Liquidity Risk of Islamic Banking in Islamic and Non Islamic Countries

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Abstract: This study aims to analyze systematic factors on the risk of Islamic banking liquidity in Islamic and non Islamic countries. Data used in this study were 105 banks from 24 countries with 18 Islamic countries and 6 non Islamic countries from 2007 to 2016. The result of this study is that there are different factors on the risk of Islamic banking liquidity in Islamic and non Islamic countries, i.e. Islamic countries are not affected by the systematic factors, while non Islamic, interest rate affected. This is because Islamic banking in non Islamic countries still following the rules of the economy using interest rates. This result has a different impact when the economic system imposed on a country is different, especially in the application of interest rate policies. The impact can make Islamic banking in non Islamic countries more stable than systematic factors that cannot be diversified.

1 INTRODUCTION

Liquidity problems have been recognized as a major obstacle to the growth of Islamic banking (Vogel and Hayes, 1998). In fact, in principle Islamic banking business aims to provide good liquidity management is done on all real business transactions (Antonio, 2001). This is a serious problem for Islamic banking in maintaining the sustainability of its business. Liquidity problem in banking is called as liquidity risk. Liquidity risk makes the financial crisis worse (Brunnermeier and Yogo, 2009). As Cetorelli and Goldberg (2012) argued that improper bank liquidity management can increase the spread of global liquidity shocks globally.

In theory, Islamic banking has a higher liquidity risk than conventional banks. Liquidity risks faced by Islamic banking occur due to many causes, the lack of liquidity funding sources is a fundamental problem faced by Islamic banks due to the absence of secondary markets and money markets available for Islamic finance, thus complicating the maturity problem of unlawful liabilities in Islamic banking, consequently Islamic banks cannot produce or provide sufficient returns to depositors (Ray, 1999).

Other causes are the limited number of financial instruments and the lack of harmony between central banks and Islamic banks, when the central bank refused to provide loans to Islamic banks without interest payments (How et al., 2005 and Tiby, 2010). In addition to the problems above, liquidity risk in Islamic banking is higher than that of conventional banking because Islamic banking is related to matters such as real assets, business cycles, cooperation among business partners and the behavior of policymakers. This lack of harmony between business partners is a clear decline in business conditions (Iqbal, 2012).

However, different opinions about the risk of Islamic banking liquidity are put forward by some researchers. Zineldin (1990) found that Islamic banking has superior liquidity risk management than conventional banking because Islamic banking has abundant funds. The study covers Egypt and Malaysia as Islamic countries and found that Islamic banking is an alternative to conventional banking today.

In addition, Ahmed (2001) revealed that most Islamic banking in the Middle East is currently experiencing an abundance of liquidity. As well, Kazarian and Koko (1987) argue that Islamic banks in Egypt have a positive role in mobilizing small

deposits from less wealthy people. The opinion of the researchers above is a study of Islamic countries, so as to support the Islamic banking capital in the country well.

According to the previous studies such as How et al. (2005), Waemustafa and Sukri (2016) and Megeid (2017) Islamic banking in Islamic countries (which adheres to law, economics and politics according to Islamic law, "Every country controlled by law- Islamic law is an Islamic state whereas every state controlled by different people's laws is a non-Islamic state and no third country type (Al-Adab Asy-Syar'iah 212) ") has a more robust liquidity risk management system than any other country. This is evidenced by the results of his study that systematic factors which are not diversifiable factors have no effect on liquidity risk and that affect liquidity risk in Islamic banking in Islamic countries is only the expansion of financing. The above findings provide information that Islamic banking in Islamic countries (in terms of liquidity risk management) is more resilient than other countries, as it is not affected by systematic circumstances.

The difference between theory and empirical about liquidity risk in Islamic banking above provides an opportunity for further analysis. Therefore, this study aims to analyze systematic factors on the risk of Islamic banking liquidity in Islamic countries and non-Islamic countries (legally, economically and politically according to Islamic law). So it can be seen whether the different legal, economic and political systems can have an impact on the risk of liquidity in Islamic banking.

2 LITERATURE REVIEW

2.1 Historical of Islamic Banking

The formation of Islamic banking was initially doubtful due to several reasons. The first reason is because the system of free interest is impossible. There are many opinions that say that an interest-free banking system is something that is impossible to do and not as common as banking in general (Rivai et al., 2007). This opinion is naturally stated because the banking business lives on interest. The second reason is because of doubts about Islamic banking financing its operations. This second reason relates to the first reason, businesses in banking grow and develop and finance their operations from interest. If Islamic banking makes an interest-free system in the banking system, then the income and

operational costs are doubtful. So that the sustainability of the establishment of the banking is questioned. Although there is a lot of evidence that shows that Islamic banking is running and began its establishment since the time of Prophet Muhammad S.A.W and a friend of the Umayyads and Banu Abassiyah, also in Europe (Rivai et al., 2007).

Islamic banking according to Antonio (2001) is a banking system whose implementation is based on Islamic law. The beginning of the establishment of this system was based on the prohibition of usury in Islam, namely the prohibition to lend or raise funds by charging interest on loans / deposits. In addition, this system was formed also due to the prohibition to invest in illicit (prohibited) businesses and ways, namely investing in liquor businesses and investing with speculation. Meanwhile, the conventional banking system cannot guarantee the absence of these things.

For the first time, the establishment of an Islamic bank was established in Egypt in 1963 under the name of the Islamic bank Myt-Ghamr, whose capital was assisted by King Faisal of Saudi Arabia. The establishment of the Myt-Ghamr bank was spearheaded by the Muslim Brotherhood, but did not last long because it was immediately disbanded by Gamal Abdul Nashr. However, the experiment of the establishment of the Islamic banking Myt-Ghamr (1963-1967) has been able to stimulate the thought of the possibility of the establishment of Islamic institutions engaged in finance and investment with decent profits.

Then in 1970, Thalut Harb Pasha established an Islamic bank under the name Bank Egypt. The bank was re-established in Egypt and began operations in 1972 which is a private bank that has its own autonomous rights. However, it is different from Myt-Ghamr whose main activity is a profitable, decent and lawful investment. The Egyptian Bank has its main activities in the social field, such as helping small businesses and helping the poor.

After that, Islamic banking began to appear in various Islamic countries beginning with the events of The Third Islamic Conference on February 29, 1972 in Jeddah. In a meeting attended by foreign ministers of Islamic countries, an agreement was reached to form a finance and economic department under the secretary general assigned to explain the Islamic banking system and gather opinions from Islamic countries.

The results of the department's review were discussed at the first meeting of the finance ministers of the Organization of Islamic Cooperation (OIC) in December 1973. The meeting produced a statement to establish an Islamic banking. The rapid development of Islamic banking turned out to be inseparable from the contribution played by the

Organization of Islamic Cooperation (OIC), which since the 1970s has issued many recommendations and encouraged its member countries to improve the economy of the people in their respective countries. Until finally the Islamic Development Bank (IDB) was founded in 1975 in Jeddah which built a milestone in the Islamic banking system, followed by the establishment of the first private Islamic bank in Dubai in the same year (Warde, 2000).

2.2 Islamic and Non Islamic Countries

The scholars divided the State into two parts above based on the Qur'an and Sunnah combined with the development of reality. Among the scholars who assert thus are contemporary scholars, such as Ibn Qudamah in al-Mughni (9/293), ath-Thobary in his interpretation (6/53) and also al-Qurthubi in his interpretation(8/57). Researchers from contemporary scholars also concluded that because the division of the state into two statuses is Al-Qur'an and Sunnah. As expressed by Shaykh DR. al-Ahmadiy (ikhtilaf ad-Darain, 1/203), Shaykh DR 'Abid Sufyani (Daarl Harb, p. 60), and DR Isma'il Fathoniy, (ikhtilafu ad-Darain, 72).

Among the arguments that show the division of shares has been implied in the Qur'an is, *"Indeed, those who have believed and emigrated and fought with their wealth and lives in the cause of Allah and those who gave shelter and aided – they are allies of one another. But those who believed and did not emigrate – for you there is no guardianship of them until they emigrate"* (Al-Anfal – 72).

In determining the rules of a country; whether it is an Islamic or a non-Islamic country, there are minor differences between the scholars, both salaf and khalaf. The principal law (*golabatul ahkam*) that applies is supported by the Islamic status of the ruler (siyadah). If the applicable law is the Islamic Shari'a in a country then it is an Islamic State.

Imam Abu Yusuf, the Hanafiyah cleric, said, *"The basis of a country is said to be an Islamic state is the establishment of Islamic laws in it, even though the majority of the population is non-Muslim. And the basis of a country is said to be a non-Muslim country is the establishment of laws other than Islam in it, even though the majority of the population is Muslim. The purpose of the Law here includes the regulation of state and economic management of a country"* (al-Mabsuth Imam As-Sarakhsi, 10/144).

The above basis can be used as a strong foundation for the division of whether a country can be called an Islamic state or not. If the economic system applied is different from Islamic law, the country is called a non-Islamic state. Thus, the economic climate of a country will be different from

an Islamic country that does not set a benchmark interest rate or 0% while a non-Islamic country sets a reference interest rate.

3 DATA AND METHOD

3.1 Data Collection

The unit of analysis in this study is Islamic banking in the World. Of the 395 Islamic banks in the world, several issuers were taken as samples through a purposive sampling technique. The criteria used in sampling are:

- Islamic banking that has been established for more than 10 years.
- Islamic banking that publishes its financial statements on the website of each bank.
- Islamic banking that published data on the website for 10 years from 2007 - 2016.

From the results of the random sampling criteria above, there are 105 Islamic banks from 24 countries in the World, 18 islamic countries (Bahrain, Bangladesh, Egyp, Iraq, Iran, Jordan, Kuwait, Malaysia, Maldives, Oman, Pakistan, Qatar, Saudi Arabia, Sudan, Unit Emirat Arab, and Yamen) and 6 non islamic countries (Albania, Bosnia, Indonesia, Philipine, South Africa, Srilanka, Thailand, Turkey). Financial statement data obtained from the website of bank, macroeconomic, and monetary policy data from the world banks.

3.2 Measure And Scale of Variables

The liquidity risk variable is calculated using the formula *liquid assets / total assets*. The GDP variable is calculated using the formula $C + I + G + (X - M)$, where *C is consumption, I is the investment, G is the state expenditure, X is the export and M is the Import*. Inflation variable is calculated using the formula $(CPI_n - CPI_0) / CPI_0$ where CPI is the consumer price index. The Unemployment variable is calculated using the formula of the *number of unemployed / number of labor force*. The Interest rate central bank from world bank.

3.3 Model Specification

The model specified in equation 1 is used to express the relationship between variables:

$$LR = \beta_0 + \beta_1 GDP + \beta_2 CPI + \beta_3 UNEM + \beta_4 IRATE + \varepsilon$$

Where,
LR   : Liquidity Risk
GDP   : Gross Domestic Product
CPI   : Inflation
UNEM   : Unemployment
IRATE   : Interest rate bank central

3.4 Method of Data Analyisis

This study uses an explanatory analysis. The test is a panel data regression testing using Eviews 9. In the panel data regression testing requires 3 steps, namely: Correlation test, Model Test and Regression. In the correlation test, the value between variables should be <0.8 to be free from multicollinearity. Next is the model test, this is done to determine the best regression model. There are four regression models of panel data namely: Common effect, fixed effect, fixed effect with cross section weight and random effect. There are three test models named chow test, Hausman test and Lagrange multiplier test. Chow test to choose the common effect or fixed effect model, Hausman test to choose the random effect or fixed effect model and Lagrange multiplier test to choose common effect or random effect. The last test used when the result of chow test and Hausman test is not aligned. Below is a hypothesis for model test:

- *The first model is a chow test that is ho: Common effect and ha: Fixed effect.*
- *The second model is the test of that ho: Random effect and ha: Fixed effect.*
- *The third model is Lagrange multiplier test that is ho: Common effect and ha: Random effect.*
- *If p-value> 0.05 then accept ho and if p-value <0.05 then reject ho.*

The next step is to read the results of the panel data regression which is the best model, whether it is common effect, fixed effect, fixed effect with cross section weight and random effect.

4 RESULTS AND DISCUSSION

4.1 Islamic Countries

4.1.1 Correlation Analysis

Table 1 summarizes the correlation values for all the variables used. This test is performed to identify some variables that have high correlation with correlation value above 0.8. If there is a correlation value above 0.8, then inter variables occur multicollinearity.

Table 1: Correlation Matrix of Study Variables in Islamic Countries.

	LR	GDP	INFL	UNEMP	IRATE
LR	1.000				
GDP	-0.002	1.000			
INFL	0.129	-0.132	1.000		
UNEM	-0.045	-0.171	0.228	1.000	
IRATE	-0.018	-0.029	-0.290	-0.186	1.000

Test results in table 1 show that all variables have a correlation value below 0.8. This means that all variables are independent of multicollinearity. If all variables are freed from multicollinearity, then the study can be processed.

4.1.2 Model Testing

Chow Test

Testing the first model is a test using Chow test. Table 2 below is the result of chow testing.

Table 2: Chow Test in Islamic Countries.

Redundant Fixed Effects Tests			
Equation: Untitled			
Test cross-section fixed effects			
Effects Test	Statistic	d.f.	Prob.
Cross-section F	10.885203	-88.797	0.0000

Table 2 shows the probability result is 0.0000. This explains that ho is rejected so that the result obtained is a fixed effect model better than the common effect model. Therefore, according to the results of Chow testing, the model used is a fixed effect model.

Hausman Test

The next model test uses the Hausman test. Table 3 below is the result of the Hausman test.

Table 3: Hausman Test in Islamic Countries.

Correlated Random Effects - Hausman Test

Equation: Untitled

Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	4.23449	4	0.3752

The results in table 3 indicate incompatibility with the previous test, i.e. ho accepted then the resulting result is a random effect model is better than the fixed effect model. If in the chow and Hausman test is not in line, then the next required test is Lagrange multiplier test.

Lagrange Multiplier Test

The third test is the test performed if the first and second model test results are not aligned.

Table 4: Lagrange Multiplier Test in Islamic Countries.

Lagrange Multiplier Tests for Random Effects			
	Test Hypothesis		
	Cross-section	Time	Both
Breusch-Pagan	163.5780	0.004195	163.5822
	(0.0000)	(0.9484)	(0.0000)

In testing Lagrange multiplier obtained result that ho is rejected, then best model is random effect. In conclusion, in the selection of the best models in chow, Hausman and Lagrange multiplier testing, the random effect model is the best model.

4.1.3 Estimation Results

The estimation result in table 5 below is the result of panel data regression with best choice model that is random effect.

The estimation results in table 5 above show that the variable of GDP, CPI, Unemployment and central bank benchmark interest rate have no influence to liquidity risk in Islamic banking in Islamic countries in accordance with previous study which states that systematic variable does not affect liquidity risk in Islamic banking.

Table 5: Estimation Results from Random Effect in Islamic Countries.

Variable Independent	VARIABLE DEPENDENT : LIQUIDITY RISK			
	Coefficient	Std. Error	t-Statistic	Prob.
GDP	0.15446	0.30161	0.51211	0.6087
CPI	0.21877	0.24401	0.89653	0.3702
UNEM	-0.78531	0.37631	-2.08683	0.3720
IRATE	0.02073	0.14476	0.14325	0.8861
R-Square	0.302549			

These findings are in line with previous studies such as How et al. (2005), Waemustafa and Sukri (2016), Haryono et al. (2016) and Megeid (2017) that resulted in systematic factors such as macroeconomics (GDP, CPI and Unemployment) and monetary policy (the benchmark rate) have no significant effect on liquidity risk in Islamic banking in Malaysia, Egypt and Pakistan belonging to Islamic countries.

Even Megeid (2017) found out that the risk management of liquidity in Islamic banking in Egypt is tougher than conventional banking. This is evidenced from the results of his study that affect the liquidity risk in Islamic banking in Egypt is only a financing expansion that affects the risk of liquidity. Therefore, Islamic banking in Egypt only needs to maintain the quantity of financing so as not to risk liquidity.

These findings answer previous findings so as to strengthen evidence that Islamic banking in Islamic countries can avoid systematic factors.

4.2 Non-Islamic Countries

4.2.1 Correlation Analysis

Table 6 summarizes the correlation values for all the variables used. This test is performed to identify some variables that have high correlation with correlation value above 0.8. If there is a correlation value above 0.8, then inter variables occur multicollinearity.

Test results in table 6 show that all variables have a correlation value below 0.8. This means that all variables are independent of multicolinearity. If all variables are freed from multicollinearity, then the research can be proceeded.

Table 6: Correlation Matrix of Study Variables in Non-Islamic Countries.

	LR	GDP	INFL	UNEMP	IRATE
LR	1.000				
GDP	0.159	1.000			
INFL	0.027	0.276	1.000		
UNEM	-0.266	-0.177	-0.154	1.000	
IRATE	0.063	-0.146	-0.422	-0.025	1.000

4.2.2 Model Testing

Chow Test

Testing the first model is a test using Chow test. Table 7 below is the result of chow testing.

Table 7: Chow Test in Non-Islamic Countries.

Redundant Fixed Effects Tests

Equation: Untitled

Test cross-section fixed effects

Effects Test	Statistic	d.f.	Prob.
Cross-section F	256.45670	-15,140	0.0000

Table 7 shows the probability result is 0.0000. This explains that ho is rejected so that the result obtained is a fixed effect model better than the common effect model. Therefore, according to the results of Chow testing, the model used is a fixed effect model.

Hausman Test

The next model test uses the Hausman test. Table 8 below is the result of the Hausman test.

Table 8: Hausman Test in Non-Islamic Countries.

Correlated Random Effects - Hausman Test

Equation: Untitled

Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	7.135711	4	0.1289

The results in table 8 indicate incompatibility with the previous test, i.e. ho accepted then the resulting result is a random effect model is better than the fixed effect model. If in the chow and Hausman test is not in line, then the next required test is Lagrange multiplier test.

Lagrange Multiplier Test

The third test is the test performed if the first and second model test results are not aligned.

Table 9: Lagrange Multiplier Test in Non-Islamic Countries.

Lagrange Multiplier Tests for Random Effects

Null hypotheses: No Effects

Alternative hyphotheses: Two-sided (Breusch-Pagan) and one-sided (all others) alternatives

Test Hypothesis		
Cross-section	Time	Both
412.2132	2.661326	414.8746
(0.0000)	(0.9484)	(0.0000)

(Breusch-Pagan)

In testing Lagrange multiplier obtained result that ho is rejected, then best model is random effect. In conclusion, in the selection of the best models in chow, Hausman and Lagrange multiplier testing, the random effect model is the best model.

4.2.3 Estimation Results

The result of estimation in table 10 below is a regression result of data panel with best choice model that is random effect.

Table 10.: Estimation results from Random Effect in Non-Islamic Countries.

Variable Independent	VARIABLE DEPENDENT : LIQUIDITY RISK			
	Coeff	Std. Error	t-Statistic	Prob.
GDP	0.0048	0.0048	1.0045	0.3168
CPI	-0.0098	0.0052	-1.8674	0.0639
UNEM	0.0065	0.0085	0.7659	0.4450
IRATE	-0.0091	0.0026	-3.4292	0.0008
R-Square	0.846316			

The estimation results in table 10 above show that the factors of GDP, CPI and Unemployment have no significant effect on Islamic banking in non-Islamic countries. This resulted in an appropriate outcome to a previous study of Effendi et al. (2017) that Islamic banking in non-Islamic countries has no impact on macroeconomic shocks. But interest rates have a significant and negative impact on Islamic banking in countries that do not implement Islamic economic system, so that Islamic banking is still highly dependent on the central bank's benchmark interest rate. These significant and negative influences mean that if interest rates set by a country's central bank are high, then liquidity risk in Islamic banking is low.

This is in line with previous researches Bordeleau and Graham (2010) who said that rising central bank interest rates could penalize banks for holding liquid assets in the long term. This means that high interest rates can lower the risk of liquidity because banks are forced to keep their liquid assets in the long term when interest rates are rising to minimize the risks that can occur.

5 IMPACT

This study into the new findings that are useful as information for non-Islamic countries should adopt the Islamic economic system that forbids interest to be free from various systemic problems that can lead to economic crisis.

The impact can make Islamic banking in non-Islamic countries more stable than systematic factors that cannot be diversified. Thus, the Islamic banking system can minimize liquidity risk and can focus more on managing liquidity risk from unsystematic factors.

6 CONCLUSION & SUGGESTION

Conclusion

This study aims to analyze liquidity risk of Islamic banking in Islamic countries and compare it with non-Islamic countries. The results of this study found that macroeconomic conditions and monetary policy not affect liquidity risk of Islamic banking in Islamic countries, but in non-Islamic countries monetary policy affect the liquidity risk in Islamic banking. This is because Islamic banking in non-Islamic countries still following the economic system of the country that still applying interest rates. Surely the results of this study into the new findings that are useful as information for non-Islamic countries should adopt the Islamic economic system that forbids interest to be free from various systemic problems that can lead to economic crisis.

Suggestion

The results of this study provide evidence that countries with Islamic economic systems are more resistant to systematic factor shocks. So the author gives advice to apply the Islamic economic system to all countries that practice Islamic banking and eliminate the interest system.

LIMITATIONS

This research is only limited to systematic factors, namely macroeconomic variables and monetary policy on liquidity risk in Islamic banking. For future research, can expand studied variables such as non-systematic factors and not only on liquidity risk, but also can assess other banking risks.

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