PROSIDING PERKEM VII, JILID 2 (2012) 839 - 850
ISSN: 2231-962X

Islamic Vs. Conventional Bank Stability: 'A Case Study Of Malaysia'

Siti Rohaya Mat Rahim sitir275@perak.uitm.edu.my
Norsilawati Mohd Hassan norsi963@perak.uitm.edu.my
Department of Economics,
Faculty of Business Management
Universiti Technology MARA, Perak
32610 Bandar Seri Iskandar,
MALAYSIA

Roza Hazli Zakaria roza@um.edu.my
Department of Economics,
Faculty of Economics and Administration,
University of Malaya,
50603 Kuala Lumpur,
MALAYSIA

ABSTRACT

The objective of this paper is to assess whether there is any differences in the level of financial stability of Islamic banks as compared to commercial banks using the Z-score and NPL as proxies for financial stability. This paper uses secondary data from annual report of 17 Islamic banks and 21 commercial banks from 2005-2010. The model is regressed based on an econometric method which is panel data analysis. The findings showed that Islamic banks are more stable than commercial bank in terms of stability.

Keywords**:** Islamic banks; Commercial banks; Stability; Z-score; Panel Data.

INTRODUCTION

Financial stability refers to the absence of excessive fluctuations in the financial institutions and markets. A market with fairly constant output growth is considered as stable. An economy with frequent large recessions, pronounced business cycles, variable inflation or frequent financial crises would be considered economically unstable (M. Venardos, 2010; Imam and Kpaodar, 2010; and Karwowski, 2009).

Lack of stability corresponds with the financial instability situation or financial crisis (Hussein, 2010; Krichene and Mirakhor, 2008). These studies thus, agree that the current crisis may lead to global imbalances that indicate a danger to global economic and financial stability. This scenario can be explained when the entire global banking sector has since then been affected by the liquidity crisis and sub-prime mortgage crisis in United States. When the US bank Lehman Brothers went bankrupt on 15 September 2008, banks in the United States and Europe affected all financial institutions everywhere and triggered economic downturns around the world (Maeda, 2010; Bank Negara Malaysia, 2009; Zaman, 2008; Yee, 2003; Matthews and Tlemsani, 2002).

The global financial crisis that started in 2007 was the first real challenge for Islamic banking sector. The climate generated after the crisis hit the real economy especially on the financial sector and the effects generated by the financial crisis on the real economy. Due to the lack of comprehensive and detailed research, the analysis of the performance of the Islamic banking system before and during the crisis is mainly done based on empirical evidence, testimonials to prove the analysts' reasoning. During the 2008 global financial crisis was in favor of Islamic banking rather than commercial bank. A recent IMF study done by Hasan and Dridi (2010) has shown that Islamic banks performed better than conventional ones in 2008 in terms of profitability, credit and asset growth.

There are very few studies or research conducted to look at the relationship of the stability between Islamic banks and commercial banks especially done in Malaysia. Therefore, this research aims to examine whether this stability issues could threaten the stability of the entire financial institutions. The remainder of this paper is structured as follows. Section 2 provides the overview of the literature reviews on stability issues done by past researcher. Section 3 discusses regarding the methodology parts, followed by Section 4 in which the empirical results are described. Finally, Section 5 concludes this paper along with policy implications.

Statement of Research Problem

From the development of Islamic banks in Malaysia, it is imperative for Islamic banks to play their role effectively and efficiently to contribute to the overall stability of the financial system, and the growth and development of the economy. The issues that arise are although the development of Islamic banks is satisfactory in the Malaysian economy, the stability question remains. Liberalization effort and competition among Islamic banks players raises the issues of the ability of the smaller player to survive. Although consideration is given in the volatile financial environment, would Islamic banks be able to withstand financial crisis. These raise the need to undertake this research to examine this stability issues.

Hence, this research paper is conducted to bridge the gap by providing additional empirical evidence of whether Islamic banking is stable compared to commercial bank. We choose Malaysia as a case study because this country is characterized by dual banking sector which commercial banks and Islamic banks that is operates alongside in the industry. Besides that, this paper will look into the ability of the Islamic banking in Malaysia to be an alternative or substitute for the commercial bank during the financial crisis. In addition, this paper also examine the stability of Islamic bank compared to commercial banks that in which at the end focusing on the target towards the achievement of sustaining in the real economic growth and reducing inflation in Malaysia.

Objectives of the Study

General objective of this research is to study the stability issues of Islamic banks and commercial banks in Malaysia. Specific objectives are to calculate the risk of Islamic banks and commercial banks via Z-score and NPL methodology in addition to study the impact of macroeconomic environment on Islamic bank and commercial bank stability.

Significance of the Study

There are very few studies or research conducted to look at the relationship of the stability between Islamic banks and commercial banks especially done in Malaysia. This research is important for the authorities such as Islamic Financial Services Board (IFSB), The National Economic Action Council (NEAC) Ministry of Finance to know whether this stability issues could threaten the stability of the entire financial institutions.

Therefore, this research will examine if it better to liberalize the number of Islamic banks and commercial banks in Malaysia and let the market forces to determine the ideal number of players or should the authorities control the numbers of banks allowed operated in Malaysia because we know that competition will impact the risk taking by banks especially local banks regardless Islamic banks or commercial banks.

Research Methodology

The research methodology of this study will be explained in detail in Section 3. Briefly, this study will use primary data collected from consolidated and unconsolidated bank statements from all banking institutions. The scope of this study covers majority of banks including Islamic and commercial banks for domestic banks and foreign banks operating in Malaysia and hence the results will be used to compare the stability between these two types of banks, before and after the financial crisis. Data will be analyzed using the Ordinary Least Square (OLS) method through E-views 6 via Z-score methodology.

LITERATURE REVIEW

What is financial stability? According to Venardos (2010), financial stability is the condition where the financial intermediation process functions smoothly and there is confidence in the operation of key financial institutions and markets within the economy. The Swiss National Bank (SNB) defines systemic stability as “A stable financial system can be defined as a system where the various components fulfils their functions and are able to withstand the shocks to which they are exposed” (Financial Stability Report, 2009, page 5). The important are to discharges the adverse economic cycles and shocks or disruptions to the intermediation financial system.

Study done by Chia and Wang, (2008) and Dar and Presley, (1996) have put one way of cyclical fluctuations was due to interest rates, unlike Islamic economic paradigm, the prohibition of interest contribute less to the business cycle in economics. Whereas Kaminsky and Reinhart (1996), study the relationship from macroeconomics perspectives, are including the inflation rate and real GDP growth being considered in their study. To discuss Islamic banking from macroeconomics perspectives (Demirguc-Kunt et al., 2006; Chapra 2000; El-Gamel, 2000; Demirguc-Kunt and Detragiache, 1998) provide a comprehensive comparative review of the literature of macroeconomic stability, whether an Islamic banking using profit and loss (PLS) system would replace interest-based transactions applicable by the commercial banks.

In recent times, the global crisis, according to Hasan and Dridi (2010), has renewed the interest specifically on resilience of the Islamic banking industry during crises. The empirical work, study the relationship between Islamic banking and financial stability. The asset-based and risk-sharing nature of Islamic finance has shielded Islamic banking from the impact of the crisis. Islamic bank also, have relied on leverage and have undertaken significant risks that make them vulnerable to the second round effect of the global crisis. In order to gauge banks' risk of failure; these two components are important which the component of risk and assets. Therefore these findings confirm the relationship between bank stability and risk.

Aisyah (2009) and De Nicolo et al., (2006), study the relationship between bank size and measures of charter value and insolvency risk in a sample of publicly traded banks in 21 industrialized countries. The findings show that banks operating in more developed countries have higher insolvency risk. Various methods used by the researchers to study banks stability briefly explain in details regarding the approaches which known as Z-score model. The Z-score has been used widely in previous empirical literature with respect to measurement and determinants of the safety and soundness of financial institutions. Among the studies that employ Z-score model in their analysis are Hasan and Dridi (2010), Karwowski (2009), Laeven and Levine (2009), Cihak and Hesse (2008), Demirguc-Kunt, Detragiache, and Thiesel (2006), Boyd, de Nicolo and Jalal (2006), Hesse and Cihak (2006) and Boyd and Runkle (1993).

Islamic and Commercial Banks Scenario in Malaysia

The current financial crisis raises some voices which call us to rethink of another alternative financial system. As from the definition itself, there are difference between commercial bank and Islamic bank. Commercial bank provides transactional and savings accounts and accepts time deposits while Islamic banking refers to a system of banking or banking activity that is consistent with the principles of Islamic law (Shariah) and its practical application through the development of Islamic economics. Several researchers argue that the current financial crisis could have been avoided if the Islamic finance and banking system had been in place instead of conventional one. Karwowski (2009) and Ariff (2007) conclude in their research that Islamic banking provides different environment both for Muslim and non-Muslim ensures stable condition stability in the financial system.

From the development of Islamic banks in Malaysia, it is imperative for Islamic banks to play their role effectively and efficiently to contribute to the overall stability of the financial system, and the growth and development of the economy. The issues that arise are whether the development of Islamic banks is satisfactory in the Malaysian economy, the stability question remains. Liberalization effort and competition among Islamic banks players raises the issues of the ability of the smaller player to survive. Although consideration is given in the volatile financial environment, would Islamic banks be able to withstand financial crisis. These raise the need to undertake this research to examine this stability issues.There are many reasons why Islamic banks can survive during the financial crisis in terms of stability.

Firstly, Islamic banks increased their liquidity holdings during the crisis relative to conventional banks. Hasan and Dridi (2010), cited IMF study reports that Islamic banks have maintained stronger credit growth compared to conventional banks in almost all countries and suggesting that the system has great potential for further market share expansion and a possible contribution to market stability through the available credit. This also explains why Islamic banks performed better during the crisis compared to conventional banks. According to a study done conducted by IMF, on average, Islamic bank credit and asset growth was at least twice higher than those conventional banks during 2007-2009 (www.imf.org.com). El-Hawary et al., (2007) show that as at the end of 2007, Islamic profits amount were reported USD 15 billion and by 2012, Islamic assets estimated to reach USD 1, 600 billion, with revenues of USD 120 billion.

Secondly, Islamic bank seem to be focused on cost efficiency, that it is based on profit sharing in which there is mutual risk sharing. Islamic financial institutions must undertake the appropriate due

diligence on the viability of business proposals and by enforcing the requirement for transparency and disclosure. According to Hassan (2008) Islamic banks are less affected than many conventional banks because they were prohibited in any speculative practices and excessive leveraging, which were root causes of the recent global financial crisis.

Thirdly, Islamic banks offer products that limit excessive leverage and disruptive financial innovation, thereby ensuring macroeconomic stability (Hasan and Dridi, 2010). Islamic banks are different in their business model as well as financing or equity participation in the sense that they can only be extended to activities in the real sector that have economic values. This led them to channel their investment more heavily weighted in less risky investment sectors such as healthcare, utilities, agricultural and etc. Islamic banks enjoy a built-in stabilizer to help them cope with economic downturns (Wilson, 2008).

METHODOLOGY

This research frames based on the empirical analysis around of measuring bank stability using Z-score. The result IMF study appears on methodologically work in this paper assesses bank stability via Z-score (Cihak and Hesse, 2008; Demirguc-Kunt, Detragiache, and Thiesel, 2006; Hesse and Cihak, 2006; Boyd and Runkle, 1993). The Z-Score Analysis is a bankruptcy prediction model which is generally known as measures of financial distress. The most widely used of multiple analysis method proposed by Edward Altman, a Professor of Finance at the Stern School of Business of New York University who developed the Z-score analysis almost 30 years ago. Related literature done by (Ivicic et al., 2008; Machler et al., 2007; Cihak and Hesse 2006; Demirguc-Kunt, Detragiache, and Thiesel, 2006; Nicolo, 2000) has confirm in order to measures the banking stability the most fashionable research analysis nowadays was based on Z-scores methodology.

As explained in the introduction part, this paper studies whether Islamic bank are less or more stable than commercial banks. The data is gathered from the bank's annual reports, and consolidated and unconsolidated statement bank statement for various financial institution in Malaysia which is sourced online as well as from published copies. The period of analysis spans from year 2005-2010 where data is pooled. Data for macroeconomics were gathered through online database from International Financial Statistics (IMF) and from Monthly Statistical Bulletin of BNM. The final sample contains approximately 228 observations. The data were collected from 17 Islamic banks and 21 commercial banks from consolidated and unconsolidated annual report in Malaysia. As for the whole samples for this research, the data gather for Islamic banks would be 102 and 126 for commercial banks as the completed data sets.

During the period of study, there had been a few mergers and acquisitions of commercial banks, affecting those banks which operate on Islamic window basis. Particularly, in 2008 Malaysia Islamic banking has observed some structural change since those banks that operate under Islamic banking windows, has been transformed to full-fledge banks. In the case of mergers have taken place within the sample banks, this study proceeds by using the data of anchor bank prior to merger. Meanwhile, the new Islamic banks upgraded from their Islamic banking operations are treated as a continuation from Islamic banking operations or windows. Thus, this study includes both full fledge and Islamic banking operations.

Sample of Study

The descriptive statistics in Table 3.1.1 shows the overview of the input data being use in this study. For the commercial banks and Islamic banks, we split the input data into all banks, local banks and foreign banks.

	Commercial Banks			**Islamic Banks**		
	Number of Banks	Period	Number of Observations	Number of Banks	Period	Number of Observations
All Banks (Local &Foreign)	21	6	126	17	6	102
Local Banks	9	6	54	11	6	66
Foreign Banks	12	6	72	6	6	36

	Commercial Banks	**Islamic Banks**

	Consolidated	Unconsolidated	Consolidated	Unconsolidated
All Banks (Local &Foreign)	111	7	75	1
Local Banks	52	0	52	0
Foreign Banks	59	7	23	1

TABLE 3.1.1: Overview of the Input Data

TABLE 3.1.1 shows overview of the input data.These input data also being split into consolidated and unconsolidated for all banks, local banks, and foreign banks for each commercial bank and Islamic banks. For all twenty-one commercial banks there were 126 observations and for all seventeen Islamic banks were102 observations. In terms of types of bank there are twelve foreign commercial banks and nine local commercial banks with 72 and 36 observation respectively. Six foreign Islamic banks and eleven local Islamic banks are recorded with 54 and 66 observations respectively.

Z-score Model Specification

Using the dependent, all independent and control variable, we estimate a general class of panel models of the form using regressions of Z-scores as according to Cihak and Hesse (2008) Demirguc-Kunt, Detragiache, and Thiesel (2006) Maechler, Mitra, and Worrell, (2005).

$$Zscore = \alpha + \beta_1 LAR_{it} + \beta_2 CIR_{it} + \beta_3 LTA_{it} + \beta_4 ID_{it} + \beta_5 HI_{it} + \beta_6 SHARE_{it} + \beta_7 INF_{it} + \beta_8 GDP_{it} + \varepsilon_{it} \quad (1)$$

Where:

Dependent Variable	Z-score
Independent Variable	
LAR	Loans-Assets Ratio
CIR	Cost-Income Ratio
LTA	In(Assets)
ID	Income Diversity
HI	Herfindahl Index
SHARE	Market Share
INF	Inflation
GDP	Real GDP
ε_{it}	Error term or unobservable effect of other aspects that are not captured by the model

Table 3.2.1: Definition of Z-Score and Independent Variables

3.3 NPL Model Specification

The dependent variable is bank's risk measured by the bank's NPL. Banks usually treat assets as non-performing if they are not serviced for some time. If payments are late for a short time a loan is classified as past due. Once a payment becomes really late usually 90 days the loan classified as non-performing. A high level of non-performing loan values indicate a sign that a bank's currently facing a problem or in other words bank were operating less profit and having a higher risk to defaults.

$$NPL = \alpha + \beta_1 LAR_{it} + \beta_2 CIR_{it} + \beta_3 LTA_{it} + \beta_4 ID_{it} + \beta_5 HI_{it} + \beta_6 SHARE_{it} + \beta_7 INF_{it} + \beta_8 GDP_{it} + \varepsilon_{it} \quad (2)$$

Where:

Dependent Variable	Non-Performing Loans (NPL)

Independent Variable	
LAR	Loans-Assets Ratio
CIR	Cost-Income Ratio
LTA	In(Assets)
ID	Income Diversity
HI	Herfindahl Index
SHARE	Market Share
INF	Inflation
GDP	Real GDP
ε_{it}	Error term or unobservable effect of other aspects that are not captured by the model

TABLE 3.3.1: Definition of NPL and Independent Variables

EMPIRICAL RESULTS

Using E-Views 6, we run several specifications to gather the results for the Generalized Least Square (GLS) method and robust estimation technique by replacing Z-score with non-performance loan (NPL). In addition, to run the regression analysis as shown in the above formula, we do separate the financial stability impact of the Islamic nature of a bank from the impact of the other bank-level characteristics and from macroeconomics.

Independent Variables	**Z-score (Panel A)**		**NPL (Panel B)**	
	Islamic Banks (1)	**Commercial Banks (2)**	**Islamic Banks (3)**	**Commercial Banks (4)**
Constant	0.680897 (0.0000)***	0.133812 (0.0000)***	0.908503 (0.0000)****	-1.611173 (0.0273)**
Bank Specific (1) Loans-Assets Ratio	-0.147068 (0.0195)**	-0.098306 (0.0634)*	1.476797 (0.0000)***	-1.314981 (0.0842)*
Efficiency (1) Cost-Income Ratio	0.038518 (0.0000)***	0.011706 (0.2011)	-0.013158 (0.0579)*	0.214108 (0.7478)
Asset Quality (1) In(Total Assets)	0.022055 (0.0003)**	0.022765 (0.0000)***	0.022248 (0.0000)***	0.020201 (0.0002)***
Industry Specific (1) Income Diversity	-0.102110 (0.3095)	0.040185 (0.0000)***	0.208662 (0.5209)	0.854856 (0.0001)**
Industry Specific (2) Herfindahl Index	0.000500 (0.0113)**	0.000453 (0.1723)	-0.000534 (0.0336)**	-0.000778 (0.9221)
Industry Specific (3)Market Share	-0.011792 (0.1479)	-0.021459 (0.0000)***	0.059340 (0.2800)	0.705656 (0.0066)**
Macroeconomics (1) Inflation	0.004880 (0.0433)**	0.002287 (0.1802)	-0.053276 (0.0000)***	0.075542 (0.3739)
Macroeconomics (2) Real GDP	0.004544 (0.0002)***	0.000799 (0.0430)**	0.042137 (0.0000)***	0.042138 (0.0177)**
Fixed Effect:Chow-Test (p-value)	0.0000	0.0000	0.0000	0.0000
R-squared	0.300331	0.331482	0.287459	0.209929
Adjusted R-squared	0.223093	0.211926	0.237426	0.206712
S.E.of Regression	1.414270	0.107905	1.863612	2.108415
F-statistic	15.79718***	14.68524***	10.61011***	10.28964***
Sum squared residual	154.0123	140.1772	267.4247	431.2051
Durbin-Watson stat	1.992206	1.872072	2.009188	1.995492
Observations	102	126	102	126

TABLE 4.1: Fixed Effects Panel Model, 2005-2010 (Dependent Variables: Z-Score and NPL)

Independent Variable	**Significant**	**Relationships**

Bank Specific (1) Loans-Assets Ratio	Islamic Bank Commercial Bank	LAR (↓)	**Z-Score (↑)**	risk (probability to default) (↓)
		LAR (↓)	**NPL (↓)**	risk (probability to default) (↓)
Efficiency (1) Cost-Income Ratio	Islamic Bank	CIR (↓)	**Z-Score (↑)**	risk (probability to default) (↓)
		CIR (↓)	**NPL (↓)**	risk (probability to default) (↓)
Asset Quality (1) In (Total Assets)	Islamic Bank Commercial Bank	In (TA) (↑)	**Z-Score (↑)**	risk (probability to default) (↓)
		In (TA) (↑)	**NPL (↓)**	risk (probability to default) (↓)
Industry Specific (1) Income Diversity	Commercial Bank	ID (↓)	**Z-Score (↑)**	risk (probability to default) (↓)
		ID (↓)	**NPL (↓)**	risk (probability to default) (↓)
Industry Specific (2) Herfindahl Index	Islamic Bank	HI (↓)	**Z-Score (↑)**	risk (probability to default) (↓)
		HI (↓)	**NPL (↓)**	risk (probability to default) (↓)
Industry Specific (3) Market Share	Islamic Bank	SHARE (↑)	**Z-Score (↑)**	risk (probability to default) (↓)
		SHARE (↑)	**NPL (↓)**	risk (probability to default) (↓)
Macroeconomics (1) Inflation	Islamic Bank	INF (↑)	**Z-Score (↓)**	risk (probability to default) (↑)
		INF (↑)	**NPL (↑)**	risk (probability to default) (↑)
Macroeconomics (2) Real GDP	Islamic Bank Commercial Bank	GDP (↑)	**Z-Score (↑)**	risk (probability to default) (↓)
		GDP (↑)	**NPL (↓)**	risk (probability to default) (↓)

TABLE 4.2: Relationships and significant between the independent variables

The figures in the parentheses below the estimated coefficients are the P-values
Notes: *** Significant at 1% level of significance, **Significant at 5% level of significance, *Significant at 10% level of significance

For interpretation purposes, Table 4.1 presents fixed-effect (FE) estimates, which allows for the constant terms to differ across banks systematically. The independent variables and control variables used in this study are; cost-income ratio (CIR), In (Total Assets), loan-assets ratio (LAR), Herfindahl Index (HI), income diversity (ID), market share (SHARE), real GDP growth (GDP) and inflation (INF). Table 4.5.3 reported that for the first set of regressions, the R-squared for Islamic banks were 30.03% while 33.14% for the conventional banks. This indicates that the dependent variables are able to explain 30% of the variation in risk for Islamic banks while 33.14% of the Z-score is explained in the case of conventional banks. The exogenous variables in both regressions are also jointly significant, as indicated by the F-statistics.

Typically Z-scores and NPL were used as dependent variables to measure the risk for Islamic bank and commercial bank. Recall that higher Z-scores value means 'higher safety' or 'lower insolvency risk exposure'. A high level of non-performing loan may be a sign of problems. This research follows the previous empirical works that used NPL as the independent variable, such as in Hassan (1993) and Ariff (2007).

Briefly, the result presented in Table 4.1, can be discussed in the following context. First, the results suggest that under industry specific, as HI (Herfindahl Index) increases by 1%, Z-score will decrease by 0.000534%. The result shows that HI (Herfindahl Index) for Islamic bank is significant at 5% significance level (columns 1 and columns 2).

Second, independent variables, namely LAR, total assets and GDP are significant predictors of NPL and Z-score. They are related to bank risk in such a way that the lower LAR, the higher Z-scores would be, thus the risk of default is lower. The result also suggests that the lower LAR, the lower NPL would be and thus the lower the risk of default. On the other hand, the higher GDP, the higher Z-score would be, thus the risk of default would be lower. Meanwhile, the higher the GDP, the lower is NPL, thus the lower is the risk.

Third, this study found that total assets enter significantly at 1% and 5% significance level for both Islamic banks and commercial banks. The higher the assets that banks have, the lower level of bank risk. Fourth, regression results have shown a number of significant differences between Islamic and conventional banks. This finding confirms to the empirical findings of panel data of this study which conclude that CIR, HI, SHARE and INF were highly significant whereas the ID was only significant for commercial banks. This result also suggests that CIR, HI, SHARE and INF were significantly affected on risk of Islamic banks compared to commercial banks (columns 3 and columns 4).

Finally, this study provides the evidence that market share were significantly controlled by commercial banks rather than Islamic banks (panel A and panel B). This result revealed that 1% increase in SHARE (market share) will cause the Z-score to decrease by 0.021459%. The same results

also appear for NPL whereby 1% increases in SHARE (market share) causes an increase in NPL by 0.705656%.

Focusing on Table 4.2, we illustrate the relationship between each of independent variable were used and its specific impact on the risk that being used in this study. The results confirm that, mostly the independent variables have their impact on Islamic banks rather than commercial banks.

In summary, the only difference between Islamic and commercial banks is that the Islamic banks have significant results towards risk in terms of cost-income ratios, Herfindahl Index, GDP and inflation.

4.1 The Average Z-score and NPL Volatility of the Conventional and Islamic Banks, 2005-2010

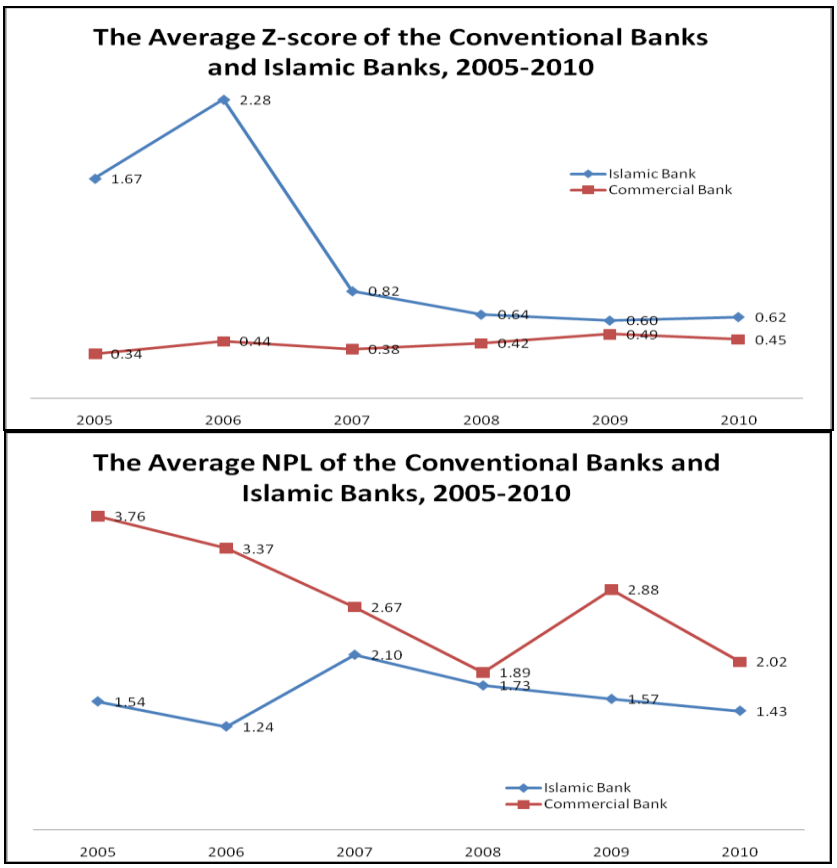

FIGURE 4.1: The Average Z-score and NPL Volatility of the Conventional and Islamic Banks, 2005-2010[1]

The measurement of Z-score is formed by the components of profitability ratios ROA as the proxy of the bank return, equity (leverage) ratio E/A as the proxy of the financial buffer and standard deviation of ROA to indicate the return volatility shown in Chart 4.1.1. Higher Z-score obtained for Islamic banks mainly due to higher return and equity of Islamic banks as compared to those of commercial banks. Higher Z-score indicates that Islamic banks are less risky (lower probability to defaults) than commercial banks. During the year of 2006-2007, the trend shows that Islamic banks are more resistant during crisis compared to commercial banks.

On examination of NPL, commercial banks have higher NPL than Islamic banks which indicate that commercial banks have higher risk (higher probability to default) as compared to Islamic banks. During the year of 2005-2006, the trend shows that commercial banks are less resistant during crisis due to the higher NPL compared to Islamic banks. The same results also appears during the crisis 2007-2010, which also shows that commercial banks have higher NPL (higher probability to default) as compared to Islamic banks. Our findings proved that there is consistent result with the previous assumption.

[1] Source: Bank's annually financial report and author's calculation

CONCLUSION

This study examines stability between Islamic and commercial banks from macroeconomics perspectives by focusing on Malaysia scenario. Based on the literature review, the research model was developed which comprise four independent variables and four control variables measured with two different set of dependent variables (Z-score and NPL).

The findings of the study show that Islamic banks are more stable than Islamic bank. Overall, Islamic banks have proved results that it is more stable than commercial banks. The variables that have been identified as the significant factors towards risk (probability to defaults) for Islamic banks are cost-income-ratio, total assets, Herfindahl Index, market share, inflation and real GDP.

Limitation of the Study

In order to conduct a research on the stability of Islamic banking and commercial banking in the Malaysia banking landscape after the financial crisis in 2008, a more comprehensive and effective research on relationships among variables for both bank need to be conducted. Larger pools of secondary data could be collected from all Islamic and commercial banks in Malaysia in order to have a better representative of our conclusions.

Recommendation for Future Study

There is limited documentation and research made under this subject. Firstly, this study provides an initial empirical analysis of Islamic banks' impact on financial stability using Z-scores in one country only which is the case study of Malaysia only; therefore it is suggested for future research to study the cross-country empirical analysis.

Besides that, there is still wide scope for improvement for further research; it is suggested to use the large coverage of sample data because in this research it is limited to five years only. Moreover the latest issues of financial institution in Malaysia is when Bank Negara Malaysia (BNM) announced another phase of liberalization of the financial services sector with foreign banks being allowed to operate in Malaysia under new licenses on 27 April 2009. Following the announcement, on 17 June 2010, five new commercial bank licenses were offered to the following banking institutions:

1. BNP Paribas SA, France
2. Mizuho Corporate Bank, Japan
3. National Bank of Abu Dhabi, United Arab Emirates
4. PT Bank Mandiri (Persero) Tbk, Indonesia
5. Sumitomo Mitsui Banking Corporation, Japan

The entrances of this new commercial bank in Malaysia would be the sufficient reason to be included for future research database. Finally, further research may attempt to analyze the financial stability impacts of other forms of Islamic finance which is could be using the fully-fledged Islamic banks only can be analyzed under these topics.

REFERENCES

Angelo M. Verandos. (2010). *Current Issues in Islamic Banking and Finance: Resilience and Stability in Present System*, Singapore: World Scientific Publishing Co. Pte. Ltd.

Aisyah Abdul Rahman. (2009). "Lending Structure and Market Risk Exposures: The Malaysian Case," *Asian Academy of Management Journal*, 14 (2): 1-20.

Bank Negara Malaysia. 2009. *Annual Reports*, Kuala Lumpur.

Boyd, J., & Nicolo, D., (2006). "The Theory of Bank Risk Taking Revisited," *Journal of Finance*, 60: 1329-1343.

Boyd, John H., & David E. R., (1993). "Size and Performance of Banking Firms," *Journal of Monetary Economics*, 31:47:67.

Chia, D. J., & Wang, Y., (2008). "Risk and Regulation of Islamic Banks: A Perspective from a Non-Islamic Jurisdiction," *Prudential Policy Department Monetary Authority of Singapore. Paper*

published in "Theory and Practice of Islamic Finance," MAS Staff Paper No. 49, December, 2008, Singapore.

Cihak, M., Maechler, A., Schaeck, K. & Stolz, S., (2009). "Who disciplines bank managers*?" IMF Working Papers, WP/09/272.* International Monetary Fund, Washington.

Cihak, M., & Hesse, H., (2008). "Islamic Banks and Financial Stability: An Empirical Analysis," *IMF Working Paper, WP/08/16*. International Monetary Fund, Washington.

Cihak, M., & Hesse, H., (2007), "Cooperative Banks and Financial Stability," IMF Working Paper No. 07/02, International Monetary Fund, Washington.

Dar, H. A., and R. Presley, R. J., (1996). "Islamic Finance: A Western Perspective," *International Journal of Islamic Financial Services*, 1(1):1-9. Retrieved 7 December 2010 from http://www.imamu.edu.sa/Data/abstract/management/acc/ISLAMIC%20FINANCE%20A%20WESTERN%20PERSPECTIVE.pdf

DeNicolo, & Gianni. (2000). "Size, Charter Value and Risk in Banking: An International Perspective," *Board of Governors of the Federal Reserve System.International Finance. Discussion Papers No. 689*.

Demirguc-Kunt, Asli, Detragiache, E., & Thierry Tressel, T., (2006). "Banking on the Principles: Compliance with Basel Core Principles and Bank Soundness". Retrieved 1 January 2011 from http://siteresources.worldbank.org/INTFR/Resources/Banking_on_the_PrinciplesCompliancewithBaselCorePrinciples.pdf

Dridi, J., & Hasan, M., (2010), "Have Islamic Banks Been Impacted Differently than Conventional Banks During the Recent Global Crisis?," *IMF Working Paper*. International Monetary Fund, Washington.

Dridi, J., & Hasan, M., (2010). "Put to the Test Islamic banks were more resilient than conventional banks during the global financial crisis, Finance & Development". Retrieved 4 May 2011 from http://mepei.com/in-focus/5279-the-islamic-banking-system-from-the-crisis-threats-to-the-futures-opportunities

El-Hawary, D., Grais, W., & Zamir Iqbal. (2007). "Diversity in the regulation of Islamic Financial Institutions," *The Quarterly Review of Economics and Finance*, 46: 778-800.

Hassan, M. K., & Kayed, R. N. (2010), "*The Global Financial Crisis and the Islamic Finance Solution".* Paper presented at the Durham Islamic Finance Conference, 14 -15 July 2010, Durham University, United Kingdom.

Hussein, K., (2010). "Bank Level Stability Factors and Consumer Confidence a Comparative Study of Islamic and Conventional Banks' Product Mix," *IMF Working Paper Series, 3/2010*. International Monetary Fund, Washington. Retrieved 7 January 2011 from http://mpra.ub.uni-muenchen.de/21800/

Imam, K., & Kpaodar, K (2010). "Islamic Banking: How Has It Diffused?" Working Paper No.10/195, International Monetary Fund. *IMF Seminar held in October 2009, EM Strasbourg Business School Workshop on Islamic Finance in France March 2010, and International Islamic Finance Conference, 2010, Malaysia.*

Karwowski, E. (2009). "Financial Stability: The Significance and Distinctiveness of *Levy Economics Institute Working Paper Collection* Islamic Banking in Malaysia," *Working Paper No. 555*, University of London.

Laeven, L., & Levine, R.,(2009). "Bank Governance, Regulation and Risk-Taking. *Journal of Financial Economics*," 93 : 259-75.

Maechler, A., Mitra,S., & Worrell, D, L., (2006). "Exploring Financial Risks and Vulnerabilities in New and Potential EU Member States," *Second Annual DGECFIN Research Conferences: "Financial Stability and the Convergence Process in Europe*, 6-7 October 2005. Forthcoming, IMF Working Paper. International Monetary Fund, Washington.

Matthews, R., & Tlemsani, I., (2002). "Ethical Banking the Islamic Mortgage in the United Kingdom", Kingston Business School.

Mohamed Ariff. (2007). "Islamic Banking: A Variation of Conventional Banking?" *Monash Business Review*, 3 (1):1-8.

Lai, Cheng Yee. (2003). Rising to the Challenges of Globalization: A Study of the Malaysian Banking Sector. Masters of Economics (MEc.). Dissertation. Faculty of Economics and Administration. University of Malaya, Kuala Lumpur. (Unpublished).

Swiss Banking (2009), "The Financial Crisis and Systemic Stability Facts, positions and arguments in 12 theses". The Financial Crisis and Systemic Stability - SBA, October 2009. Retrieved 6 May 2011 from http://www.swissbanking.org/en/20091016-3000-all-systemstabilitaet_def-de-mst.pdf

Tadashi Maeda, (2010). Making Sense of the Fast-Growing Islamic. In Angelo M. Verandos (Eds.). *Current Issues in Islamic Banking and Finance: Resilience and Stability in Present System* (pp. 115-125). Singapore: World Scientific Publishing Co. Pte. Ltd.

Willison, B (2009). "Technology trends in Islamic Investment Banking Islamic Finance News 6(19)". Retrieved 6 January 2011 from http://www.globalislamicfinancemagazine.com

Zaman, C. (2008). World Financial Crisis: Possible Impact on Developing Economies. *CASE Warsaw.*

APPENDIX

1.0 Summary of Dependent, Independent and Control Variables Description

Variables	Description
Dependent variable	
Z-score	Z = (ROA+CAP)/σ (ROA) **Where**: ROA (Return on Assets) = Net Income / Total Assets; CAP (Capital to Asset Ratio) = Equity / Total Assets; *σ* (ROA) = standard deviation of the return on assets (proxy for the variation of return)
Independent Variables	
Herfindahl Index	Sum of squared market shares of banks in the system
GDP growth	Growth rate of nominal GDP, adjusted for inflation (RM)
Inflation	Year-on-year change of the CPI index (percentage)
Market Share	Market share of banks in Malaysia per year
Control Variables	
In (Total Assets)	In (Total assets) of a bank (in RM million)
Loans to Assets Ratio	Ratio of loans to assets (percent)
Cost to Income Ratio	Ratio of cost to income (percent)
Income Diversity	$1 - \left\lvert \frac{\text{(Net interest income – Other operating income)}}{\text{Total Operating Income}} \right\rvert$

TABLE 1.0: Summary of Dependent, Independent and Control Variables Description

2.0 List of Islamic Bank in Malaysia

No	Name	Ownership
	Local Islamic Banks	
1.	Affin Islamic Bank Berhad	Local
2.	Alliance Islamic Bank Berhad	Local
3.	AmIslamic Bank Berhad	Local
4.	Bank Islam Malaysia Berhad	Local (Full-fledged)
5.	Bank Muamalat Malaysia Berhad	Local (Full-fledged)
6.	CIMB Islamic Bank Berhad	Local

7.	EONCAP Islamic Bank Berhad	Local
8.	Hong Leong Islamic Bank Berhad	Local
9.	Maybank Islamic Berhad	Local
10.	Public Islamic Bank Berhad	Local
11.	RHB Islamic Bank Berhad	Local
	Foreign Islamic Banks	
1.	Al Rajhi Banking & Investment Corporation (Malaysia) Berhad	Foreign
2.	Asian Finance Bank Berhad	Foreign
3.	HSBC Amanah Malaysia Berhad	Foreign
4.	Kuwait Finance House (Malaysia) Berhad	Foreign
5.	OCBC Al-Amin Bank Berhad	Foreign
6.	Standard Chartered Saadiq Berhad	Foreign
	Sources: Bank Negara Malaysia (2011)	

TABLE 2.0: List of Islamic Bank in Malaysia

3.0 List of Commercial Bank in Malaysia

No	Name	Ownership
	Local Commercial Banks	
1.	Affin Bank Berhad	Local
2.	Alliance Bank Malaysia Berhad	Local
3.	AmBank (M) Berhad	Local
4.	CIMB Bank Berhad	Local
5.	EON Bank Berhad	Local
6.	Hong Leong Bank Berhad	Local
7.	Malayan Banking Berhad	Local
8.	Public Bank Berhad	Local
9.	RHB Bank Berhad	Local
	Foreign Commercial Banks	
1.	Bangkok Bank Berhad	Foreign
2.	Bank of China (Malaysia) Berhad	Foreign
3.	Bank of Tokyo-Mitsubishi UFJ (Malaysia) Berhad	Foreign
4.	Citibank Berhad	Foreign
5.	Deutsche Bank (Malaysia) Berhad	Foreign
6.	HSBC Bank Malaysia Berhad	Foreign
7.	Industrial and Commercial Bank of China (Malaysia) Berhad	Foreign
8.	OCBC Bank (Malaysia) Berhad	Foreign
9.	Standard Chartered Bank Malaysia Berhad	Foreign
10.	The Bank of Nova Scotia Berhad	Foreign
11.	The Royal Bank of Scotland Berhad	Foreign
12.	United Overseas Bank (Malaysia) Bhd.	Foreign
	Sources: Bank Negara Malaysia (2011)	

TABLE 3.0: List of Commercial Bank in Malaysia