

ISLAMIC BANK FINANCING, FINANCIAL CRISIS AND MONETARY POLICY IN MALAYSIA: AN INTERACTION IN THE LONG RUN EQUILIBRIUM

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Abstract

Global Financial Crisis (GFC) in 2007-2010 has given a big impact to the financial institution and banking institutions worldwide. A wide array of GFC impact is experienced by the operating and financial performance in banking institutions. Islamic banks however have raised the public interest to be relatively unaffected by the GFC. There are studies which found that GFC has less effect to Islamic banking system. In fact it is claimed to be "immune from the ravages of the GFC". The question arises whether the claim is also true in the case of the Islamic bank financing. Thus, this study attempts to assess the reaction of Islamic bank financing to the Global Financial Crisis (GFC) through the monetary policy action taken by the government in Malaysia. Using the time series data the investigation will benefit from the quarterly data spanning from 1995 to 2013. A model is constructed and focusing on the interaction term of monetary policy and global financial crisis. In analyzing the impact and a long run relationship between variables, Johansen's co-integration test is applied. Finding shows that Islamic bank financing and the interaction term of global financial crisis are co-integrated and, hence, a long-run equilibrium relationship exists between them. This finding also implies despite the prior claims that Islamic bank financing is unharmed with the Global Financial Crisis (GFC), the reaction of Islamic bank financing in Malaysia is sensitive towards the global financial crisis but through monetary policy action taken by the government.

Keywords: Financial crisis, interaction term, Islamic bank financing, monetary policy.

INTRODUCTION

The term “financial crisis” is broadly defined as disruptions in financial markets causing constraint to the flow of credit to families and businesses and consequently having adverse effect on the real economy of goods and services (Hassan & Kayed, 2010). In 2007, the global financial crisis (GFC) has occurred in US due the subprime lending. This is one of the most important financial crisis and exceptional one among the other financial crises. This is due that it has impacted the financial institution in particular banking institutions worldwide. In fact, a wide array of impacts to the operating and financial performance of the banks has occurred globally (Smolo & Mirakhor, 2010; Kassim & Majid, 2010). Thus, number of fundamental questions on banking institutions has been raised. GFC has vividly highlighted the importance of the stability and performance of banking sectors and bank’s role of providing credit for economic activity.

In Malaysia, during the GFC Bank Negara Malaysia (BNM) has easing the monetary policy as one of the measures taken to overcome the crisis. This is a crucial condition for bank lending as it will change the bank lending supply. With the existence of Islamic banks, the measures of monetary policy taken also can affect the bank financing supply in Islamic banks. In general the GFC should indirectly affect the Islamic bank financing. Due to the crisis, the Islamic banks have raised the public interest as they are said to be more relatively affected by the financial crisis. Even, recent studies such as Abdulle and Kassim (2012) and Shafique, Faheem and Abdullah (2012) found the Islamic banks have been unhurt by GFC.

There are number of studies show the impact of financial crisis on banks and a number of experts in Islamic banks have even claimed that Islamic banks are either less or not affected by the GFC (Smolo & Mirakhor, 2010; Kassim & Majid, 2010 and Ahmed, 2010). This is due to the nature of the Islamic bank’s product contract. Hassan and Dridi (2010) stated there are four major impacts of financial crisis on Islamic banking such as profitability, credit growth (making more credit available), asset growth and external rating. Nonetheless, there is still lack of research efforts to establish a conclusive relationship of financial crisis and bank financing with the interference of monetary actions taken by the government. This is undeniable claim as Oii (2008) for example has highlighted the existence in Islamic financing has changes the asset structure where they are less sensitive to policy rate changes since a greater proportion of existing financing are not directly linked to changes in cost of fund. Besides that, previous studies solely emphasize on monetary policy indicator or dummy variable of Global Financial Crisis (GFC). Hence, this paper attempts to fill this gap to empirically assess the reaction of Islamic bank financing to Global Financial Crisis (GFC) through the monetary policy taken by the government.

The remaining of the paper is organized as follows. Section 2 discusses the literature review. The methodology under consideration will be highlighted in section 3. Section 4 discusses result and discussion. Lastly, section 5 offer conclusions.

LITERATURE REVIEW

There is substantial literature in the area monetary policy and bank lending for developed countries such as Bernanke and Blinder (1992), Gertler and Gilchrist (1993), Kashyap and Stein (1995), Kishan and Opiela (2000), Brimiss, Kamberogiou and Simigiannis (2001). These studies found evidences supporting the monetary policies and its' effect on bank lending. While, Juurikalla, Karas and Solanko (2011), Amidu (2006), Preteanue Podpiera (2007), Mohsin (2011) and Salmanov, Victor and Olga (2015) have carried out the recent studies on the impact of monetary policy. Studies by Juurikalla et al. (2011) and Salmanov et. al for example tested different monetary policies on bank lending using quarterly data in Russia. Both utilize the method of GMM to indicate the effectiveness of monetary policy indicator on bank lending. Meanwhile, Amidu (2006) uses the OLS to examine bank lending which has been constrained by monetary policy in Ghana. Contrary to Juurikalla et al (2011) and Salmanov et. al (2015), the results reveal that the monetary policy actions by changing the central bank's prime rate fail to produce any significant effect on bank lending.

In the case of Malaysia, Abdul Karim et al. (2007) tested the relationship between bank lending and monetary policy easing in Malaysia utilizing a VAR model. The study demonstrates that monetary policy easing will increase the bank lending to all economic sectors. Unfortunately the studies on Islamic bank financing and the monetary policy are scarce. Within the limited existing studies, there are studies done merely to prove the existence of Islamic financing channels for monetary transmission in Malaysia (Said and Ismail, 2007; Sukmana and Kassim, 2010). These studies found evidence in documenting the presence of Islamic financing channel for monetary transmission in Malaysia.

Concentrating on the global financial crisis, earlier works (Hasan & Dridi, 2010; Abdulle & Kassim, 2012; Shafique et. al, 2012 and Hidayat & Abduh, 2012) have explored several dimensions of Islamic banks behavior during financial crisis. Hasan and Dridi (2010) reveal that the recent global financial crisis affected Islamic banking institutions differently than conventional banks. They discover that Islamic bank's business model helped to reduce the bad impact on profitability during the GFC. On the other hand, studies by Abdulle and Kassim (2012), Shafique et. al (2012) and Hidayat and Abduh (2012) show the Islamic banks are more stable during global financial crisis. Shafique et al. (2012) conceptually analyzing the Islamic financial system during financial crisis. Using the reports, past records, famous authors and expert views, the study concludes there is less impact of global financial crisis on Islamic bank. While Hidayat and Abduh (2012) using a panel OLS in Bahrain found there is no significant impact to influence the Islamic bank performance during the crisis period.

In another study, Abdulle and Kassim (2012) revealed that Islamic banks in Malaysia are less exposed to risks compare to the conventional counterpart in the global financial crisis. The study on global financial crisis and its' impact on Islamic bank financing has

been carried out by Zuriyati and Roziani (2014). Dummy variable is used to represent the global financial crisis. In parallel with other studies, Zuriyati and Roziani (2014) found that GFC has not affected the bank financing in Islamic banks. Nonetheless, Uppal and Mangla (2010) reveal a contrary result. They examined the experience of Islamic banks of two countries (Pakistan and Malaysia) and found that the Islamic banks in the country “were not immune from the ravages of the global financial crisis” to the financial crisis. The study use average efficiencies by comparing pre and post financial crisis.

METHODOLOGY

This study attempts to assess the reaction of bank financing behavior and the central bank monetary policy indicator with the effect of Global Financial crisis (GFC). Thus, the basic model is applied from loan demand (L^d) and supply (L^s) function. The functions are written respectively as follows:

$$L_t^d = \alpha_0 + \alpha_1 GDP_t + \alpha_2 INT_t + \varepsilon_t \quad (1)$$

While the loan supply equation will be;

$$L_t^s = \alpha_0 + \alpha_1 DEP_t + \alpha_2 INT_t + \alpha_3 MP_t + \varepsilon_t \quad (2)$$

In equation (1), bank faces a loan demand (L^d) that depends on economic performance/activity (GDP) and the interest rate (INT). The quantity of loan demanded is a positive function of economic performance (GDP) and negatively function with interest rate (INT). While in equation (2) shows the loan supply by bank i (L^s) is a function of the available amount of deposits (D), interest rate (INT) and monetary policy (MP).

Plugging in all the determinants of loan supply and demand, the equilibrium condition in the lending market can be written as;

$$L = \alpha_0 + \alpha_1 GDP + \alpha_2 INT + \alpha_3 DEP + \alpha_4 MP + \varepsilon_t \quad (3)$$

In this study however, a modification has been done to suit the purpose of the study by substituting bank lending to Islamic bank financing. Thus, the model is estimated as;

$$FIN_t = \alpha_0 + \alpha_1 GDP + \alpha_2 INT + \alpha_3 DEP + \alpha_4 MP + \varepsilon_t \quad (4)$$

Equation (4) indicates that FIN_t , the amount of financing in period t is depending on gross domestic product (GDP), the available amount of deposits (DEP) and the monetary policy (MP).

GDP is the most direct measure to reflect performance in the economy. Economic conditions play a major role in determining Islamic bank financing in Malaysia. This was particularly true as the volume of Islamic bank financing was significantly affected by the financial turmoil caused by the Asian financial crisis of 1997 (Adebola et al., 2011). The inclusion of GDP is also to control the demand side effects and the business cycles in the economy.

Deposit is another factor which influences Islamic bank's willingness to supply financing (Sukmana & Kassim, 2008; M. Yusof et al. 2008; Kassim et al., 2009 and Kassim, 2008). Typically banks will rely solely on deposits as a source of funds which induces more financing supply sensitivity. Any additions or subtractions of deposits may influence future financing activities.

Interbank rate (KLIBOR) is chosen to represent monetary policy indicator. This is due to its strong indication and direct movement. The variable chosen is in line with previous literature such as Ghazali and Abdul Rahman (2005), Said and Ismail (2008), Sukmana and Kassim (2008) and Yusof et al. (2008). Besides that, KLIBOR has been used as a benchmark in Islamic financial systems in Malaysia. This variable should enter negatively to conclude the bank financing will reduce its financing after the monetary easing. Whereas, the global financial crisis (GFC) is represented by the crisis happened in 2007 to 2010. Therefore, a new equation which has been slightly modified from the loan and supply model is shown below;

$$FIN_t = \alpha_0 + \alpha_1 GDP + \alpha_2 INT + \alpha_3 DEP - \alpha_4 MP * GFC + \epsilon_t \quad (5)$$

The interaction of monetary policy indicator with the global financial crisis is shown in equation (5). Interaction implies that the impact of the global financial crisis can be realized through monetary policy indicator on the Islamic bank financing.

In order to obtain the long run equilibrium, the estimation model (equation 5) is tested using the cointegration test. The basic cointegration is specified as follows;

$$Y_t = \alpha_0 + \alpha_1 X_t + e_t \quad (6)$$

Where Y_t and X_t represent the dependent variable and independent variable. While e_t is the random error term, α_0 and α_1 are the intercept and slope coefficients respectively. Nonetheless, it is imperative to conduct the unit root test before the test long run equilibrium is conducted. This is to determine the order of integration of each series, that is to establish whether the data is stationary or non stationary. When the underlying time series are stationaries, then the classic t and F test as well as R^2 are reliable measures for the model. If the data are non stationaries, the problem of spurious regression would plague the model. Thus, this study follows the standard procedure of unit root testing by employing Augmented Dicky Fuller (1979, 1981). In order to determine the stationary property of the data, a univariate analysis of the four time series variables (FIN, GDP, INT

and DEP) are carried out by testing the presence of a unit root. The interaction of dummy variable of global financial crisis and monetary policy (MPC*GFC) is not included in the stationary test as it is almost similar representation of dummy variable. Dummy variable is argued by John and Nelson (2007) to be exempted from the unit root test.

In analyzing the impact of global financial crisis to the bank financing behavior in the long run equilibrium, quarterly data set covering from 1995 to 2013 with 76 numbers of observations will be applied. The sample is restricted to this time span in order to get uniformness of the data set and considering the availability of the data. Data is obtained from BNM Monthly Statistical Bulletin of Bank Negara Malaysia. All variables except interest rate are transformed into natural logarithm.

EMPIRICAL RESULTS

The summary results of the ADF tests for stationary properties are presented in Table 1. Using 1% significance level, all variables (FIN, GDP, INT and DEP) are lower than critical value therefore it fails to reject the null hypothesis of non stationary at the level form. Conversely, all variables are greater than critical value at their first difference form, meaning the null hypothesis of non stationary can be rejected in 1%, 5% and 10% levels. It can be concluded that all variables are $I(1)$ or integrated of order 1.

Table 1: Result of Augmented Dicky Fuller Unit Root Test

Variable	Level $I(0)$	First differences $I(1)$	ADF Value	Order of integration
FIN	3.07	6.95	3.53	1
GDP	1.95	8.21	3.53	1
DEP	0.89	7.63	3.53	1
INT	1.07	8.47	3.53	1
MPGFC	2.32	6.93	3.53	1

Johansen cointegration test is applied in order to find whether the variables are co integrated. This procedure followed Johansen (1988) and Johansen and Julies (1990) who developed the cointegration method in order to obtain the long run relationship among the series. Result from the Johansen cointegration test is demonstrated in Table 2. The null hypothesis of no cointegrating vector ($r=0$) is tested against the alternative hypothesis ($r=1$). From the analysis the maximum eigenvalue statistics shows the null hypothesis can be rejected at 5% level since trace statistics = 83.6163 is greater than the critical value of 69.8189. Therefore, the finding indicates the presence of one cointegrating equation.

Table 2: Johansen Cointegration Test

Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value
None *	0.4925	83.6163	69.8189
At most 1	0.3995	42.9210	47.8561
At most 2	0.1372	12.3244	29.7971
At most 3	0.0497	3.4680	15.4947
At most 4	0.0067	0.4079	3.8417

Trace test indicates 1 cointegrating eqn(s) at the 0.05 level

* denotes rejection of the hypothesis at the 0.05 level

**MacKinnon-Haug-Michelis (1999) p-values

The existence of cointegration implies variables are cointegrated and there is a meaningful long run relationship. Testing with provision of four lags, the model exhibits no serial correlation and no normality problem. Thus the study has proceeded to the next step to find out the magnitude of the long run relationship. Estimated long run equilibrium of cointegration model is as follows;

$$\text{FIN} = 0.783429\text{GDP}^{**} - 8680.76\text{INT}^{**} + 0.0257\text{DEP} - 20632.86\text{MP}*\text{GFC}^{**}$$

(0.0737) (3225.47) (0.0235) (7195.40)

* Std error in the parenthesis

** Denote significant at 0.01 level of significance

The macroeconomic variable of GDP performs well in explaining bank financing. The GDP is significant at 1% alpha and positively affecting FIN. The higher the GDP will result in the changes in Islamic bank financing. In other words the Islamic banks adjust their financing behavior in response to the signal of GDP factors, such that positive signals make banks more favourably disposed to bank financing and vice versa. While, interest rate (INT) is negatively influence the Islamic bank financing (FIN) and at 1% alpha level of significance. Interest rate shows a strong relationship with Islamic bank financing with the changes of 1% interest rate will lead to the changes of 8680.76% of Islamic bank financing. Note that eventhough the Islamic bank financing is not using the interest rate in the financing system but interest rate is still used as reference rate. The variable DEP in the model which indicates as a source of funds and induces more financing is in expected sign however it is insignificant in any level of significance.

The major highlight in this study is the interaction of monetary policy indicator with the Global Financial Crisis (MP*GFC). Finding shows the interaction of GFC and monetary policy indicator is found to be highly significant. This interaction is significant at less than

1% alpha in the long run equilibrium. The negative magnitude also indicates to follow the hypothesis. The asymmetric effect of monetary policy indicator is captured by significant coefficient for the interaction term. Finding reveals that bank financing will react to the GFC through the monetary policy indicator. There is significant change of Islamic bank financing associated with GFC and monetary policy indicator. Thus, the finding is not in line with the common believes and previous literature (e.g Abdulle and Kassim, 2012; Shafique et al., 2012; Hidayat & Abduh, 2012 and Zuriyati & Roziani, 2014) that the dimensions of Islamic banks are unharmed with the GFC. One of the examples which can explain the differences of the result obtained is the used of dummy variable in Zuriyati and Roziani (2014). This implies that Islamic bank financing will not directly influenced by the crisis but another interacting factor might be the cause of the changes in the Islamic bank financing.

Taking into consideration the easing of monetary policy action taken by the government during the global financial crisis a contradict result is obtained. A significant impact of the crisis is found on Islamic bank financing and the government plays a major role in changing the monetary policy during the crisis. The easing of monetary policy leads to lower bank financing during the crisis. Therefore, the result obtained is consistent with Uppal and Mangla (2010) indicating that the Islamic banks in the country were not immune from the ravages of the global financial crisis. One of the reasons that might contribute to this finding is due to the Islamic bank financing which is still relying on interest rate as monetary policy indicator. Besides that the Islamic bank financing is just a small portion in the whole bank lending industry in Malaysia. Thus, any actions taken by the government resulting by the global financial crisis will create a variation to the Islamic bank financing.

CONCLUSION

The study is aimed to assess the reaction of Islamic bank financing to the global financial crisis through the interaction with the changes of monetary policy indicator. In the long run the variation is relatively stronger for bank financing as this global financial crisis is followed with the changes in monetary policy action. This result is not in accordance with the typical outcomes from the previous studies that Islamic bank is unharmed with the crisis. Thus, results provide an implication that in analyzing the impact of global financial crisis, consideration should be taken to include and interact with another factor that might influence over the sensitiveness of the reaction in Islamic bank financing.

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