

Liquidity Risk: An Islamic Banking Perspective

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Abstract

The purpose of this study is to investigate the factors influencing the liquidity risk based on the ASEAN Islamic banking perspectives. The latent independent variable in this study is the liquidity ratio, meanwhile, the independent variables are; (i), profitability, (ii) capital adequacy, and (iii) bank capitalization. It is a unique study as the Islamic banking is another type of banking system which is rapidly growing in many countries. Regardless of numbers of Muslim population, Islamic banks currently exist in both Islamic and non-Islamic countries. This study hence would benefit those who are practicing in the finance and banking sectors. This study use a ten (10) years unbalanced panel data dated from the year 2005 to 2014. The sample consists of thirty (30) Islamic banks from six ASEAN countries. By using random effects model, the regression results reveal that profitability and bank capitalization have a negative relationship while profitability has a positive relationship to ASEAN Islamic banks liquidity risk. All independent variables are found to be significant to the liquidity risk except for the profitability which is statistically insignificant. On the other hand, both capital adequacy and bank capitalization are statistically significant at 1% significant level.

Keywords: Bank Capitalization, Profitability, Capital Adequacy, ASEAN, Islamic Bank, Liquidity

Liquidity risk

This paper studies the determinants of Islamic banks liquidity risk for ASEAN countries. It is an important study since bank liquidity would indicate on how good the banks manage their assets which include personal or business loans, mortgages and credit cards. Liquidity of the bank is created whenever the illiquid assets are converted to become the liquid liabilities of bank. Vuilleme (2014) mentioned that liquidity is the ability to pay back the obligations with the current liquid assets or cash. A bank can be categorized as a liquid bank whenever it has the ability to control its assets and liabilities. However, too much increase in illiquid liabilities or equity eliminates the higher liquidity of bank. Liquidity risk occurs whenever there is a mismatch between asset and liability of the bank. Islamic bank plays a role as an interest-free banking system where there is no interest to be collected or charged as compared to the conventional bank. This study attempts to provide the Islamic banking literature with beneficial knowledge regarding Islamic banks

liquidity since most of the prevailing literature discusses about the liquidity of conventional banks.

One common issue in banking is when the length of assets hold does not match with the length of their liabilities (Iqbal, 2012). Naturally, banks cannot control their depositors and the length of these liabilities can vary from short-term to long-term obligations. On the other hand, banks offer relatively more long-term loans or financing that lead to a greater amount of long-term assets. This scenario causes the unbalance of balance sheet and asset-liability mismatch that contribute to liquidity risk. As a result, bank with higher liquidity risk may end up with bank run, followed by financial distress and bankruptcy (Ali, 2004). This situation occurs when the depositors is unable to withdraw money from a bank. In serious cases, the depositors tend to make their own assumptions that the bank will collapse and thus, they tend to withdraw all of their savings due to insecurity. As a consequence, the banks will have to liquidate their assets in order to meet the depositors demand. These banks may liquidate their assets at lower or force value and therefore facing

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losses or earn less profit. Hence, the bank may face problem of not capable to make repayment of their interbank loans. Due to this failure, other banks are also affected by the dominos effect. Since there are interbank loans relationships among the banks, a single bank failure may end up as a chain failure that would affect the whole banking system and the country (Gai, Haldane, & Kapadia, 2011).

Literature review

Liquidity risk occurs when banks started to finance their relatively illiquid assets with relatively liquid liabilities. The risk arises due to the inability of the bank to pay debts and other obligations. The banks are considered liquid when they can convert their assets to cash quickly and at any time when prices prevailing in the market. Kashyap et al. (2002) suggest that banks also create liquidity off-balance sheet through loan commitments and similar claims to liquid funds. Holmström and Tirole (1998) also reveal the same review.

Bank liquidity can be classified as something that always available whenever needed. Liquidity problem exists because of the interaction between funding and the asset. For example, a large amount of short-term 'flighty' funding relative to liquid assets such as cash. This implies that the bank would buffer of liquid assets whenever the investor want to withdraw the short-term funding. Brunnermeier (2008) indicates that liquidity of banks can be measured through the liquid asset and illiquid asset. This paper attempts to identify significant determinants of liquidity risk for Islamic banks in ASEAN countries. Possible determinants included in this study are profitability, capital adequacy and bank capitalization.

Profitability determines the returns and earnings of banks. Commonly understand in banking literature, bank profitability is negatively correlated to the liquidity of bank (Valla, Saes-Escorbiac, & Tiesset, 2006). This study is supported by many similar studies that state a highly profitable bank would result in a lower liquidity position (Bunda & Desquilbet, 2008; Rauch, Steffen, Hackethal, & Tyrell, 2009). This is happened by reason when a bank gains a higher profit, it simultaneously reducing the liquid asset of the bank such as short-term loans and credit cards. In contrast, other studies document a positive and significant relationship between profitability and bank liquidity (Laeven & Levine, 2008; Masoud, Iman, Zahra, & Samira, 2013). The returns gained will encourage banks to increase the level of liquidity. Greater amount of

profits allow banks to offer a good liquidity position as well as to manage the Islamic bank liquidity risk (Abdul Karim, Hassan, Hassan, & Mohamad, 2014). Rauch et al. (2009) state a higher capital enhances the ability of banks to have a higher liquidity because it allows them to absorb greater risk. Thus, capital adequacy is also considered as an important determinant of the bank liquidity (Repullo, 2004; von Thadden, 1999). Furthermore, liquidity creation demands a sacrifice of potential earnings and profit. The trade-off between liquidity and profitability occur when greater liquidity created, and the greater and severity losses incurred. Therefore, in order to meet sufficient bank liquidity level there are more illiquid assets to be disposed of or the banks will have to limit their issuance of long-term loans (or financing in Islamic context). Many previous studies reveal that there is a positive and significant relationship between capital adequacy and liquidity of the banks (Bunda & Desquilbet, 2008; Iqbal, 2012; Munteanu, 2012). Likewise, there are also various literatures document that capital adequacy has a negative and significant relationship with the bank liquidity (Berger & Bouwman, 2009; Diamond & Rajan, 2001; Gorton & Winton, 2000). The authors claim that financial fragility is characterized by lower capital; hence, it favours the liquidity creation. Moreover, a higher capital crowds out deposits reduce the liquidity creation of the bank.

Bank capitalization measures the size of the bank. A study by Masoud et al. (2013) as well as Ramzan and Zafar (2014) report bank capitalization shows a positive and significant relationship with liquidity risk. This refers to a bigger size of bank simultaneously increases the liquidity risk of the bank. Akhtar et al. (2011) indicate there is a positive relationship between bank capitalization and Islamic bank liquidity risk. There are also studies reveal that bank capitalization has a negative and significant relationship with liquidity risk (among others, Abdul Karim et al., 2014; Rauch et al., 2009; Valla et al., 2006). Nevertheless, Vodová (2011) provides an ambiguous relationship between bank size and liquidity, where there is either positive and negative relationship between bank capitalization and liquidity risk.

Data analysis and results

ASEAN consists of 10 countries, though, not all of them provide the Islamic banking system in their country. Using unbalanced panel data, this paper includes 30 samples of Islamic banks from six (6) selected ASEAN countries including Brunei, Indonesia,

Malaysia, Philippines, Singapore and Thailand. There are 123 numbers of observations made over a ten (10) year period from 2005 to 2014. The dependent variable is bank liquidity while the independent variables are profitability, capital adequacy, and bank capitalization. The bank capitalization is proxy by natural logarithm of assets for each bank because of their capitalization differences between banks and between countries. All data were obtained from Bankscope database by Bureau van Dijk. Table 1 provides the list of variables with their proxy and measurement.

Table 1: List of Variables

Variables	Notation	Proxies
<i>Dependent variable</i>		
Liquidity risk	LIQ	Liquid assets to deposits and short term funding
<i>Independent variables</i>		
Profitability	PROFIT	Return on average assets
Capital adequacy	CAD	Total capital ratio
Bank capitalization	BCAP	Total assets

The study applies the random effects model due to the significant of probability chi2 Breusch-Pagan Lagrange Multiplier (BPLM) test. In order to investigate the factors that influence the ASEAN Islamic banks liquidity, this study state the following hypotheses:

Hypothesis 1:

H_a: Profitability has a significant relationship with ASEAN Islamic banks liquidity.

Hypothesis 2:

H_a: Capital adequacy has a significant relationship with ASEAN Islamic banks liquidity.

Hypothesis 3:

H_a: Bank capitalization has a significant relationship with ASEAN Islamic banks liquidity.

These hypotheses are tested with the following basic panel data equation:

$$Y_{it} = \beta_0 + \alpha_{it} + \beta_1 X_{1it} + \dots + \beta_n X_{nit} + u_{it} + \epsilon_{it} \quad (1)$$

This paper conducts VIF diagnostic check which is to test the multicollinearity. The result indicates that there is no collinearity issue for the chosen variables. Table 2 shows the random effects estimation for the ASEAN Islamic banks while equation 2 represents the equation result.

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$$LIQ_{it} = 312.20 + 0.03PROFIT_{it} + 0.30CAD_{it} + 17.01BCAP_{it} \quad (2)$$

Discussion

From the REM, it shows that the value of Wald chi2 (3) is 205.96 and the model is significant. The overall R-squared in the model is 0.3212 which means, 32.12% of variance in the dependent variable can be explained by the variation in the independent variables. The remaining of 67.88% can be explained by other factors exclude from the model.

Profitability has a negative relationship with liquidity ratio but the study fails to reject the null hypothesis claiming that there is no relationship between profitability and ASEAN Islamic banks liquidity risk. Capital adequacy shows a positive relationship with the liquidity level and significant at 1 per cent level. This study rejects the null hypothesis which claims that there is no relationship between capital adequacy and ASEAN Islamic bank liquidity risk. Reducing capital adequacy of ASEAN Islamic banks by 1 per cent would result in decreasing of liquidity ratio by 0.30 per cent, while other variables remain constant. As the liquidity ratio reduces, Islamic banks illiquidity asset will rise up as a result of that. Therefore, these Islamic banks will face a higher liquidity risk with lower capital ratio.

Table 2: Random Effects Regression Result

Variables	Coefficient
Profitability	-0.03
Capital adequacy	0.30***
Bank capitalization	-17.01***
_cons	312.20
Number of observation	123
Wald chi2(3)	205.96
Prob > chi2	0.0000
R-squared (overall)	0.3212

Note: *** significant at 1% significant level

Conclusion

In a nut shell, the objective of this study to investigate the relationship between bank profitability, capital adequacy, and bank capitalization, with the bank liquidity is achievable. This study reveals that among these three independent variables, only two of them are

statistically significant to the ASEAN Islamic banks liquidity which is the capital adequacy and bank capitalization. Therefore, those who will benefit from this study should focus on the capital adequacy and bank capitalization in order to manage and match the asset and liability of ASEAN Islamic banks in order to reduce the liquidity risk.

With regards to the regression result, it shows that a higher capital adequacy would enhance the ASEAN Islamic bank liquidity creation. This situation simultaneously disposes the illiquid asset in order to have a better bank liquidity level although banks need to trade-off their potential profit. Thus ASEAN Islamic banks must balance between liquidity risk tolerance and profitability in determining the optimum level of capital adequacy, of course after considering capital ratio, in line with the legal requirements.

Meanwhile, an increase in bank capitalization will result in decrease of ASEAN Islamic banks liquidity level. Larger Islamic bank in ASEAN tends to have a higher illiquid asset due to the increasing amount of loans. This statement suits the theory of "too big, too fail", where a large bank does not promise a liquid bank. This is because larger Islamic bank needs to grant more financing to ensure their sustainability in the market. These Islamic banks have to ensure that they are capable to collect back the financial given, so that they can meet their obligations. A failure of doing so would create liquidity distress.

In conclusion, it is beneficial to investigate on ASEAN Islamic banks liquidity risk since it will encourage those finance and banking players to focus on the factors influencing banks liquidity risk. Moreover, this study would also benefit them to identify on which variables to focus more in order to manage the liquidity risk of the banks. This is because the results would assist market players such as bankers and economists in their decision making with regard to liquidity position, in controlling the liquidity risk of the bank.

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