Islamic Banks and the Global Financial Crisis of 2007-09: An Assessment

Jamshed Y. Uppal and Inayat U. Mangla

Abstract

We examine the experience of the *Islamic* banks with respect to the global financial crisis of 2007-09 (GFC) and find that these were not immune from the ravages of the GFC. In particular, our analysis of the banking sector in Malaysia shows that the Islamic banks were adversely affected by it to a greater extend then were the conventional banks. Post-December 2008, the capital adequacy ratios for these banks were significantly lower, the loan loss ratios significantly higher, and their total loss reserves and secondary liquidity positions deteriorated.

I. Introduction - Islamic Banking

Islamic banking (IB) has developed remarkably over the last four decades, and is in practice in more than 60 countries with varying estimate of $800-$1000 billion in deposits. Standard & Poors estimates that it could expand to $4 trillion of assets in the next decade (Economist, 2008). As *Riba* (interest) is forbidden in Islam, it is implied that all debt contracts are excluded. Thus, the emphasis of IB is on engineering various profit and loss sharing (PLS) contracts where a fixed rate of interest is replaced with a variable rate of return based on real economic activities (Mangla and Uppal, 1988 and 1990). Thus the IB is intended to be an equity based system where equity capital is provided by the investors, who receive no fixed interest on their funds but a dividend out of the bank's profit (Bashir, 2001).

In the wake of the global financial crisis (GFC) of 2007-09, some scholars have suggested that Islamic finance may be an attractive option for investors as conventional finance faces challenges arising from the U.S. sub-prime lending crisis and recession concerns (Apps, 2008). In a recent statement by the Vatican (Middle East Online, 2009) it was suggested that banks should look at the rules of Islamic finance to restore confidence amongst their clients which has been lost during the current global economic crisis. In view of the recent exposé of the unethical and scandalous conduct of some in the banking and mortgage industry, the Vatican's statement has resounded in varied circles. Following the recent surge of interest in the IB, "those who have been in Islamic banking for a long time now feel vindicated" (Ambah, 2008). Some welcome the integration of ethics and values into finance as a positive development, especially in the light of recent U.S. business corruption scandals. "Many investors reportedly consider IB to be more reliable than conventional financing, given the recent global credit crisis and fears of economic recession," (Apps, 2008). The proponents of Islamic banking argue that profit-sharing contracts, being equity based, are superior financial instruments to debt in particular because of the risk-sharing nature of equity investment (Askari and Mirakhor (2009). Because of this participatory risk relationship, the financial institution may not be exposed to credit risk associated with conventional lending but, however, be more exposed to the risks associated with the performance as well as volatility in the value of underlying assets.

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More recently, the default and restructuring of the Islamic bonds (*sukuks*) notably issued by some of the property developers in Dubai have dampened the euphoric outlook on the Islamic finance. A recent Economist editorial notes that, "The problem of speculative, casino-like Western banks contrasted nicely with the emphasis that *sharia*-compliant finance places on an ethical, risk-sharing approach. But risk-sharing looks much less appealing when issues are , risk-sharing approach. But risk-sharing looks much less appealing when issues are defaulting" (Economist, 2010). The recent experience has forced the creditors to reevaluate risks associated with Islamic finance, in particular, risks associated with enforceability of the collateral and interpretation of *sharia*, and has adversely impacted the liquidity of the *sukuk* market.

"As Islamic finance activities grow in the United States, critics raise concerns about the related capital adequacy and system risks," (Ilias, 2008). It is, thus, worthwhile to examine how the Islamic banks have actually fared in the global financial crisis (GFC) period. In this paper we examine the experience of the Islamic banks with respect to the extent of the stress on their asset/liabilities and capital from the impact of the GFC. Our analysis is based on (i) survey of recent studies on this subject, (ii) examination of recent banking performance data from Pakistan, and (iii) empirical analysis of the relative performance of Islamic banks in Malaysia.

II. Unique Risks in Islamic Banking

A number of studies have pointed out pitfalls and risks associated with the Islamic banking; see, for example, Aggarwal and Yousef (2000), Kuran (2004) and Metwally (1997). Bacha (2004) argues that the ability of depositors to switch between the two banking systems inevitably exposes Islamic banks to interest rate risk. A report by Price-Waterhouse-Cooper (2008) notes that, "Risk management has not been uppermost on the Islamic banking sector's agenda in recent years." Another unique risk in Islamic Banking arises due to differences of interpretation between *sharia* scholars about what is permissible and what isn't (Modi, 2007). A recent study (Uppal and Mangla, 2010) pointed out that over the year 2006-2007 the Islamic banks seem to have increased their equity holdings, a period coinciding with the beginning of the global financial crisis. The Islamic banks have also moved into real estate and consumer financing over this period which are relatively new products in the emerging markets. The risks associated with these may not be yet fully quantifiable for a lack of adequate data history.

III. Some Recent Evidence

A few studies to-date have compared the performance of Islamic banks vis-à-vis the conventional banks during the global financial crisis (GFC). A recent IMF report (IMF, 2009) poses the question, "How Did They Fare?" with respect to the Islamic banks in the Gulf Cooperation Council (GCC) region. The report notes that although unlike conventional banks, Islamic banks are not permitted to have any direct exposure to financial derivatives or structured securities, the conventional banks in the region also had little exposure of from such securities. The main difference in risk exposures arose due to Islamic banks' greater exposure to the risky real estate and construction sectors, especially in the United Arab Emirates and Qatar (Exhibit 1). The IMF report further notes that GCC banks' profitability fell substantially in 2008 and in the first half of 2009 (Exhibit 1), with a largely similar overall impact on Islamic and conventional banks. Islamic banks were less affected by the initial impact of the global crisis, while there was a stronger first-round effect on conventional banks through mark-to-market valuations on securities in 2008. However, for the first half of 2009, there has been slightly larger decline in

profitability for Islamic banks compared to conventional banks, as the second-round effects of the crisis on the real economy, especially real estate, unfolded. In particular, Islamic banks in the United Arab Emirates and Qatar have been affected as they had a considerably higher exposure to the real estate and construction sectors. The IMF report however, holds its judgment till more information becomes available and the banks post additional provisions for 2009.

Exhibit 1: Selected Indicators for GCC Islamic Banks and the Banking System

	Saudi Arabia		Kuwait		United Arab Emirates		Bahrain		Qatar		GCC Average	
(Percent; 2008)	IBs	All	IBs	All	IBs	All	IBs	All	IBs	All	IBs	All
Capital adequacy ratio	22.1	16.0	21.7	16.0	12.8	13.3	24.5	18.1	17.9	15.6	19.8	15.7
Change in profitability (2007–08)	2.0	(11.8)	(42.7)	(70.1)	0.7	7.9	18.8	(4.6)	4.5	21.7	(6.6)	(13.9)
Change in profitability (H1 2009–H1 2008)	2.9	(11.9)	(71.9)	(65.3)	(34.2)	(19.5)	(46.5)	(33.7)	-	5.1	(29.0)	(23.5)
Change in profitability (2008 and H1 2009 compared with 2007)	4.3	(7.2)	(49.7)	(65.8)	(0.8)	10.0	8.2	(3.2)	2.8	25.4	(8.8)	(10.2)
Return on assets	3.7	2.1	1.6	3.2	1.7	2.2	2.6	1.3	6.6	2.6	3.2	2.3
Exposure to real estate & construction (as % of total loans)	5.6	7.3	22.1	31.4	25.7	12.9	11.3	26.2	38.3	18.4	20.6	19.2

Source: IMF, Regional Economic Outlook: Middle East and Central Asia, Washington D.C., 2009

The Islamic International Rating Agency (IIRA) conducted a survey of selected Islamic commercial banks' liquidity indicators for 2007/2008. The IIRA assessment shows that these banks had a strong liquidity position at the end of 2007 with liquid assets constituting 46.9 percent of total liabilities. The report concludes that, on average, the impact of the global crisis on the liquid assets in 2008 remained limited as reflected in a relatively modest downward adjustment of the liquid assets to total liabilities ratio. However, there were noticeable declines in the liquidity position for Bahrain Islamic Bank and Dubai Islamic Bank. On the other hand, Al Baraka and Meezan banks have seen their liquid assets increase over 2007-08. A report by International Financial Services (IFSL, 2010) notes that, "Islamic banks have not been immune to the effects of the financial crisis and downturn: some have suffered a higher rate of non-performing loans than conventional banks, mainly due to their exposure to falling real estate markets. Revenue and profitability has suffered in both 2008 and 2009 and liquidity is a significant restraint for some banks."

IV. Recent Evidence from Pakistan

Another exercise at evaluating the performance of Islamic banks has been State Bank of Pakistan's Financial Stability Report for 2009. Based on the first-half year data for 2009, the report notes that, "In sharp contrast to the conventional banking industry which has already weathered the worst of the storm in 2008, the impact of the slowdown in the economy has manifested itself more visibly on IBI's financial position in 2009." Further, it notes a marked slowdown in the asset and deposit growth, and deterioration in the asset quality in the first half of the year "as indicated by the rising non-performing financing (NPF) and increase in both the NPFs to Financing and Net NPFs to Net Financing ratios. There was an obvious impact of these developments on profitability, as evidenced by the decline in both RoA and RoE."

When we analyze more recent data on the banking sector in Pakistan, the impact of the global financial crisis (GFC) is quite noticeable. Exhibit 2 compares key indicators for the banking sector. The recent quarterly data over 2009 reveals that the Islamic banks have not been immune to the impact of the global financial crisis. The growth in assets, financing and deposits starting from a small base had been phenomenal over the period 2003-08; each category increased respectively 21, 18 and 25 folds, registering an annual compounded rate of growth of 84%, 79% and 91% respectively. The year 2009 data shows a significant slowdown from the historical growth rates. However, Islamic banking institutions' (IBI) growth rates remained higher than that of the conventional banks, thus increasing their market share from 4.9% to 5.3%.

Exhibit 2: Highlights of the Pakistani Banks - Quarter Dec 2008 – Sep 2009

(in percent)		**Dec-08**	**Mar-09**	**Jun-09**	**Sep-09**
Asset (growth)	IBI's	10.1	0.7	12.4	3.3
	All Banks	8.8	1.6	6.0	0.3
Financing/Loans (growth)	IBI's	1.8	(5.9)	3.0	(4.7)
	All Banks	18.3	(5.6)	5.0	(1.8)
Deposits (growth)	IBI's	17.7	2.3	15.5	2.8
	All Banks	9.4	-	8.2	(1.7)
Investment (growth)	IBI's	4.7	16.1	9.3	20.8
	All Banks	(15.4)	20.0	8.5	13.1
Equity (growth)	IBI's	10.1	1.8	6.8	3.1
	All Banks	3.4	1.5	4.7	3.0
NPFs to total financing	IBI's	2.3	4.5	5.0	6.5
	All Banks	10.5	11.5	11.5	12.4
Net NPFs to net financing	IBI's	0.8	2.3	2.4	3.0
	All Banks	3.4	3.9	3.7	4.1
ROA (after tax)	IBI's	0.8	0.8	0.8	0.7
	All Banks	1.2	1.8	1.7	1.6
Advances to Deposit Ratio	IBI's	75.5	71.7	69.6	69.6
	All Banks	71.7	66.0	58.9	54.6
Share of IBI's in total Banking Assets		4.9	4.8	5.1	5.3

Source: State Bank of Pakistan, 2009

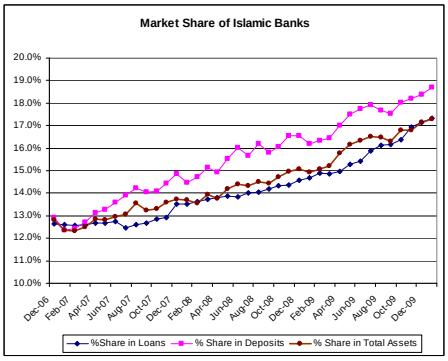
The asset structure of the IBI's saw significant increase in investments and inter-bank lending, while their financing portfolio contracted. Notable is the increase in investments of 21 percent in September 2009 which resulted from large placement of Government of Pakistan *Ijara Sukuk* of Rs 14.4 billion. However, deposits of the Islamic banks increased, despite a decline in deposit base of the banking system. The liquidity position of IBIs improved over the period, as the amount of financing declined and the deposit base increased, thus lowering the Financing to Deposits ratio (FDR). However, the FDR ratios for the whole banking sector also improved. There was a notable increase in the Non-Performing Financing (NPF) during the year 2009. The NPF as a percentage of Total Financing increased from 2.3% to 6.5% for the IBI's, almost a threefold jump, in comparison the NPL to Total Loan ratio increase from 10.5% to 12.4% for all banks. However, the IBIs were able to maintain their profitability, though with slight deceleration during the 2009. The Islamic banks saw a marginal decline in ROA attributable to a shift in the mix of earning asset towards low-return assets.

Evidence from Malaysia

To look into the comparative performance of the Islamic bank we examine the banking

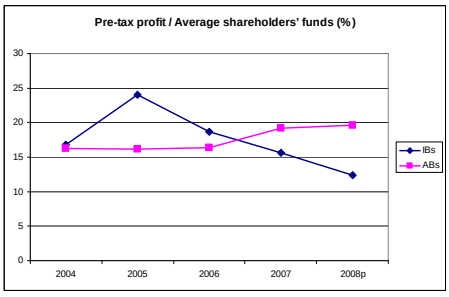
sector in Malaysia in detail. There are several advantages in taking up the Malaysian case. First, more detailed and more recent data is available on Islamic banks on monthly basis since 2006. Second, the country has not experienced a collapsing real estate market as has been the case in the UAE, or a near collapsing economy as in the case of Pakistan. Third, the Malaysian central bank enjoys best reputation among regulator around the globe. It is expected that the requirements for loss provisions would be strongly enforced and regulatory fore-bearance would be minimum. Finally, the Islamic banking in Malaysia is the oldest and the largest in the world, and is supported by a large, liquid and active secondary Islamic securities market, particularly in sukus. Comparative balance sheet data on monthly basis is available at the web-site of the Malaysian central bank, Bank Negara Malaysia, which we utilize in this study.

Figure 1: Malaysian Islamic Banks -Growth



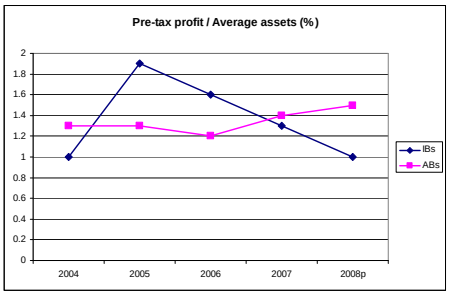
Growth, Market Share and Profitability: Malaysia had a head start in Islamic banking with establishment of the first Islamic bank, Bank Islam Malaysia Berhad (BIMB), which commenced operations on 1 July 1983. The IB's have experienced a remarkable rate of growth since then. Figure 1 shows the share of Islamic banks in the total banking sector in Malaysia, with respect to total assets, loans and deposits. The data shows continuing gains in the market share for the Islamic banks over the 2006-2010 period. Its share in the banking assets increased from 12.8% in December 2006 to 17.3% in January 2010. There is a slight slowdown in the sector growth, though it is expected as the asset base increases over time.

Figure 2: Malaysian Banks-Return on Equity



Despite the increasing market share the Islamic banks have been falling behind in profitability. The Returns on Assets are graphed in Figure 2 and the Returns on Equity in Figure 3 for the period 2004-2008. (The data on the profits of the banks is only available on annual basis up to year 2008).The Islamic banks show a consistent decline in profitability as measured by ROA or ROE. On the other hand, the profitability of the overall banking sector seems to have improved the year 2008.

Figure 3: Malaysian Banks - Return on Assets



Empirical Tests: In order to examine how the global financial crisis impacted the Islamic banking sector in Malaysia, we study the following six indicators for these banks relative to the overall banking sector:

1) *Risk Weighted Capital Ratio* = Capital Base / Total Risk Weighted Assets.

2) *Core Capital Ratio* = Tier-1 Capital or Core Capital / Total Risk Weighted Assets.
3) *Non-Performing Loans (Financing) Ratio* = Net Non-performing Loans/Net Total Loans.
4) *Total Provisions Ratio* = Total provisions / Net Non-Performing Financing.
5) *Cash Reserves Ratio* calculated as Cash & Reserves / Short Term Liabilities = Cash, Deposits Placed and Reverse Repos divided by Deposits, Amounts Due To, and Miscellaneous Borrowings.
6) *Liquid Assets Ratio* calculated as Liquid Assets / Short Term Liabilities = Cash, Deposits Placed and Reverse Repos, Amounts Due From, and Negotiable Instruments of Deposit Held divided by Deposits, Amounts Due To, and Miscellaneous Borrowings.

In order to compare the above listed bank indicators for the Islamic banks vs. the overall banking sector we run a series of linear regressions based on the following two models:

$$IB\_RATIO_{i,t} = \alpha_i + \beta_i AB\_RATIO_{i,t} + \varepsilon_{i,t} \quad \ldots (1)$$

$$IB\_RATIO_{i,t} = \alpha_i + \beta_i AB\_RATIO_{i,t} + \delta.D + \varepsilon_{i,t} \quad \ldots (2)$$

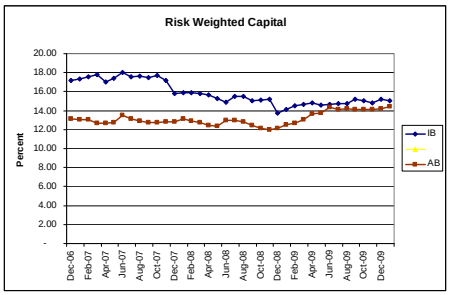
Where $IB\_RATIO_{i,t}$ and $AB\_RATIO_{i,t}$ refer to each of the six *i* ratios as listed above for the Islamic banks and all banks respectively for the month *t*, and D is a dummy variable which takes value of zero before December 2008 and of one from that month onwards. As the Islamic banking statistics are included in the overall banking sector data, there is a possibility of inducing spurious correlation between the dependent and the independent variable. This does not, however, pose a serious issue as our focus here is not on parameter estimation but on their stability, particularly of the constant. The methodology is to estimate model (1) and test it for stability of parameters across the sample period using *Chow's Break Point Test*. Two test statistics are used for the Chow test; F-statistics has an exact finite sample F-distribution, if the errors are *iid* normal random variables, and log likelihood statistic which has an asymptotic χ^2 distribution with DF=(m-1)/k, where k is the number of parameters and m is the number of sub-samples. Break point is specified as December 2008 to capture the impact of the global financial crisis. In the second model a dummy variable is included (December 2008) to capture the improvement or deterioration in the relative ratios for the two groups of banks. The choice of the break point is suggested by the clustering of a series of adverse financial events in October 2008; December 2008 being the end of the typical accounting year is a logical choice. Our results are, however, robust as to the selection of a different break point between July 2009 and March 2010.

Results from estimation of models (1) and (2) are reported in Table I which is split into two panels A and B presenting results from model 1 and 2 respectively, and six sub-sections each pertaining to one of the six performance indicators listed above. In each of the seven sub-sections of Table I, IB_RATIOi for Islamic banks is the dependent variable and AB_RATIOi for all banks is the independent variable. The empirical results are discussed below.

Capital adequacy: Figure 4 shows the risk-weighted capital ratios (under Basel II) for the Malaysian Islamic banks and the overall banking sector. The IBs started with a higher capital ratio of 17.14% in December 2006 which dropped to 15% by January 2010. Noticeable drops occurred at the end of year 2007 and 2008. On the other hand the banks as a whole improved their capital ratio from 13.11% to 14.42% over this period. The capital ratios of two types of

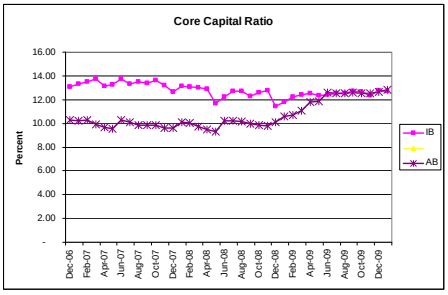
banking institutions seem to converge over the period.

Figure 4: Malaysian Banks – Risk Weighted Capital



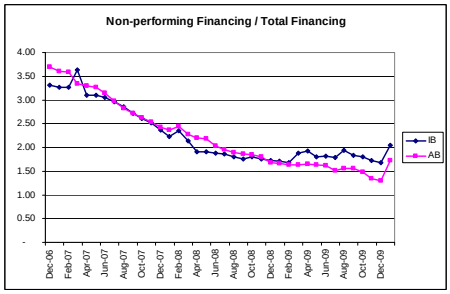
Results from regression of all-banks' risk-weighted capital ratio (AB_RWC) on Islamic banks risk-weighted capital ratio (IB_RWC) are presented in panel A and B of Table I.a respectively for models 1 and 2. As the results in panel A show, the regression is not statistically significant, prob(F-statistic = 0.2096), and the Chow test statistics strongly reject the null hypothesis of no structural change over the period. When we include a dummy variable, the coefficient of the dummy variable is highly significant (panel B) and there is a dramatic improvement in the regression statistics indicated by higher values for the adjusted R^2, F-statistics, and lower values for the Akaike and Schwarz Information Criteria. The negative value of dummy's estimated coefficient implies that the Islamic banks' core capital ratio deteriorated in the second period.

Figure 5: Malaysian Banks - Core Capital



A similar picture is presented with respect to the core capital ratios for the Islamic banks and the overall banking sector in Malaysia in Figure 5. The IBs' capital ratio was more favorable than the overall banking sector, but the conventional banking ratios seem to have improved over time, converging towards the end of the period. Regression results support the observation. The Chow test rejects parameter stability and comparing regression results in the panel A and B of the Table I.b the model with the dummy variable is highly significant. The dummy variable coefficient is negative and highly significant, indicating that the core capital ratio of the Islamic banks deteriorated over the sample period.

Figure 6: Malaysian Banks - Non-performing Loans



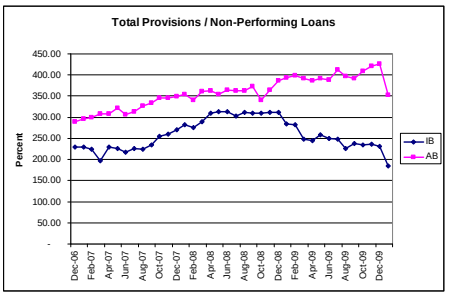
Non-Performing Loans: Figure 6 depicts non-performing financing or loans (NPF or NPL) for the Islamic banks and the overall banking sector. The movement over time of the ratio of NPF (or NPL) to total financing (or loans) seems to be almost identical until March 2009 when the Islamic banks NPF ratio seems to experience a sudden increase. After that the IBs non-performing portfolio seems to continue to deteriorate, which reflects a belated impact of the global financial crisis which affected the Islamic banks in secondary aftershocks to the overall economy of developing countries and impacted consumers spending and credit and the real estate markets. Since IBs were over-exposed in consumer credit and real estate lending, the GFC's impact is registered at a later stage in the economic crisis cycle.

The regression results for non-performing loan ratio are reported in section 3 of Table I.

The Chow test strongly rejects the null hypothesis of no structural change, and the regression statistics improve substantially when we include the dummy variable, as indicated by the higher values of adjusted R^2 and lower values for Akaike and Schwarz information criterion. The statistically significant and positive coefficient of the dummy variable indicates that the NPL ratio increased for the Islamic banks post-December 2008.

Loan Loss Provisions: Figure 7 shows the total loan loss provisions as a percentage of the total non-performing portfolios for the Islamic banks and the industry. The figure depicts that the overall banking sector has been better covered reflecting a more conservative provisioning against credit risk than the Islamic banking sector. It appears that towards the end of the year 2008 the provisioning position of the Islamic banks deteriorated noticeably. At the end of 2009, Islamic banks' total provisions were about two times the size of their non-performing portfolio. On the other hand the overall banking sector's total provisions were about four times as the size of their non-performing loan portfolio.

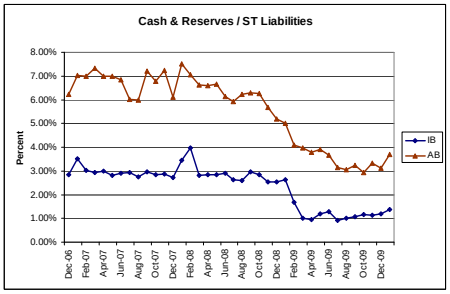
Figure 7: Malaysian Banks-Loss Provisions



The empirical tests indicate that the Islamic banks decreased their total loan loss provisions compared to the sample of all banks. Table I.d shows that the Chow test strongly rejects parameter stability in a regression of Islamic banks' total loan loss provision ratio on the ratio for all banks. The coefficient on the dummy variable is negative and statistically significant.

Liquidity: It appears that the liquidity position of both the Islamic as well as the conventional banks has been adversely affected during the global financial crisis period. As Figure 8 shows, the overall banking systems liquidity seems to have started deteriorating in October 2008, while the Islamic bank liquidity started sliding in February 2009. The lagged effect on the IB is consistent with the idea that these banks were impacted by the deteriorating consumer credit and real estate markets, in a second round of repercussion from the GFC. In January 2010 the liquidity ratio was about 60% and 50% of its level in December 2006 for the Islamic banks and all banks respectively.

Figure 8: Malaysian Banks - Cash Reserves

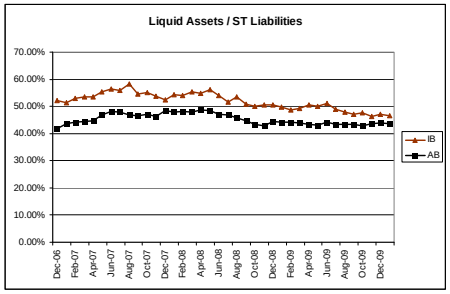


The empirical tests using cash reserve ratio are reported in section 'e' of Table I. Although the chow test rejects parameter stability at the conventional level of 10% significance, the coefficient of the dummy variable is insignificant. The cash reserve ratio which reflects bank's primary liquidity reserve does not seem to have been impacted by the financial crisis.

However, the impact of the financial crisis is more pronounced when we include secondary reserves and examine a broader measure of liquidity, ratio of liquid assets to short-term liabilities; see Figure 9. It should be noted that Islamic banks rely substantially on a liquid

market for *sukuks*, Islamic bonds, which was particularly affected by the unfolding of the global financial crisis. Our empirical test rejects the stability of the regression parameters (Table I.f, panel A) and the dummy variable is highly significant and of negative sign. It indicates that the liquidity position of the Islamic banks deteriorated relative to the total banking sector in the post December 2008 period.

Figure 9: Malaysian Banks - Liquid Assets



V. Summary and Conclusion

The global financial crisis has revealed the risks in the Islamic banking, and brought home the realization that all financial institutions operate in one global economy and cannot be isolated from the shocks arising in another sector or another country. It appears that though the Islamic banks were not directly impacted by the repercussions of the global financial crisis in its initial phase, the banks did experience the after-shocks of the GFC transmitted through indirect channels, through its impact on the global trade, economies and financial markets throughout the world. The Islamic banks were particularly exposed to the consumer and the real estate financing. According to an estimate around 20 percent of all financing by Islamic banks is backed by real estate (Standard & Poor's, 2009). As such, the Islamic banks had *indirect exposure* to excessive leverage in the real estate sector. The assets of Islamic banks in GCC region was less diversified and thereby the banks were more vulnerable. In addition, the Islamic banks invested in the equities of both listed and unlisted companies, which exposed them to the risk of severe correction in stock markets, as has been the case during the financial crisis. As a result of the global credit crunch, the *sukuk* market liquidity also evaporated and subjected the Islamic banks to liquidity pressures.

Our empirical analysis of the banking sector in Malaysia shows that not only the Islamic banks in the country were not immune from the ravages of the global financial crisis, but, as revealed by a number of commonly used performance indicators, were also adversely affected by it to a greater extend then were the conventional banks. There is empirical evidence that in the post-December 2008 period the capital adequacy ratios for the Islamic banks were significantly lower, the loan loss ratios were significantly higher, and there was deterioration in their total loss reserves and secondary liquidity positions.

In drawing lessons from the GFC experience we could also take note of the conclusion of the State Bank of Pakistan report (SBP, 2009) that, "The view that IFIs are inherently safe because of the prohibition on the use of structured finance vehicles is countered by the argument that Islamic finance is still not a mature industry, that there would have been attempts to introduce *shariah*-compliant securitization instruments if the crisis hadn't occurred when it did, and that IFIs are prone to risks specific to the nature of their operations." Sacirbey (2010) summarizes that, "Speculation was an across the board failing and Islamic banking fared less dramatically only because it had not been allowed to employ excessive leverage which had magnified the problem in more traditional financial institutions."

Table I: Results from Estimation of Models 1 and 2

Section: I.a	**Dependent Variable IB_RWC, Islamic Banks' Risk Weighted Capital Ratio**						
Panel A: Variable	Coeff.	t-Stat.	Prob.	**Panel B**: Variable	Coeff.	t-Stat	Prob.
AB_RWC	-0.3806	-1.2775	0.2096	AB_RWC	0.7614	2.9494	0.0056
				DUMMY	-2.4548	-6.8612	0.0000
Constant	20.8033	5.3163	0.0000	Constant	6.7287	2.0358	0.0494
Regression Statistics							
Adj. R-squared	0.0168			Adj. R-squared	0.5688		
Durbin-Watson	0.1608			Durbin-Watson	0.2944		
Akaike Info Crit.	3.2997			Akaike Info Crit.	2.5000		
Schwarz Crit.	3.3859			Schwarz Crit.	2.6293		
F-statistic	1.6319		0.2096	F-statistic	25.3986		0.0000
Chow Breakpoint Test: 2008:12							
F-statistic	28.6109		0.0000				
Log likelihood ratio	37.5034		0.0000				
Section: I.b	**Dependent Variable IB_CORE, Islamic Banks Core Capital Ratio**						
Panel A: Variable	Coeff.	t-Stat.	Prob.	**Panel B**: Variable	Coeff.	t-Stat	Prob.
AB_CORE	-0.1331	-1.7370	0.0909	AB_CORE	0.3648	3.1976	0.0029
				DUMMY	-1.3616	-5.0968	0.0000
Constant	14.2140	17.3044	0.0000	Constant	9.4099	8.2953	0.0000
Regression Statistics							
Adj. R-squared	0.0517			Adj. R-squared	0.4401		
Durbin-Watson	0.6873			Durbin-Watson	0.6538		
Akaike Info Crit.	1.6337			Akaike Info Crit.	1.1312		
Schwarz Crit.	1.7199			Schwarz Crit.	1.2604		
F-statistic	3.0173		0.0909	F-statistic	15.5442		0.0000
Chow Breakpoint Test: 2008:12							
F-statistic	12.8805		0.0001				
Log likelihood ratio	21.4317		0.0000				
Section: I.c	**Dependent Variable IB_NPF, Islamic Banks' Non-performing Financing Ratio**						
Panel A: Variable	Coeff.	t-Stat.	Prob.	**Panel B**: Variable	Coeff.	t-Stat	Prob.
AB_NPL	0.7949	20.6313	0.0000	AB_NPL	0.9398	20.7282	0.0000
				DUMMY	0.2914	4.4195	0.0001
Constant	0.4753	5.2703	0.0000	Constant	0.0442	0.3625	0.7192
Regression Statistics							
Adj. R-squared	0.9199			Adj. R-squared	0.9471		
Durbin-Watson	0.7360			Durbin-Watson	1.2721		
Akaike Info Crit.	-0.6956			Akaike Info Crit.	-1.0864		
Schwarz Crit.	-0.6094			Schwarz Crit.	-0.9571		
F-statistic	425.6489		0.0000	F-statistic	332.1488		0.0000
Chow Breakpoint Test: 2008:12							
F-statistic	12.4347		0.0001				
Log likelihood ratio	20.8605		0.0000				

Table I continued

Section: I.d	**Dependent Variable IB_TP, Islamic Banks' Total Provision Ratio**						
Panel A: Variable	Coeff.	t-Stat.	Prob.	**Panel B**: Variable	Coeff.	t-Stat	Prob.
AB_TP	0.2668	1.6736	0.1029	AB_TP	1.1282	6.1472	0.0000
				DUMMY	-82.9007	-5.9793	0.0000
Constant	162.8315	2.8336	0.0075	Constant	-115.5889	-1.8633	0.0708
Regression Statistics							
Adj. R-squared	0.0464			Adj. R-squared	0.5148		
Durbin-Watson	0.1480			Durbin-Watson	0.6644		
Akaike Info Crit.	10.0453			Akaike Info Crit.	9.3941		
Schwarz Crit.	10.1315			Schwarz Crit.	9.5234		
F-statistic	2.8011		0.1029	F-statistic	20.6288		0.0000
Chow Breakpoint Test: 2008:12							
F-statistic	24.2072		0.0000				
Log likelihood ratio	33.6452		0.0000				
Section: I.e	**Dependent Variable IB_CR, Islamic Banks' Cash Reserve Ratio**						
Panel A: Variable	Coeff.	t-Stat.	Prob.	**Panel B**: Variable	Coeff.	t-Stat	Prob.
AB_CR	0.5414	17.9498	0.0000	AB_CR	0.5269	6.4934	0.0000
				DUMMY	-0.0005	-0.1931	0.8480
Constant	-0.0065	-3.7219	0.0007	Constant	-0.0055	-1.0132	0.3179
Regression Statistics							
Adj. R-squared	0.8967			Adj. R-squared	0.8939		
Durbin-Watson	1.4290			Durbin-Watson	1.4227		
Akaike info Crit.	-8.8704			Akaike Info Crit.	-8.8188		
Schwarz Crit.	-8.7842			Schwarz Crit.	-8.6895		
F-statistic	322.1937		0.0000	F-statistic	156.8075		0.0000
Chow Breakpoint Test: 2008:12							
F-statistic	2.5544		0.0926				
Log likelihood ratio	5.31952		0.0700				
Section: I.F	**Dependent Variable IB_LA, Islamic Banks' Liquid Assets Ratio**						
Panel A: Variable	Coeff.	t-Stat.	Prob.	**Panel B**: Variable	Coeff.	t-Stat	Prob.
AB_LA	1.1765	7.2888	0.0000	AB_LA	0.6979	4.5287	0.0001
				DUMMY	-0.0329	-5.1733	0.0000
Constant	-0.0135	-0.1840	0.8551	Constant	0.2153	3.0232	0.0047
Regression Statistics							
Adj. R-squared	0.5849			Adj. R-squared	0.7580		
Durbin-Watson	0.6983			Durbin-Watson	1.0465		
Akaike Info Crit.	-4.9519			Akaike Info Crit.	-5.4672		
Schwarz Crit.	-4.8657			Schwarz Crit.	-5.3379		
F-statistic	53.1270		0.0000	F-statistic	58.9547		0.0000
Prob(F-statistic)							
Chow Breakpoint Test: 2008:12							
F-statistic	13.1343		0.0001				
Log likelihood ratio	21.7531		0.0000				

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