The response of monetary policy shocks on Islamic bank deposits: evidence from Malaysia based on ARDL approach

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ABSTRACT

As much as it is important in a conventional system, monetary policy also plays a critical role in governing the Islamic economic system. However, in a dual banking system, things may have to be designed and devised differently to cater to the needs of both. Thus, assessing the impact of monetary policy shocks on the Islamic banking system is the key to understanding the addition of the industry towards financial stability and the extent of quality of the industry. The purpose of this paper is to initially revisit the issue of monetary policy shocks on the Islamic banking system, in the case of Malaysia. Our paper extends the previous study by using the most recent monthly data available which is from the year 2010 to the year 2016. Additionally, we incorporate the use of a robust time series technique, ARDL, and paired our analysis with an analysis of variance decomposition to strengthen our findings. Based on the results, we find evidence that despite being in the industry for almost half a century, the monetary policy shocks still have an influence on the Islamic banking deposit in Malaysia. Additionally, the Islamic banking deposits are also highly influenced by the level of inflation which comes out to be the most exogenous variable amongst all. An important implication from our analysis is that it is very critical for the central bank to help maintain the resiliency of the system by designing an appropriate monetary policy that could cater to both system and start devising legitimate risk management procedures that is applicable to these Islamic institutions.

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INTRODUCTION: ISSUE MOTIVATING THE STUDY

In 1963, the establishment of Ghamr Savings Bank in Egypt has marked the initial experiment in the modern Islamic Banking. For the past 40 years, Islamic banking and finance have emerged as one of the biggest and closest alternatives to conventional finance due to its so-called risk-sharing nature that has managed to attract both Muslims and non-Muslims consumers. Having a monetary system that relies upon interest-free assets, the industry is claimed to be more stable than the conventional ones as it curbs the issue of exploitation of wealth and eliminates the element of speculation in the system. The proponents of Islamic banking submits to the idea that the risk-sharing nature between the banks and depositors allows a greater absorption of external shocks as bank's financial losses are partially absorbed by its clients, i.e., depositors.

From a theoretical perspective, the role of Islamic banking differs from its conventional counterparts because of the prohibition of Riba. El-Gamal (2006) states that this nature has become a basic paradigm of Islamic banking that cannot be altered. Money, as a medium of exchange, cannot earn any return on itself leading to the fact that return should always be linked to a real economic activity. With that, any money deposited has to be used for real investment activities to ensure the legitimacy of the profit gained by depositors. Thus, the profit and loss sharing paradigm is the main unique feature, distinguishing Islamic banking from its counterparts. Under the PLS paradigm, the assets and liabilities of a bank should be assembled in a way that allows bank to share profits and losses with borrowers, which will subsequently share profit and losses with depositors.

The past few decades has witnessed a considerable amount of literature in the area of Islamic banking and finance. While a lot of empirical literatures have managed to give answers on issues regarding product development and viability of Islamic banking, lack of attention has been seen to be put on the area of monetary policy from an Islamic banking perspective. With the rapid growth of the industry, especially after the global financial crisis, and the nature of Islamic finance that is predicted not to be influenced by fluctuations in interest rate, some series of important questions can be raised in regard to the viability of monetary policy in a dual banking system. Shall the Islamic banking system get affected? Although in theory, both Islamic and conventional banking are governed by different philosophical foundations, the fact that they operate hand in hand may cause these two to be somehow related. Taking Malaysia as an example, the changes in the

Overnight policy rate set by the Central Bank can be argued to affect the Islamic banking deposits as well, due to the fact that the Islamic financial system is governed and operate under the same macroeconomic environment as its conventional counterpart which is dominant in the country.

Following the lack of recent findings relative to this issue, it is very critical for a country with dual banking system to verify the influence of changes in monetary policy on the Islamic banking deposits as the demand for the system has been increasing and has the need to be improved over years. The findings may help in engraving the paths for better policies than can consequently enhance the economy of a nation thus fulfilling the mission of Malaysia to be the center of Islamic Finance hub worldwide. This paper seeks to contribute to the debate from an empirical perspective with the focus being on Malaysia. Two main reasons for Malaysia to be chosen as a country of interest is because it has a full-fledged banking system that operates alongside with major conventional banking system, hence, have the ability to provide us with more genuine result. Second reason is attributable to the fact that Malaysia was reported as having the largest Islamic Finance market in the world; thereupon serve as an ideal representative of an Islamic banking practice in general.

While other studies have focused on the period before and during the financial crisis, we will instead put our focus on recent monthly data over the period of 2010-2016, focusing specifically on Malaysia. The year is chosen starting from 2010 to ensure that the cofounding influence of the global financial crisis is taken care off. Additionally, a robust advanced time series co-integration method, called the Autoregressive Distributed Lag (ARDL) is employed. Our aim of this present study is to reinvestigate the impact of monetary policy shocks on Islamic banking deposits using the most recent data. For this purpose, we adopted several variables based on relevant theoretical literatures in which amongst them include money supply, gross domestic product, and level of inflation. In addition, we are also keen to know the resiliency of Islamic banks towards monetary policy shocks, which specifically is the change in interest rate. Our motivation for this objective is triggered by the fact that some studies has found global financial crisis to have increase the demand for Islamic Banking due to its interest-free and risk-sharing nature. Thus, we are keen to know as to whether the finding is as well true using country-level data with a country of dual banking system. Being based on these objectives, we hope to shed lights on ways regulators and policymakers in Malaysia to achieve a more resilient Islamic banking system, that can not only

help stimulates growth, but also improve the confidence of its stakeholders towards this religious based finance.

The following sections of this paper are organized as follows: Section 2 provides an overview of the Islamic banking system in Malaysia; Section 3 discusses the theoretical underpinnings related to the issue being discussed; Section 4 provides a brief review of previous literature; Section 5 outlines the data and methodology; Section 6 discusses the estimation results and findings. Finally, in section 7, we shall conclude our paper with the summary of the main findings and provide some useful implications.

OVERVIEW OF ISLAMIC BANKING IN MALAYSIA

The existence of Islamic Finance in Malaysia can be traced back as long as the establishment of Lembaga Urusan Tabung Haji LUTH) in 1969. Although it cannot be classified as a financial institution LUTH was the pioneer of many sharia-based transactions in Malaysia that manages the funds of Muslims going on pilgrimage. Despite it being one of the founders of Islamic financial transactions in Malaysia, LUTH was lack in terms of financial innovation in its scheme causing it to remain stagnant. With an increasing demand from Muslims consumer for a banking and financial transactions to be executed on a Sharia basis, in 1983, Bank Negara Malaysia BNM) has issued an Islamic Banking Act which subsequently leads to the establishment of the first Islamic bank in Malaysia, Bank Islam Malaysia Berhad. This marks as the initial milestones for the development of Islamic finance in Malaysia which is dominated mainly by the banking sector.

In further enhancing the development of Islamic banking, BNM again introduces a policy, named Interest-Free Banking Scheme, allowing existing banking institutions to offer Islamic banking products at any of their branches. Such action done by the central bank has caused Malaysia to become one of the countries that first implement a dual banking system, whereby the Islamic and conventional system co-exist under the same financial regulatory framework. In 1999, the concept of Islamic banking subsidiary was introduced, allowing financial institutions with Islamic window operations to convert into a full-fledged Islamic bank in Malaysia. Among the banks that have participated in joining the hype were Al-Rajhi Bank and Kuwait Finance House.

Regardless of Malaysia being one of the leaders in Islamic Finance, it is worth noting that the banking industry in the country is still being dominantly conquered by the conventional banking,

where Islamic banking is only about one-fifth of the total industry (Karem, 2014). Obviously, this evidences no level playing field, in which the situation gives more favor to the conventional ones. For example, the conventional banks can do whatever Islamic banks are doing through its subsidiaries and windows, yet the Islamic banks have limited ability to imitate the practice of conventional banks. With that, Islamic banks may have the tendency to duplicate the products of its conventional peers for the sake of maintaining its competitiveness. In addition, general policies set for the financial system in the same macroeconomic environment are similar regardless of the banking types. Such action may be the reason for the declination of the Islamic banking market shares over the years. Nevertheless, on a brighter side, there has been a continuous effort from the government and central bank in bringing the industry u to a higher level. The establishment of academic institutions that focuses on Islamic finance knowledge is hoped to be able to bring some added value to the industry in the future, thus being able to allow Islamic banking and finance to stand on its own feet with the unique features it possesses.

THEORETICAL UNDERPINNINGS

Generally, monetary policy is a tool used by the central bank in managing the liquidity of an economy. The importance of a great monetary policy has been proven to help sustain the well-being of an economy, hence provide general trust in one nation's currency. In implementing a suitable monetary policy, especially in the case of Malaysia who practices a dual banking system, understanding the monetary transmission mechanism may serve as a critical prerequisite Thus, this section lays out the theoretical underpinnings related to such mechanism. Technically, the mechanism consists of two main channels, mainly credit channels and interest rate channel

The credit channel acknowledges the impact of monetary policy on economic activity through changes in amount of credits issued by banks to firms and borrowers. The credit channel can further be divided into two, namely, the bank lending channel and the balance sheet channel. However, the bank lending channel is the key determinant of a country's financial structure. The fundamental assumption behind the role of credit channel is the role of banks as an ultimate source of funds in executing any business activities. Changes in monetary policy shall affect the supply of loanable funds available to banks, which in turns impact the total amount of loans they can issue. As a consequent, firms that have full reliance on banks' credit can be badly affected, which

increase the external finance premium and reducing real economic activity in an economy. The IMF reports that the credit channel tends to be more powerful for banks with less liquid balance sheets. This happens when the financial sector in an economy is dominated by small banks in which consumers have limited access to nonbank funding sources. Banks with high liquidity tends to weaken with the bank lending channel.

The second channel is the interest rate channel which serves as a complement to the bank lending channel. While the latter affect the supply side of an economy, changes in the former shall impact the aggregate demand of an economy. This model stresses on the effect of monetary policy on the real interest rate through the underlying assumption of wage and price stickiness. It postulates that an increase in short-term nominal interest rate leads to an increase in the long-term nominal interest rate which subsequently affects the real rate interest and cost of capital. For example, an increase in the interest rate reflects a higher cost of capital which causes the bank to pay higher interest rate in order to attract new deposits. Though theoretically, a higher interest rate increases the demand to save in deposits, in an Islamic banking system, such situation can be detrimental due to the prohibition of Reba. Thus, there is always a possibility for depositors to switch account under an Islamic banking system. Also, if the bank practices a fixed profit rate regime, increasing the interest rate in Islamic banks may reduce the bank profit margin.

As mentioned earlier, in Malaysia, the banking system is largely dominated by the conventional ones. Hence, for this channel to work best under the Islamic financial system, the Islamic banks have to depend on the central bank's capacity as one of the main suppliers of liquidity for Islamic banks. Additionally, it also depends on the capacity of Islamic banks to shift their supply of financing to changes in reserve balances at the central bank.

Based on theory mentioned, we to shed some lights as regards to the effect of monetary policy mechanism on the Islamic banking system, specifically, the Islamic banking deposits in a dual banking system.

LITERATURE REVIEW

The viability of an Islamic financial system has so long been a topic of interest among researchers. Over the past decades, several theoretical and empirical arguments have been put forward with regards to the resiliency of Islamic banking deposit against shocks, measured by different

macroeconomic variables. Generally, in a conventional system, deposits, which can alternatively be perceived as savings, is believed to be influenced by certain measures of monetary policy. This has been portrayed in some conventional literature. Using disaggregated data on bank balance sheets, Kashyap and Stein (1994) states that a contraction in monetary policy does have a detrimental effect on the core deposits of banks regardless of the size classes. His result supported the bank lending channel discussed above. When the Fed puts constraints on deposit from the system, banks' lending behavior are affected, thus leads to the investment spending being affected as well. Similarly, Hoffman et al. (2015) findings also show a reduction in "deposit endowment effect" on bank's profitability when the interest rate are being reduced. Their results are robust even after taking control the different business cycles and bank-specific characteristics.

As for the Islamic banking system, mixed result has been found among researchers. By focusing on Islamic banks in Indonesia, Kasri and Kassim (2009) has adopted the Vector Autoregressive VAR) model to analyze the relationship between interest rate and level of saving in Islamic banks. Her result shows that a higher Islamic deposit is significantly correlated with higher rate of return and lower interest rate. This aligns with the findings of Kassim and Majid (2009) for Malaysia. By focusing on the period from January to December 2006, her result reveals a positive impact of monetary policy changes on Islamic banks' balance sheets. Both findings were further supported through the work of Sukmana and Kassim (2010) who uses a co-integration test, impulse response function, and the variance decomposition analysis instead. Their analysis which includes the variables Islamic deposits, Islamic financing, Industrial Production Index, and overnight policy rate does provide evidence for the sensitivity of Islamic bank deposits to interest rate shocks.

In a more recent work by Akhatova et al. (2016), the response of Islamic banks to monetary policy shocks is evaluated by employing the structural vector autoregression (SVAR) specification. From the result obtained, they discover that the response of Islamic banks toward interest rate hikes is immediate as compared to its conventional counterparts which were delayed. Specifically, Islamic financing drops immediately following an increase in the interest rate shocks. However, Mushtaq (2017) finds out the opposite. Using the panel ARDL approach on 23 Muslim countries, he reports a non-significant relationship between Islamic banking deposit and changes in interest rate, leading to the fact that Islamic banks are resilient towards shocks. His finding aligns with Mobin and Masih (2014).

Nevertheless, we realized that most of these studies were done by taking the sample period before and during the global financial crisis. Recent findings on this issue are scarce. As we believe this is one of the most important issues in addressing the viability of Islamic banking system, our analysis shall be different in a way that we will be using the most recent data starting from 2010 to avoid the influences of the global financial meltdown that may potentially affect the global Islamic banking market.

DATA AND METHODOLOGY

This study uses the latest monthly time series data which are extracted from BNM's monthly statistical bulletin. We decided to use the period after financial crisis, which is from January 2010 till December 2016. Table 1 below provides a brief overview of the variables used in our analysis.

Table 1: Definition of Variables

Variable	Definition
Islamic Bank Deposits IBD)	Measure the total of Islamic banking deposit in the overall Malaysian Islamic banking system
Overnight Policy Rate	Measure the interest rate as well as serve as an indicator for monetary policy
Money Supply	The amount of M2 money available in circulation
Gross Domestic Products	Economic growth measured by the Industrial Production Index
Consumer Price Index CI)	A measure of inflation

In carrying out our co-integration analysis, this study adopts the use of Auto-Regressive Distributive Lag (ARDL) method or also known as the bound testing approach proposed by Pesaran et al. (2001). As compared to other co-integration approaches, this technique has several advantages. First, ARDL is applicable irrespective of whether the regressors are stationary or non-stationary. However, an important thing to note that none of the explanatory variables should be higher than the I2 orders as such presence may deem the technique to be inefficient. Second, it is

suitable and robust for a small size data sample to estimate and test the hypotheses on the long run coefficients. Additionally, a simple linear transformation allows a dynamic error correction model (ECM) from ARDL. The ECM integrates the short-run dynamics with long-run equilibrium without losing the long-run information.

The ARDL test is composed of two main stages. However, before applying the technique, it is critical to test the stationarity of the variables involved. Although the unit root test is not required for ARDL testing, doing so may be helpful to ensure the suitability of the econometric method being used. ie, ensuring that variables are not integrated at order two or higher. Having any variables integrated at an order to or higher will cause the F-statistics generated by Pesaran et al. (2001) to be invalid. In testing the stationarity of variables in this study, three test has been carried out - the ADF test, PP test, and KPSS test.

Once stationarity has been tested, the first stage involves the testing for an existence of a long-run relationship between the variables. This is done by computing the F-statistic to test the joint significance of the lagged levels of the variables in the error correction form of the ARDL model. The computed F-statistic is then compared to two asymptotic critical values as presented by Pesaran et al. (2001). If the F-statistic happened to fall below the lower critical value, the null hypothesis of "no long-run relationship" is accepted regardless of the variables being I(1) or I(0). Conversely, if the F-statistics goes beyond the upper critical value, the null hypothesis of 'no long-run relationship' is rejected despite the variables being I(1) or I(0). However, if the test statistics falls in between the two critical values, the result is said to be inconclusive. In relation to the implications of the F-statistics, if it happens that all the equations to be insignificant, then there exist no long-run relationships among the variables. Otherwise, if there is at least one significant F-statistic in the error-term equation, we can say that the long-run relationship between the variables is present.

Once the requirement for the first stage has been fulfilled, i.e., a long-run relationship between variables has been established, the second stage which involves the estimation of the long-run coefficients, is performed. Consequently, in order for us to estimate the adjustment coefficients of the error-correction term, corresponding error-correction term is estimated. A value of zero implies that there is no long-run relationship between the variables, while a value that falls between the ranges of 0 to -1 shows the existence of partial adjustment. A positive value implies the system is

moving away from the equilibrium in the long run, and conversely, a value smaller than -1 indicates the model over adjusts in the current period. The section follows discusses the result obtained from the data that was employed in this analysis.

EMPIRICAL RESULTS AND DISCUSSION

We begin our analysis by first assessing the stationarity of the variables used. A stationary series has a mean that tends to return, a finite series, shocks that are transitory, and autocorrelation coefficients dying out as the number of lags increases. On the other hand, a non-stationary series has an infinite variance that grows over time, permanent shocks, as well as autocorrelations which tend to be unity. Table 2 below depicts the unit roots tests results.

Table 2: ADF Test

Variable	Test Statistic	Critical Value	Implication
Variables in Level Form			
LIBD	-0.59571	-3.4648	Non-Stationary
LONR	-2.9831 - SBC	-3.4648	Non-Stationary
	-3.0509 - AIC	-3.3767	
LMS	-1.0772 -AIC	-3.4672	Non-Stationary
	-0.73763 – SBC	-3.4648	
LGD	-4.6953	-3.4648	Stationary
LCPI	-3.3034 - AIC	-3.4672	Non-Stationary
	-2.8911- SBC	-3.3767	
Variables in Differenced Form			
DIBD	-5.2527	-2.8585	Stationary
DONR	-7.3277	-2.8585	Stationary
DMS	-3.3622	-2.7696	Stationary
DGD	-6.9025 - AIC	-2.8122	Stationary
	-8.8886 - SBC	-2.8585	
DCI	-7.8107	-2.8585	Stationary

Table 3: PP Test

Variable	Test Statistic	Critical Value	Implication
Variables in Level Form			
LIBD	-0.53032	-3.5508	Non-Stationary
LONR	-4.6980	-3.5508	Stationary
LMS	-0.18063	-3.5508	Non-Stationary
LGD	-6.2088	-3.5508	Stationary

LCPI	-2.3389	-3.5508	Non-Stationary
Variables in Differenced Form			
DIBD	-8.7579	-2.9520	Stationary
DONR	-9.9907	-2.9520	Stationary
DMS	-10.4386	-2.9520	Stationary
DGD	-24.5942	-2.9520	Stationary
DCPI	-7.5117	-2.9520	Stationary

Table 4: KPSS Test

Variable	Test Statistic	Critical Value	Implication
Variables in Level Form			
LIBD	0.54223	0.38489	Non-Stationary
LONR	0.4288	0.38489	Non-stationary
LMS	0.5448	0.38489	Non-stationary
LGD	0.55154	0.38489	Non-stationary
LCPI	0.56938	0.38489	Non-Stationary
Variables in Differenced Form			
DIBD	0.10898	0.14345	Stationary
DOR	0.12122	0.14345	Stationary
DM2	0.10128	0.14345	Stationary
DGD	0.1208	0.14345	Stationary
DREER	0.10595	0.14345	Stationary

The result obtained from the three unit root tests shown above indicates the use inconsistent variables in terms of stationarity at the level form. Our analysis shows that interest rate is non-stationary for both ADF and KPSS test, but is stationary at the level form for PP test. Additionally, the Gross Domestic product also show a different result at the level form among the test executed. As a result, we decided to opt for ARDL in testing the long-run relationship among the variables. While other co-integration techniques require all the variables to be stationary at the level form, ARDL allows mixture of stationarity at the level form.

Before proceeding with the next step which is the test of cointegration, we make an attempt in determining the order of the vector autoregression (VAR). In other words, we wanted to know the number of lags to be used. Nevertheless, note that this step is not necessary when using an ARDL approach because the process itself finds an individual lag for each variable. As per the table below, our result suggests the use of one lag order.

Table 5: VAR Order

Selection Criteria	Maximum
AIC	1
SBC	1

Moving on, we precede our analysis by conducting the bound test for the null hypothesis of no cointegration. The results are tabulated in Table 6 below. Our result shows that the F-statistics for the dependent variable DONR (interest rate) and DMS (money supply) are 6.024 and 4.662 respectively which are higher than the upper bound critical value of 3.805 at 5% level. Thus, it is implied that the null hypothesis of no cointegration of a long run relationship can be rejected. This suggests to us the existence of a long-run relationship between the interest rate, money supply, output, and inflation with Islamic banking deposit in Malaysia. Such evidence rules out the possibility of a spurious relationship between the variables, indicating the existence of a theoretical relationship among them.

Table 6: F-Statistics for testing the Existence of Long-Run Relationship (Variable Addition Test)

Variables	F-Statistics	Critical value lower bound	Critical value upper bound
DIBD	1.0923	2.649	3.805
DONR	6.0624*	2.649	3.805
DMS	4.6622*	2.649	3.805
DGD	2.4393	2.649	3.805
DCPI	1.3040	2.649	3.805

Note: Bounds test statistics are compared with critical values tabulated in Pesaran et al. (2001). The symbols (*) indicate rejection of the null hypothesis at 5% level.

The result for co-integrating relationship, however, does not reveal any short-run dynamics between the variables. There is a possibility for the variables to deviate from one another in the short run. Since it does not unfold the short-run adjustment process in bringing the long run equilibrium, we employed the error-correction model in the ARDL for a clear understanding of

this adjustment process. The T-ratio or the p–value of the error correction term coefficient tells us whether the deviation from equilibrium shall have a significant impact or not on the dependent variable tested. Specifically, it indicates the endogenousity and exogenousity of the variables. The results for the error correction term model are recorded in Table 7 below which are selected using the AIC criterion.

Table 7: Error Correction Representations for the selected ARDL models (based on AIC)

Variables	Coefficient	p-value
dLIBD	-0.24883	0.000*
dLONR	-0.22369	0.000*
dLMS	-0.15356	0.000*
dLGD	-0.82120	0.000*
dLCPI	-0.059593	0.198

significance at 5% level

The p–value of the ECM coefficient that is less than our 5% significance level for all variables except consumer price index indicates that they are endogenous. The ECM coefficient of these variables falling between -1 and 0 shows the existence of partial adjustment and cointegration among the variables. This suggests to us that Islamic banking deposit, interest rate money supply, and gross domestic product are all dependent on the level of inflation. The result seems to be generally intuitive. The main objective of monetary policy is always to slow down the high inflation resulting from a booming economy. For example, if the inflation is high, the central bank will execute a contractionary monetary policy. They will increase the overnight policy rate which subsequently causes the cause of financing to increase thus increasing the amount of deposit in the system due to higher returns. As a result, the economic growth will start to slow down as companies and firms are reluctant to borrow at a higher rate. Thus, our result of the inflation being exogenous, and others being the followers tend to agree with theory. However, does this relation means that Islamic banking is affected by monetary policy shocks of interest rate channel, thus denying the fact that it does not depends on interest rate?

To further enhance our discussion, we decided to proceed with a test of variance decomposition (VDCs) to determine the level of exogeneity among the variables which is estimated by the

proportion of the variance examined by its own past. Despite the ability of the ECM model to determine the exogeneity and endogeneity of a variable, it does not indicate the relative exogeneity and endogeneity of the variables being used. Though this is not a regular step for an ARDL approach, doing so may help in shedding lights as regards to the ranking (in terms of exogenousity) of variables. Technically, a variable that is explained mostly by its own shocks is deemed to be the most exogenous amongst all.

There are two different ways in executing VDCs, which are, the orthogonalized VDCs and generalized VDCs. In our study, we decided to go for the generalized VDCs due to the strength it has over the other. The limitations of using orthogonalized VDCs are, first, it assumes that when a particular variable is shocked, other variables in the system are switched off. Second is it does not generate a unique solution, in which it depends on the ordering of the variables in VAR. Comparatively, the generalized VDC does not depend on the particular ordering of VAR and no such assumption that other variables are switched off is made. Thus, Table 8 tabulates the result obtain from applying the generalized VDC.

GENERALIZED APPROACH

Horizon	Variable	LIBD	LONR	LMS	LGD	LCI	**Table 8:**
	LIBD	52.81%	7.06%	26.22%	6.98%	6.92%	
24	LONR	9.20%	70.79%	2.52%	11.93%	5.57%	
months	LMS	20.74%	15.64%	45.85%	15.39%	2.39%	
	LGD	6.92%	8.76%	1.29%	52.60%	30.42%	
	LCI	6.38%	2.95%	1.42%	12.85%	76.41%	
	Ranking	3	2	5	4	1	

Generalized VDCs

GENERALIZED APPROACH

Horizon	Variable	LIBD	LONR	LMS	LGD	LCI
	LIBD	50.22%	8.69%	27.03%	7.70%	6.36%
36	LONR	9.25%	70.26%	2.81%	12.03%	5.65%
months	LMS	21.82%	16.82%	44.34%	14.96%	2.06%
	LGD	7.53%	8.12%	1.37%	49.14%	33.83%
	LCI	8.09	2.59	1.81	12.31	75.47%
	Ranking	3	2	5	4	1

Our findings indicate at the end of forecast horizon period, for both 24 months and 36 months, CPI is the most exogenous variable and money supply is the most endogenous variable. This strengthens our previous findings on the exogeneity of the variable. Thus, it can be concluded that the level of inflation in Malaysia has a predictive value in which the other variables are depending upon. Additionally, our VDC result also indicates the significant impact of interest rate in influencing the Islamic banking deposit. These findings point out to the fact that monetary policy conducted in a dual banking system does have a significant impact on the Islamic banking deposit. Hence, the so-called interest-free, asset-linked business of the industry is debatable as the system tends to follow its conventional counterparts in regards to its response towards changes in monetary policy. One possible explanation for such observation is due to the fact that the size of Islamic banking in Malaysia is still very small as compared to its conventional counterpart. Thus, Islamic banks in Malaysia are still highly influenced by the interest rate dominant environment. With the presence of arbitrage opportunities that exist between both systems, it is practically hard to deny the spillover effect from the conventional interest rates to the Islamic banks funding costs, return on deposits, and the cost of Islamic credit (Cevik and Charap, 2011). As evidenced by the global financial meltdown the after-effects of interest are detrimental to the financial system as a whole. With that, there is a possibility that Islamic banks to experience slower growth in the coming future, particularly in Malaysia due to the effect of the interest rate on the system.

The three figures below shows the impulse response function generated. Essentially, IRF produces the same result as the VDCs except that it was produced in a graphical form.As can be seen, by
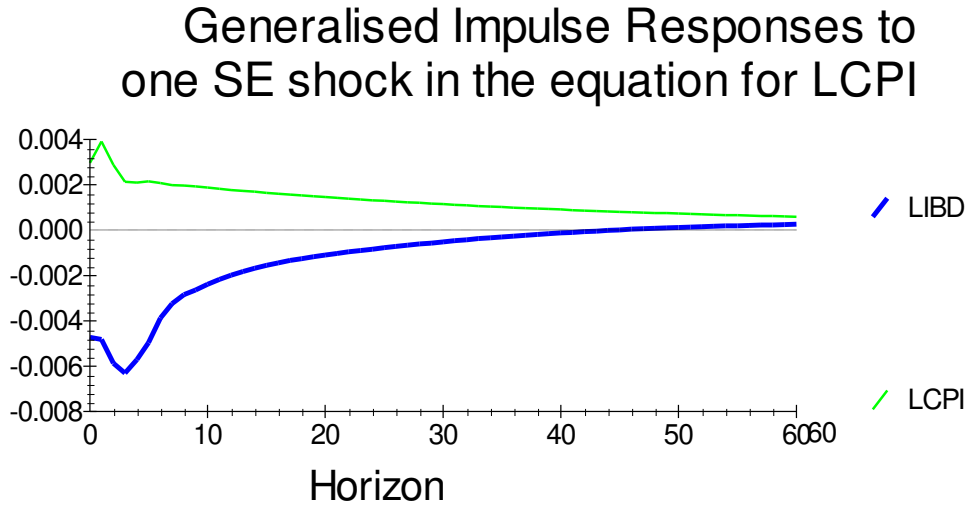
15

shocking the variable LCPI, an inverse response is shown by the Islamic banking deposit. Intuitively, this agrees with the conventional theory as a high inflation reflects a higher degree of rice level causing the demand for money to increase, thus reducing the total Islamic banking deposits. Additionally, the shock on interest rate resulted in a response of similar direction of Islamic banking deposit.
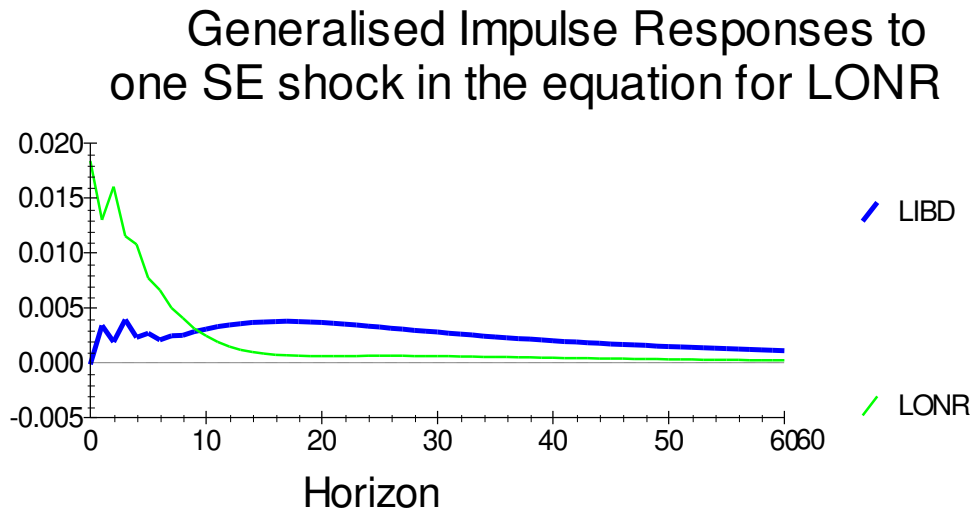
Figure 1: Shock of Islamic Bank Deposits to other variables

Generalised Impulse Responses to one SE shock in the equation for LIBD
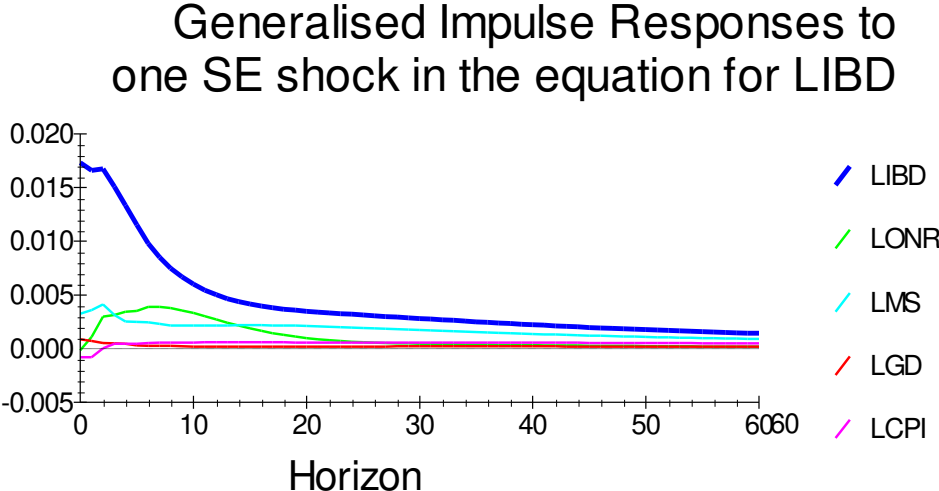
Figure 2: Shock of Consumer Price Index to Islamic Bank Deposits

Generalised Impulse Responses to one SE shock in the equation for LCPI

Figure 3: Shock of Interest Rate on Islamic Bank Deposits

Generalised Impulse Responses to one SE shock in the equation for LONR

CONCLUDING REMARKS AND POLICY IMPLICATIONS

The global financial meltdown occurred in the period of 2008-2009 witnessed a boost in the demand for Islamic Finance. Islamic Finance is claimed to be more stable, and the prohibition of interest and speculation in this religious based finance, has managed to attract many people despite their religion background. The viability of Islamic banking as an alternative to the conventional ones has widely been assessed especially the ones relative to performance, risk, and the resiliency of the system. However, little effort has been made in area of monetary policy. Few years before, several attempts have been made in assessing the impact of monetary policy shocks in a dual banking system which includes the period of before and during the global crisis. In this analysis, we revisit the issue of how Islamic banks response to changes in monetary policy shocks using the most recent monthly data. Due to the prohibition of Riba, and the industry which by nature is linked to the real performance of the economy, we expect the response of Islamic bank deposits towards changes in monetary policy shocks to be different than the conventional theory. In other words, it shall not be affected or may have responded differently.

Using the Autoregressive Distribution Lag (ARDL) technique over the period of 2010-2016, our analysis revealed an impressively interesting finding. Inflation, measured by the consumer price index was found to be the most exogenous variable amongst all. This agrees with the theory of monetary policy through the interest rate channel whereby, monetary policy tools are being used to manage a country's inflation, thus making it to be the strongest leader. Further analysis based on the variance decomposition revealed that interest rate, measured by the overnight policy rate set by the Malaysian central bank, ranked the second in terms of exogenousity. Additionally, the relationship between inflation and Islamic banking deposit shows an inverse response and the relationship between interest rate and Islamic banking deposit moves in the same magnitude. Our result indicates that even the existence of Islamic banking has been around for almost half a century, the response of Islamic banking deposit towards monetary policy shocks still resembles its conventional peers as pointed out by various previous studies which include the study of Haron and Ahmad (2000) Kasri and Kassim (2009), Sukmana and Kassim (2010) and Zaheer et al. (2013), consequently, invalidates the theory that they are more stable.

A policy implication emerges from our results is that it is very critical for the government and central banks to maintain the resiliency of the Islamic banking system in Malaysia. The spillover

effect of interest rate on the Islamic banking system may be detrimental to the growth of the industry, thus shall cause the stakeholders to slowly losing their confidence towards this fast growing industry with the coexistence of conventional banks alongside Islamic, it is important to have an appropriate design of monetary policy that could cater both system. Additionally, in fulfilling the objective of Malaysia in becoming an Islamic finance hub, the risk management framework of theses Islamic institutions should be devised accordingly to ensure the robustness of the system towards any changes in the conventional market. This may also requires an implementation of a more stringent policies and reforms at an institutional level in which more work needs to be directed towards research and development to ensure that all Sharia scholars and financial practitioners are equipped with the knowledge of both worlds, thus making Islamic Finance to be less controversial by having its own brand and quality. On a last note, the government should always show support towards this industry in order to help them boost their productivity by moving to the next step of innovation.

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