlation deposit fees and capital buffers reflect the activity of market discipline in each country. Thus, the banking regulatory, supervisory, and institutions can change the effect of the deposit costs and market forces against the capital buffer of each country. Atici et al. (2010) analyze the factors of capital buffers in banks in Turkey with estimates of the cyclicality on bank capital buffer using panel data from 1988 to 2009 period. The study focuses on economic growth, the size of the assets, ROE, and NPL as factors used. The results stated that commercial banks move countercyclically when put banks under the supervision of SDIF (Savings Deposit and Insurance Fund). However, when the SDIF banks were excluded from the sample, it moves procyclically.

2.2 Capital Buffer and Risk

Jokipii and Milne (2011) examined the relationship between short term adjustment of capital buffer and risk. The finding show positive significant result where the banks with well capitalized adjust their capital and risk positively. Lindquist (2004) revealed the negative relationship between capital buffer and risk on saving banks in Norway. Banks use capital buffer as an insurance against costs related to market discipline and supervisory intervention if the banks approach below the regulatory minimum. Moral Hazard theory predicts that banks today no longer hold the required minimum capital because they have a target level in the capitalization. If they exceed the standard of capital required by regulators, it is no longer the relationship between capital and risk taking (risk-taking).The possibility of such a relationship results is: 1) The risk can increase the probability of failure (default) and push the bank to strengthen its capital, and 2) the high systemic risk can reduce the charter value and decrease the amount of capital held. However, if the required regulatory capital exceeded the target level of the bank, the higher capital levels will reduce the risk that the behavioral effects of the charter value become less important (Jokipii and Milne, 2011). Shim (2013) prove to

ROR risk and consequently DCR occur as balance sheet risks are shifted from UPSIA holders to shareholders. This occurs as Islamic banks are forced to subsidize returns to UPSIA holders to avoid deposit withdrawals in a rising price environment (Daher et al., 2015). The competitive pressure in the market place force implicit contractual condition between Islamic banks and their depositor to provide distribution similar to market based on deposit interest rate (Farook et al., 2012). Kasri (2007) analyzed the

presence of DCR and dynamic interactions among variables which affect the growth of Islamic banks in Indonesia and found that the behavior of depositor is based on profit motive which indicated the existence of a positive response to changing their rate of return in Islamic banks.

2.3 Capital Buffer and Business Cycle

The negative co-movement between GDP growth and capital buffer indicated procyclical pattern on bank capital (Huang and Xiong, 2015). Tabak, Noronha, and Cajueiro (2011) revealed capital buffer would increase during the economic downturn and tend to decrease when the economic upturn. Another argument shows the empirical evidence of the cyclical behavior of capital buffer that leads to negative relation implicated the possibility of bank reduces the value of RWAs in recession. Huang and Xiong (2015) have also analyzed the behavior of banks in deciding the level of capital buffer during business cycle movement and transmission and show that the bank capital buffer in China behaves countercyclical. This result is supported by the behavior of each bank during economic growth. Deriantino (2011) suggests the presence of negative movement between GDP growth and capital buffers indicate procyclical pattern on capital buffers. The problems caused by the demand for loans (credits) are procyclical. Carvallo, et al. (2015) revealed that there are negative fluctuations between the capital buffer and the business cycle, which means levels of capital buffers high when the economy experienced a decline(downturn).Thus, the level of capital buffers higher would be associated with more stringent capital regulation and adjustment costs higher.

Jokipii and Milne (2008) investigated the behavior of capital buffer in European banks under the regulation of Basel I and showed that the greater banks tend to behave negatively in the overall sample in which the movement of business cycle negatively and increase in a recession. While small bank positively moved and decreased in recession. The theory of business group is based on the idea that the core or the parent company has a privilege against the source of funding is an important element in the company's activities. Chang and Hong (2000) also said that the emergence of business groups is to deliver the tangible assets as capital and raw materials as well as intangible assets as the reputation and the need for Research & Developments to companies that are members of the business group

2.4 Capital Buffer and Bank Competition

There are two tendencies between competition and concentration opposing each other. These implications if based on the proportion of theoretical revealed that the more concentrated a market implies, the lower level of competition (Lubis, 2012). Bikker, Shaffer, and Spierdijk (2010) stated that there are two methods used to measure the competition: (1) The structural approach, based on the paradigm of structure-conduct-performance (SCP), which predict the more concentrated a market, the more is the collusive due to the high concentration, (2) Non structural approach, based on the literature "New Empirical Industrial Organization (NEIO)" with the premise that the company in a competitive market and the company in imperfect markets will have different reactions to the changes in demand and supply.

Claessens and Laeven (2004) estimate the indicators that affect the level of competition in the various countries and find some foreign banks into the country and the lack of restrictions on bank activities can boost the degree of competition in the banking system. Their system contestability also helps determine effective competition, in particular through the possible entry of foreign banks and ease restrictions on banking activities. Ariss (2010) analyze the competitive conditions by using a sample of Islamic banks and conventional banks in 13 countries with a span the period 2000-2006, and indicates that markets Islamic banks showed a higher concentration and competition is weak when compared with conventional bank market. Another argument stated that ownership of excessive capital was caused by the discipline of the market arising from the asset side of the bank. Therefore, the competition can motivate the banks to hold higher capital because it indicates their commitment to oversee and attract loans (Schaeck and Cihak, 2012).

III.   METHODOLOGY

3.1   Data

This study using yearly unbalanced panel method to identify the characteristic of each sample. Focusing on Islamic and Conventional banks in 13 countries were both bank types coexist, and the initial panel data set comprises a total of 263 banks (79 Islamic Banks and 184 Conventional Banks) with the period 2011-2015. The reason Conventional Banks to enter into the sample is to test the characteristics of Islamic Banks in each country that views of the whole banks directly. This paper took data information

from Orbis Bank Focus database, World Bank Data and derived manually from annual public reports.

3.2 Method or Estimation Technique

The previous literature examining banks' capital buffer makes use dynamic panel models in order to control the adjustment cost that banks may face in moving towards banks' optimal capital ratios (Daher et al., 2015). This paper used GMM methods to avoid the possibility of endogeneity bias. The lagged of dependent variable on the right side might be correlated with the error term. To solve this problem, Arellano and Bond (1991) suggest a Difference GMM estimator where the lagged variables on the right side in equation are the instruments in first difference. However, Arellano and Bover (1995) and Blundell and Bond (1998) reveals that the instruments used in the Difference GMM become less informative in some cases (Carvallo et al., 2015; Daher et al., 2015). Thus, this paper using System GMM estimator which is the development of Difference GMM. System GMM is a technique for estimating the models not only employed in the first difference but also in the level, or in ther words, it is the combination of equation model in the both first difference and the level. System GMM avoid the weak-instrument problem and provide variance and covariance structures which is more flexible.

3.3 Empirical Model

This paper propose the following empirical model based on the relevant banking literature (Daher et al., 2015: Carvallo et al., 2015; Fonseca et al., 2010). Hence, the empirical model is specified as follows:

$$BUF_{it} = \propto_1 + \beta_1 BUF_{it-1} + \beta_2 ASSETSPR_{it} + \beta_2 DEPOSIT_{it} + \beta_1 CYCLE_{it} + \beta_1 LERNER_{it} + \sum_{j=4}^{n} \beta_j BS_{it} + \sum_{j=3}^{n} \beta_j ME_{it} + \varepsilon_{it} \quad (3.1)$$

Where the BUF represent capital buffer with seen the difference between total capital ratio and minimum capital requirement, to capture the extent of ROR risk and DCR, this paper provides two measure namely: (1) ASSETSPR denotes asset spread (Farook et al., 2012) that represent the absolute spread between ROA and the return on depositor funds and (2) DEPOSIT is proxied by total unrestricted PSIAs to total liabilities, CYCLE denotes the business cycle which proxied by GDP real growth, LERNER as a bank competition with Lerner Index measurement, BS are the proxied of bank control (Size, NPL, ROE), ME denotes macroeconomic variables (GDP

real growth, HHI, and regional dummy variable). Subscripts i and t refer correspondingly to bank i at time t, and e is a zero-mean disturbance term. All independent variables are lagged to avoid the possibility of endogeneity of the banking variables.

IV.   RESULT AND ANALYSIS

4.1 Descriptive Statistic

This paper first presents the summary statistic over the sample period (2011-2015) by country. Table 1 shows that the average value capital buffer for the entire sample is 11%. The mean of ASSETSPR is equal to 4%, which means that on average banks distribute their profits to the amount of those profits. While variable DEPOSIT which reflects the average level of deposits kept by each of the banks. The mean value of DEPOSIT in the overall sample is 85% which indicates that the average rate of deposit (deposit) on each bank is quite high. The average level of the business cycle in ASEAN and MENA up to 4.48% where the fluctuation range of the period 2011 to 2015 experienced an increase in the range of below 5%. The degree of competition in the ASEAN and MENA region are quite varied. The mean value of Lerner index up to 0.15 which reflects the level of competition is quite high. The average level of NPLs in the overall sample (ASEAN and MENA) was 7%. The mean value of ROE is 9% for all countries, while the average size of the bank as seen from the total asset value of Rp 17.660 million, with total assets of a peak of USD 19.120 million for the Islamic banks in Qatar, and the total assets of the highest in the number of Rp 19.970 million for conventional bank in Saudi Arabia. The level of market concentration (HHI) is the average value of 0.17 which indicates that the average MENA countries in ASEAN and is not overly concentrated.

4.2 Islamic Banks' Capital Buffer and Shariah Risk

As a reported Earlier, we employed with System GMM method to test the relationship between variables. Table 2 indicates the initial result for ASSETSPR using the full sample of the banks (Spec 1-2), then trying to interact with Islamic Bank dummy (D_ib) (Spec 3). The result suggests that ASSETSPR are negatively significance at the one percent level (Spec 1) and five percent in Spec 2. This result reveals that the higher level of ASSETSPR will decrease the level of bank capital buffer. Furthermore, interacting asset spread with islamic bank dummy (ASSETSPR x D_ib)

indicates the positive and statistically significant at the 5 percent level (Spec 3). This result is in line with research conducted by Daher et al. (2015) in which each Islamic banks tend to adjust capital buffers to mitigate the impact of risk. When islamic banks have a greater amount of profit distribution automatically they will adjust the amount of buffer which must be held. This makes islamic bank used its capital to distribute the return by showing the capital buffer.

The estimated coefficient for DEPOSIT is positive (Spec 5 and 6) using the full sample of the banks. These results prove that the greater the value of DEPOSIT, the higher the level of capital bank buffers. DEPOSIT which reflects the average of total deposit in the bank depositor funds will show the extent of funds that have a bank depositor. However, interacting Deposit with islamic bank dummy (DEPOSIT x D_ib) has a negative significant at the 10 percent level (Spec 6). This study found that when islamic banks have a higher DEPOSIT then the banks have a lower capital. The magnitude of risk, namely the risk of withdrawal (massive withdrawal of funds) by depositors tend to encourage banks to decrease their capital in anticipation of depositors to switch to other banks that provide a level of profit that is more promising.

Table 2.
The Relationship between Capital Buffer and Shariah Risk
Using System GMM Method

	(1)	(2)	(3)	(4)	(5)	(6)
	Bufit	Bufit	Bufit	Bufit	Bufit	Bufit
Bufit-1	0.431***	0.460***	0.400***	0.459***	0.424***	0.464***
	(14.95)	(12.00)	(6.56)	(9.55)	(5.94)	(6.89)
ASSETSPR it	-0.213***	-0.186**	-0.145			-0.108
	(-4.18)	(-2.38)	(-1.33)			(-1.42)
ASSETSPR it x D_ib			0.787**			
			(2.09)			
DEPOSITit				-0.0339	0.0276	0.0493
				(-0.78)	(0.44)	(1.03)
DEPOSITit x D_ib						-0.108*
						(-1.73)

	(1) Bufit	(2) Bufit	(3) Bufit	(4) Bufit	(5) Bufit	(6) Bufit
Sizeit	-0.00476***	-0.00148	-0.00461	-0.00202	-0.00529*	0.00204
	(-2.12)	(-0.47)	(-1.56)	(-0.86)	(-1.73)	(0.78)
NPLit	-0.000586	0.00285	0.00191	-0.00141	-0.000372	0.0159***
	(-0.50)	(1.43)	(0.38)	(-1.00)	(-0.23)	(3.97)
ROEit	-0.0648	-0.00784	-0.0497	0.00904	-0.0238	
	(-1.14)	(-0.10)	(-1.01)	(0.12)	(-0.36)	
Lernerit	0.0601***	0.031	0.0341		0.0348	
	(2.69)	(0.54)	(1.56)		(1.06)	
Cyclet	-0.00302*	-0.00518**	-0.00499*	-0.00413	-0.00136	
	(-1.87)	(-1.99)	(-1.75)	(-1.55)	(-0.55)	
HHIt	-0.00474	0.0371	0.0214	-0.0169	-0.0631	0.0276
	(-0.07)	(0.89)	(0.30)	(-0.49)	(-0.88)	(1.06)
D_Region	-0.0491***	-0.0881***	-0.0473***	-0.0227***	-0.0207*	-0.0674***
	(-4.05)	(-5.33)	(-2.77)	(-3.43)	(-2.22)	(-4.52)
D_ib		0.00585	0.0131		0.0345	0.107*
		(0.44)	(0.63)		(0.80)	(1.84)
D_year	Yes	Yes	Yes	Yes	Yes	Yes
C	0.182***	0.160**	0.190***	0.141**	0.139**	0.0609
	(4.08)	(2.38)	(2.77)	(2.04)	(2.07)	(1.07)
Obs	511	511	511	562	508	585
F	44.66	26.78	14.8	13.73	25.86	12.46
Instrument	34	29	42	28	34	49
AR (1)	-2.48**	-2.81***	-2.78***	-2.93***	-2.41**	-2.76***
AR (2)	0.35	-0.28	0.03	0.51	0.9	0.83
Hansen Test	15.34	12.78	22.1	13.05	19.86	34.8

Superscripts ***,**,* denotes statistical significant at the 0.01, 0.05, and 0.10 level respectively. Tabel 3 reports regression result using system GMM. Dependent variable is proxied by capital buffer with measure the difference between total capital ratio and minimimum capital requirement by regulator. Independent variable is ASSETSPR denotes the absolute spread between ROA and return on depositors' fund and DEPOSIT is proxied by total unrestricted PSIAs on total liabilites. Control variables on bank level include Size is proxied by natural logarithm total aset, NPL as a value of ln_npl which denotes ratio of non-performing loan to total assets, ROE is proxied by net income to equity, dan control variable on country levels are CYCLE using the real GDP growth, dan HHI (Herfindahl-Hirschman Index) as a proxy of market concentration, D_Region denotes 1=MENA/ASEAN.

4.3 Islamic Banks' Capital Buffer, Business Cycle, and Bank Competition

In Table 3 by using the entire sample (Spec 1, 2, 3, and 5) of the banks indicate that the CYCLE variable is significant across most of the specifications. This result suggets that business cycle has a negative effect against capital buffer. These results in line with previous literature that there are procyclicality patterns in the overall sample bank in which when the economy is undergoing expansion (upturn) the bank will stretch the policy by lowering capital buffer, inversely, when the economy is in recession, the bank will tighten credit lending to increase capital buffers. Interacting islamic bank dummy with the business cycle (CYCLE x D_ib) suggest the positive result but not significant (Spec 2 and 3). This result reveals that there is no significant difference between business cycle and capital buffer either islamic bank or conventional bank. This prove that the Islamic bank in ASEAN and MENA behave procyclical where they will reduce their capital when the economy declined.

The effect of bank competition (LERNER) is positive and significant at 5 percent level (Spec 4) and 10 percent level in Spec 5. The positive sign indicates that the higher bank capital, the higher level of bank competition. The estimated coefficient for LERNER x D_ib in Spec 3 and 6, however is positive but not significant. This result suggests that islamic bank and conventional bank react similarly to bank competition levels. Thus, the presence of high competition will encourage banks to increase the amount of capital, in other words, the higher the level of competition, the greater for banks to hold a capital buffer. Refers to research conducted by Schaeck et al. (2012) who found that the high level of competition will encourage each bank to increase its capital ratios. Competition bank proxied by Lerner index reflects an excellent performance and efficiency in a bank which would also encourage banks to hold higher capital as collateral to avoid losses.

With reference to bank control variables, SIZE which denotes bank size is negative in value and statistically significant at the 10 percent level (Spec 4 and 5). This is in line with the findings of Carvallo et al (2015) who suggest banks with higher SIZE demonstrate have lower capital buffers. The amount of capital buffer are lower for larger banks in the full sample of the banks. NPL has negative sign (Spec 4-6)

refers to banks with higher levels of NPL indicates higher risk tolerance levels by showing a smaller capital buffers (Daher et al., 2015). ROE variables is not significant across of the specifications. For country specific controls, HHI which refers to market concentration has a significantly negative sign in Spec 1. Indicating that banks with the greater concentration will tend to hold less capital buffers. The influence of regional dummy (D_Region) is negative and significant for all spesifications, suggesting that capital buffer for each bank across region have a different characteristic.

Table 3.
The Relationship between Capital Buffer, Business Cycle, and Competition
Using System GMM Method

	(1) Buf_{it}	(2) Buf_{it}	(3) Buf_{it}	(8) Buf_{it}	(9) Buf_{it}	(10) Buf_{it}
Buf_{it-1}	0.448***	0.430***	0.450***	0.451***	0.425***	0.365***
	(8.80)	(6.64)	(6.89)	(16.50)	(9.19)	(3.48)
$Cycle_t$	-0.00422***	-0.00819***	-0.0108***	-0.00175	-0.00435**	-0.0025
	(-2.42)	(-2.96)	(-3.25)	(-0.70)	(-2.22)	(-0.83)
$Cycle_t$ x D_ib		0.009	0.012			
		(1.42)	(1.64)			
$Lerner_{it}$		0.055	0.046	0.0461**	0.0650*	0.03
		(1.48)	(0.98)	(2.15)	(1.77)	(0.70)
Lernerit x D_ib			0.001		-0.00555	0.04
			(0.02)		(-0.11)	(0.45)
$Size_t$	-0.002	-0.007	-0.006	-0.00398*	-0.00432*	-0.01
	(-0.93)	(-1.55)	(-1.46)	(-1.89)	(-1.71)	(-1.62)
NPL_{it}	0.001	0.003		-0.0447	-0.0689	-0.0254
	(0.12)	(0.63)		(-0.94)	(-1.19)	(-0.37)
ROE_{it}	-0.023	0.013	-0.027	-0.000062		0.000062
	(-0.67)	(0.17)	(-0.56)	(-0.04)		(0.03)
HHI_t	-0.0939*			-0.00215	-0.0598	-0.00177
	(-1.87)			(-0.12)	(-0.83)	(-0.49)

	(1) Buf$_{it}$	(2) Buf$_{it}$	(3) Buf$_{it}$	(8) Buf$_{it}$	(9) Buf$_{it}$	(10) Buf$_{it}$
D_Region	-0.0457***	-0.0465***	-0.0479***	-0.0295*	-0.0443***	-0.0285
	(-3.71)	(-4.40)	(-3.17)	(-1.91)	(-3.74)	(-1.23)
D_ib		0.0095	-0.0132		0.01	0.03
		(0.22)	(-0.37)		(0.71)	(0.75)
D_year	Yes	Yes	Yes	Yes	Yes	Yes
C	0.152***	0.236***	0.218***	0.143***	0.184***	0.183***
	(3.95)	(2.62)	(3.11)	(3.59)	(3.54)	(2.78)
Obs	607	514	553	514	553	514
F	19.11	57.98	59.44	49.03	32.17	20.05
Instrument	24	32	32	26	33	26
AR (1)	-2.84***	-2.81***	-2.66***	-2.63***	-2.42**	-1.97**
AR (2)	1.16	0.57	0.94	0.16	1.18	0.31
Hansen Test	11.43	14.44	17.75	17.43	28.75	14.87

Superscripts ***,**,* denotes statistical significant at the 0.01, 0.05, and 0.10 level respectively. Tabel 4 reports regression result using System GMM. Dependent variable is proxied by capital buffer with measure the difference between total capital ratio and minimum capital requirement by regulator. Independent variable are CYCLE as a proxy of business cycle, LERNER represent the bank competition. Control variables on bank level include Size is proxied by natural logarithm total aset, NPL as a value of ln_npl which denotes ratio of non-performing loan to total assets, ROA is proxied by Return on Avergae Asset, dan control variable on country level are HHI (Herfindahl-Hirschman Index) as a proxy of market concentration, D_REGION as a dummy region (ASEAN/MENA).

V. CONCLUSION

This paper examined the fluctuation of capital buffer related to unique risk (ROR risk and DCR), business cycle, and bank competition for banks of ASEAN and MENA regions for the period 2011-2015.

Using two measure namely Asset Spread and Deposit for capturing the extent of ROR risk and DCR showed different result. Asset Spread has a significantly positive with capital buffer. Dual-banking system where both Islamic bank and conventional bank are co-exist becomes one of the factor that Islamic bank will adjust the degree of return on depositor with conventional interest rate as a benchmark. The extent of profit distribution towards interest rate tend to influence the risk of Islamic banks so that the amount of bank capital adjusted its risk. Whereas, by Deposit measure, the negative result indicating that the higher risk tolerance in Islamic banks and prove that they able to manage UPSIA without build up their capital.

Business cycle which are proxied by real GDP growth to capture the procyclicality of behavior capital buffer indicates a negative coefficient with the interpretation that the Islamic banks to lower capital buffer at the time of expansion (upturn) and increase during recessions (downturn) (Ayuso et al., 2004) An increase in capital buffers enabled the bank's policy to create new capital and policies to reduce the weight of the assets of high risk (Shim, 2013). The results also indicate the behavior of procyclicality in the bank where the credit growth in excess of the bank to various sectors that could pose a systemic risk and the impact of the economic shock.

The results also showed a significant positive effect on competition and capital buffers which banks with a high level of competition will have capital a high buffer. Increases in the capital also indicate their commitment to supervision and draw the attention of the borrower. Allen et al. (2011) also said that the bank's efforts hold positive capital was the result of market discipline banks must comply. When the side is not guaranteed bank liabilities as a whole, the customers ask for a higher rate of return to compensate banks. Factors which can also lead to increased competition which is the number of foreign banks in a country (Claessens et al., 2012)

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APPENDIX

Table 1.
Descriptive Statistics

Country		Bank Type	Qty. Bank	Variabel on bank level							Variables on *Country level*	
				BUF	ASSTSPR	DEPST	LNR	NPL	ROE	SIZE	CYCLE	HHI
ASEAN	Brunei	IB	1	0.14	-	-	-	0.06	0.09	17.87	0.12	0.74
		CB	1	0.03	0.01	0.95	0.34	0.06	0.16	17.23	0.12	0.74
	Indonesia	IB	9	0.14	0.13	0.77	-0.28	0.05	0.05	16.25	5.50	0.09
		CB	68	0.12	0.06	0.92	0.11	0.09	0.10	16.84	5.51	0.09
	Malaysia	IB	17	0.10	0.02	0.76	0.08	0.02	0.10	18.24	5.28	0.14
		CB	26	0.16	0.02	0.67	0.05	0.02	0.10	18.19	5.28	0.14
MENA	Bahrain	IB	19	0.18	0.03	0.70	0.15	0.14	0.05	16.86	3.70	0.15
		CB	8	0.10	0.01	0.77	0.05	0.07	0.03	16.75	3.70	0.15
	Egypt	IB	2	0.01	0.01	0.96	0.12	0.07	0.01	17.11	1.02	0.29
		CB	23	0.07	0.01	0.95	0.13	0.15	0.01	17.67	1.55	0.29
	Kuwait	IB	5	0.15	0.01	0.91	0.27	0.04	0.06	18.67	3.08	0.19
		CB	5	0.07	0.01	0.91	0.30	0.04	0.08	18.88	3.08	0.19
	Oman	IB	2	0.52	0.02	0.23	-0.72	0.00	-0.05	15.59	3.25	0.28
		CB	6	0.04	0.01	0.90	0.18	0.03	0.12	18.23	3.25	0.28
	Qatar	IB	5	0.09	-0.01	0.86	0.34	0.02	0.13	19.12	5.43	0.27
		CB	6	0.07	0.00	0.90	0.35	0.02	0.13	18.92	5.43	0.27
	Saudi Arabia	IB	5	0.17	-0.02	0.35	-	0.02	0.13	18.92	5.03	0.12
		CB	8	0.09	-0.02	0.94	0.41	0.02	0.15	19.98	5.03	0.12
	UAE	IB	7	0.07	0.01	0.71	-0.11	0.10	0.09	18.48	4.83	0.12
		CB	15	0.09	0.02	0.88	0.35	0.08	0.12	18.59	4.83	0.12
	Palestine	IB	2	0.08	0.01	0.85	0.02	0.02	0.10	15.84	-	0.52
		CB	2	0.05	-0.01	0.90	0.05	0.02	0.11	16.02	-	0.52
	Yemen	IB	3	0.10	0.06	0.59	-0.46	0.13	-0.01	16.13	1.66	0.47
		CB	4	0.31	0.07	0.97	0.07	0.21	0.10	16.13	1.66	0.47
	Jordan	IB	3	0.18	0.03	0.78	0.03	0.03	0.10	16.93	2.70	0.26
		CB	11	0.06	0.03	0.94	0.11	0.09	0.09	17.60	2.70	0.26
All Countries		Mean		0.11	0.03	0.86	0.15	0.07	0.09	17.66	4.48	0.17
		St dev		0.12	0.07	0.19	0.24	0.19	0.08	1.72	1.90	0.16
		Min		0.01	-0.05	0.04	-0.97	0	-0.17	12.07	-1.62	0.07
		Max		0.84	0.85	1.31	0.72	3.64	0.29	21.54	9.95	1
		Obs		998	1290	945	844	948	1038	1060	1281	1308

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