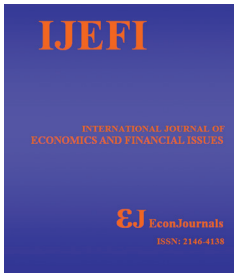

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Impact of Monetary Policy Fluctuations on Conventional and Islamic Banks in Malaysia: Evidence from ARDL Approach

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ABSTRACT

The purpose of this study is to investigate the effect of monetary policy on conventional and Islamic banks in Malaysia. This study deployed autoregressive distributed lag (ARDL) model due to its appropriateness for small sample. Bond test result indicates that there is long run relationship among Islamic bank loans and its determinant and also conventional bank and its determinant at 1% significance level. Nevertheless, result from this study illustrates that there is significant negative impact of interest rate on Islamic bank loans in short run and although it is not significant in the long run. It also illustrates presence of significant negative impact of interest rate on conventional bank loans in the short run while there is significant positive impact on conventional bank loans in the long run. The outcome from this study led several policy implications; Firstly, overnight policy rate designed to influence day to day activities of financial institutions is effective in performing its function as short term predictor. Secondly, since the result supported impact of interest rate on Islamic bank loans which make necessary for the central bank to set up monetary policy that suits both banks while interest free banks needs to improve their risk management tools.

Keywords: Autoregressive Distributed Lag, Base Financing Rate, Base Lending Rate, Overnight Policy Rate
JEL Classifications: E5, E52

1. INTRODUCTION

Banks are financial institutions that brings together economic agents. These activities of bringing together those with money surplus and those with money deficit many empirical studies suggested to have positive impact in economy. In general these financial institutions are categorized in two main categories the first category is commercial bank while the second category is Islamic banks. Both of these categories accept deposits and give out loans but the distinct lies the way of making profits while mediating economic agents where conventional banks rise profit by charging interest for their products and services while Islamic banks doesn't involve interest rate by following special arrangement namely profit and loss sharing and make profit through trading, sharing, leasing and charging fees for their products and services.

(Al-abedallat, 2017) find significant impact of banks particularly credit facilities on gross domestic product and further recommended credit facilities to all sectors in the economy can boost the growth of the domestic economy by deploying evidence from Jordan. (Vaithilingam et al., 2003) demonstrated loans offered to private sector influence real income directly by applying evidence from Malaysia. (Fulford, 2015) suggested that banks improve production per person where in rural areas enhance agriculture over manufacturing. Moreover he suggested provision of capital and liquidity take significant part in stimulating economic growth.

Empirical literature supported significant role that banks play in the economy, however, any disturbance in the operation of banking system will have effect on the performance of the economy. (Creel et al., 2015) illustrated that economic growth is negatively influenced by financial instability and further suggested that financial indepth stimulate economic performance. Financial stability is regarded as long term economic driver as illustrated by (Jayakumar et al., 2018).

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Sustaining economic growth through ensuring a well functioning financial institutions is a primary concern to every monetary authority which makes necessary the adoption of monetary policy. Inline to that this study aims to investigate how balance sheet items of interest free and interest based banks are impacted by monetary policy in the Malaysia case. For now Bank Negara Malaysia targets the rate of interest in which the bank uses overnight policy rate as a policy instrument which is intended to affect inflation and economic growth by guiding short run interbank rates. Moreover, the current overnight policy rate in Malaysia is 3.25% which is set by monetary policy committee in January 2018 when it is raised from 3.0%.

Nevertheless, there are overwhelming issue arising from the literature which contrasts the theoretical basis regarding the effect of rate of interest on loans of conventional and Islamic banks. Moreover, (Khalidin and Masbar, 2017) find that interest rate influence indirectly on Islamic banks based on evidence from Granger causality and the Pearson correlation tests, however this study also supports the influence of interest rate on Islamic banks. As illustrated by (Anuar et al., 2014) Islamic banks is not independent from interest which is the indication of effect of interest rate on interest free banks.

With the application of vector autoregressive (VAR) model (Kassim et al., 2009) find that deposit and finance of Islamic banks is more responsive to the fluctuations of interest rate than conventional banks while loans of conventional banks is not responding to changes in interest rate. With the application of vector auto regression(VAR) model (Etem Hakan and Gülümser, 2011) they observed that interest free banks is influenced by interest rate.

Almost a good number of the observed literature supports the effect of monetary policy on conventional and Islamic banks although some of them illustrated that interest free banks are highly responsive to interest rate fluctuations which is contrary to the expectations. Therefore this creates gap between the theory and practice of Islamic banks which eventually lead Islamic banks to appear more risker than conventional banking system.

This study will investigate the reliability of this gap between theory and practical of Islamic banking in Malaysia by following the work of (Kassim et al., 2009) who adopted vector autoregressive to analyse the impact of monetary policy on interest free and interest based banks. Moreover, the outcome seems to be doubtful due less sample size they applied to vector autoregressive model. This study investigates the reliability of this issue by adopting more flexible model suitable for small sample size.

This study is intended to provide evidence based policies while creating awareness about the stance of the economy. Therefore outcome from this investigation will help all the stakeholders such as financial institutions, monetary authority and future researchers by providing reliable results.

2. LITERATURE REVIEW

Kassim et al. (2009) conducted finding about how items of balance sheet of both Islamic and conventional banks are being influenced by the changes of monetary policy which is presented by interest rate in the case of Malaysia with the aim of identifying relative risks that interest free and interest based banks faces. This study uses balance sheet elements such as loans and deposits of both conventional and Islamic banks as dependent variable and interest rate as independent variable where data from the 1999 to 2006 was deployed to come up result concerning the issue. Vector auto-regression (VAR) model was use in the analysis of this finding. The result from this finding shows that balance sheet elements of conventional banks are less responsive than Islamic banks which is responding more to the changes of interest rate where loans in conventional banks where totally responding to changes of interest rate. The implication of this result is that risks associated with Islamic banks is very high due to changes of monetary policy than conventional banks.

Naveed (2015) conducted finding aiming to evaluate how Islamic and conventional banks are being impacted by shocks in monetary policy which is represented by the rate if interest in the case of Pakistan. Variables such as deposit and loan of conventional banks and deposit and finance of Islamic banks where used as dependent variable while interest rate was used as independent variable other macroeconomic variables deployed in this study where quantum index number and consumer price index. The econometric method used in this finding is vector auto-regression (VAR) model. Result from this finding imply that there is less stability associated with Islamic banks then conventional banks which is found to be more stable due to changes of interest rate. Islamic banks are less responsive to changes in interest rate which conventional is highly responding to the fluctuation of the rate of interest.

Ergeç and Arslan (2013) conducted an investigation in order to uncover how Islamic banks and conventional banks are being impacted by the rate of interest fluctuations in the case of turkey. They find that Islamic is influenced the rate of interest in the case of turkey. (Nazib and Masih, 2017) they conducted an investigation on how Islamic bank deposits are being influenced by monetary policy shocks in the case of Malaysia. They selected interest rate to r represent monetary policy which is the independent variable of this findings while the dependent variables is taken as Islamic bank deposits. Autoregressive distributed lag (ARDL) technique and variance decomposition analysis was used and monthly basis data from the year 2010 to 2016 was deployed. They found that deposit of Islamic banks is influenced by the rate of interest in the case of Malaysia which contradicts the basis of Islamic banks.

Abdul Kader and Yap (2008) conducted finding aiming at examining if Islamic bank financing is influenced by the rate of interest by adopting data from Malaysia. furthermore, they deployed several test and find that as the rate of interest increases specially the base lending rate the financing of Islamic banks would also rise in response that change.

Yusof et al. (2009) conducted an investigation in order to explore how Islamic bank deposits are being influenced by monetary policy shocks in case of Malaysia and Bahrain where date from the year 2001 to 2006 was deploy. In addition to that econometric models such as the auto-regressive distributed lag model and vector error-

correction model is deployed in this study where the first one aims to examines the long-run association ship between variable and second one focuses short-run dynamic and long run dynamics of the variables. This study finds that Islamic bank deposits of Bahrain is more responsive compared to that of Malaysia which implies that monetary policy is destabilizing more in Bahrain than Malaysia.

Anuar et al. (2014) work attempts to finds weather the rate of interest have influence on deposit and finance accounts of Islamic banks in the case of Malaysia. In order to uncover this problem they deployed monthly data of deposits and finance of Islamic banks from January 1994 to December 2012. Vector auto regression (VAR) model, DCC-MGARCH model and a the vector error-correction model (VECM) where used as an econometric technique. They found that significant influence of interest rate on the profit and finance of Islamic banks which contradicts theoretical basis of Islamic banks.

(Mushtaq and Siddiqui, 2016) conducted finding which they intend to know if bank deposits is influenced by the rate of interest through observing both Islamic and non-Islamic economies. 55 non-Islamic economies and 15 Islamic economies with date period of 9 years deploying panel least square with fixed effect model as econometric technique to analyse the observed data. They found that interest rate do not have influence on bank deposits in the case of Islamic economies while the rate of interest have relevant positive impact on bank deposits in the case of Islamic economies. Result obtained by Mushtaq and Siddiqui is in line with the theoretical basis of Islamic banking where bank operation is independent of interest rate at all.

Khalidin and Masbar (2017) conducted an investigation to find if there is link between the rate of interest and deposits of interest free banks in the case of Indonesia. They used 7 years data which is monthly basis starting from the 2009 to the year 2015 and deployed vector autoregressive model in for analysis purpose. This study find that interest rate have effect on deposits of interest free banks indirectly inIndonesia. Since the result of this finding indicate a link between the rate of interest and interest free bank deposist. It is contradicting the theoretical basis of Islamic bank operations.

Arshad and Nurfadilah (2017) conducted an investigation about a comparative study by finding factors that cause changes to Islamic bank deposits in the case of Indonesia and Malaysia. Using variables such as Non-performing financing, rate of interest and rate of returns Where 16 Islamic banks chosen from Malaysia and 11 from Indonesia in a period of 10 years from the year 2010 to the year 2015. Generalised least square technique was deployed in uncovering the finding gap of their study. They found that Mudharabah deposits of Islamic banks is negatively influenced by fluctuations of interest rate. The result of this finding opposing the basis of Islamic banks operations which states that Islamic bank operation isn't independent of interest rate.

Sukmana and Kassim (2010) conducted an investigation about the role that Islamic banks play in monetary transmission mechanism in the case of Malaysia. They find that there is significant association between the rate of interest which is monetary policy indicator and Islamic bank deposits and finances since real output and monetary policy indicator is linked by Islamic bank deposits and finances.

Kasri and Kassim (2009) conducted finding aiming at factors that influences saving rate Islamic banks in the case of Indonesia. Vector autoregressive and response function where used in the analysis of obtained data which covering March 2000-August 2007 based on all Islamic banking in Indonesia. They found that there is significance relationship between saving rate of Islamic banks in Indonesia and the rate of interest where their result implied that high saving rate in Islamic banks is associated low interest rate which is contrary to the theoretical basis of Islamic banking.

Majid and Hasin (2014) conducted an investigation using econometric techniques with the aims to uncover the influence of monetary policy on the real economy through using lending rate of both Islamic and conventional banks in the case of Malaysia. They find that Islamic bank financing existence as monetary transmission in the case of Malaysia. in addition to that this study find that it is difficult for Islamic bank financing to be independent on the rate since it is operating dual banking environment which is the implication of the existence of relationship between Islamic bank finance and the interest rate.

Affandi and Tamanni (2010) investigated the influence of shocks in monetary policy on Islamic bank deposits in the case of Indonesia. They observed a number of Islamic banks in Indonesia and used data collected from the year 2004 to 2008 in order to find solution for the problem at hand. They deployed vector auto regression model (VAR) model as a technique of analysis. They find that monetary policy changes have no link with Islamic banks deposits since deposits of Islamic banking were not responding to changes in monetary policy.

Salmanov et al. (2015) conducted study in order to examine if bank lending in the case of Russia is influenced by monetary policy. They used quarterly data collected from the year 2002 to 2013 and employed the generalized method of moments in order to obtain solution for their problem. They find the existence of influence by monetary policy on bank lending rate in the case of Russia. (Bacchetta and Ballabriga, 2000) conducted a finding which analysing the impact of monetary policy shocks on dual banking system on balance sheet items by comparing united states of America to 13 European nations. Vector autoregressive model was deployed as econometric technique to uncover this issue under consideration. They find that monetary shocks in particular contractionary monetary policy the bank lending fall significantly in both short-run and medium-run where bank deposits increase positively with interest rate.

3. METHODOLOGY

3.1. Data

This finding aims to investigate the effect of monetary policy on loans of interest free and interest based banks. There are different tools of monetary policy that is exercised by the monetary authority in order to influence the economy but in this study we shall use

overnight policy as monetary policy tool. Overnight policy rate, Islamic bank loans and conventional bank loans are used as main variables of the study while several control variables is adopted such as money supply, consumer price index, industrial production index and real effective exchange rate. This study deployed monthly data sourced from the monthly statistical bulletin of bank Negara Malaysia covering periods from January 2015 to January 2018 which makes forty one observations in total.

3.2. Model

This study uses two models the first one is based on Islamic bank loans and the other one is based on conventional banks and its proposed as follows:

$$LIBL_t=\beta_0+\beta_1 LOPR_t+\beta_2 LM3_t+\beta_3 LREER_t +\beta_4 LIPI_t+\beta_5 LCPI_t+\varepsilon_t \quad (1)$$

$$LCBL_t=\beta_0+\beta_1 LOPR_t+\beta_2 LM3_t+\beta_3 LREER_t +\beta_4 LIPI_t+\beta 5 LCPI_t+\varepsilon_t \quad (2)$$

$LIBL_t$=is log of Islamic bank loans in month t, $LOPR_t$ is log overnight policy rate in month t, $LM3_t$ is log money supply in time t, $LREER_t$ is the log real effective exchange rate in time t, $LIPI_t$ is log industrial production index in time t, $LCBL_t$ is log conventional bank loans in time t, $LCPI_t$ consumer price index in time t and ε_t is the error term in time t.

3.3. Methodology

In this investigation autoregressive distributed lag (ARDL) model is applied due to its suitability for small sample size. By adopting ARDL model this study can estimate long run and short run relation between conventional bank loans and its determinant and Islamic bank loans and its determinants. Moreover the application of ARDL model give more flexibility in this investigation by allowing to use variables with different lag length in the model and estimation occurs irrespective of variables in the model being I(0) and I(1).

As the aim of this finding is to investigate the impact of monetary policy shocks on conventional and Islamic banking system in this study we adopt two equations where equation (1) is concerned Islamic bank loans and its determinants and equation (2) is concerned conventional bank loans and its determinants. Therefore the long run autoregressive distributed lag (ARDL) representation of equation (1) and equation (2) are formulated as below:

$$LIBL_t=\beta_0+\sum_{i=0}^{n}\beta_1 LIBL_{t-1}+\sum_{i=0}^{n}\beta_2 LOPR_{t-1} + \sum_{i=0}^{n}\beta_3 LM3_{t-1}+\sum_{i=0}^{n}\beta_4 LREER_{t-1}+ \sum_{i=0}^{n}\beta_5 LIPI_{t-1}+\sum_{i=0}^{n}\beta_6 LCPI_{t-1}+\varepsilon_t \quad (3)$$

$$LCBL_t=\beta_0+\sum_{i=0}^{n}\beta_1 LIBL_{t-1}+\sum_{i=0}^{n}\beta_2 LOPR_{t-1} + \sum_{i=0}^{n}\beta_3 LM3_{t-1}+\sum_{i=0}^{n}\beta_4 LREER_{t-1}+ \sum_{i=0}^{n}\beta_5 LIPI_{t-1}+\sum_{i=0}^{n}\beta_6 LCPI_{t-1}+\varepsilon_t \quad (4)$$

To determine the present of long run relationship between LIBL, LOPR, LM3, LREER and LIPI and LCBL LOPR, LM3, LREER and LIPI bond test based on (Pesaran et al., 2001) procedure is adopted. This procedure of bond test is based on the F-test which is test of null hypothesis of no cointegration among the variables against the alternative hypothesis of there is cointegration among the variables and its denotes as bellow;

H_0:$\beta_1=\beta_2=\beta_3=\beta_4=\beta_5=\beta_6=0$

The null hypothesis (H_0): There is no cointegration among the variables.

H_a:$\beta_1\neq\beta_2\neq\beta_3\neq\beta_4\neq\beta_5\neq\beta_6\neq0$

Table 1: Result of unit root

Level				
Variable	Augmented dickey fuller		Phillips-perron	
	Constant without trend	Constant with trend	Constant without trend	Constant with trend
LM3	0.7277	−1.5784	0.8800	−1.3853
LIPI	0.0494	−7.1882***	−3.6491***	−8.4387***
LCPI	−1.1802	−2.1977	−1.1756	−2.3301
LREER	−2.1360	−1.1769	−2.1802	−1.4567
LOPR	−1.4217	−0.9658	−1.4806	−0.9954
LIBL	−1.0609	−4.8908***	−4.7135***	−5.0173***
LCBL	−5.4324***	−5.4673***	−5.4324***	−5.4673***
First difference				
Variable	Augmented dickey fuller		Phillips-perron	
	Constant without trend	Constant with trend	Constant without trend	Constant with trend
LM3	−6.7899***	−7.0553***	−6.8361***	−7.0985***
LIPI	−5.2044***	−5.0690***	−14.9230***	−16.3866***
LCPI	5.7981***	−5.9408***	−5.8016***	−5.9402***
LREER	−4.3291***	−4.6636***	−4.3270***	−4.6636***
LOPR	−6.0828***	−6.2070***	−6.0828***	−6.2073***
LIBL	−5.3675***	−5.9514***	−18.4805***	−44.5958***
LCBL	−9.3074***	−9.1514***	−27.4974***	−29.0738***

The alternative hypothesis (H_a): There is cointegration among the variables.

(Pesaran et al., 2001) generated lower bond critical values I(0) and upper bond critical values I(1) due to f-test having non-standard distribution. The lower bond presumes that all variables are I(0), indicating that there is no cointegration between the variables while the upper bond presumes that all variables are I(1), indicating that there is cointegration If the computed f-statistic is greater than the upper bond critical values is rejected which means there is cointegration among the variables but if computed f-statistic is less than the lower bond critical values H_0 can not be rejected which indicating that there is no cointegration among the variables.

This study adopted Schwarz Bayesion Criterion (SBC) in order to select appropriate lag length for model (3) and model (4). This study also determines the short run dynamic among the dependent variable and its regressors in both model (3) and model (4) by adopting error correction term which is represented as below;

$$\begin{aligned} LIBL_t &= \beta_0 + \sum_{i=0}^{n}\beta_1 \Delta LIBL_{t-1} + \sum_{i=0}^{n}\beta_2 \Delta LOPR_{t-1} \\ &+ \sum_{i=0}^{n}\beta_3 \Delta LM3_{t-1} + \sum_{i=0}^{n}\beta_4 \Delta LREER_{t-1} + \\ &\sum_{i=0}^{n}\Delta\beta_5 LIPI_{t-1} + \sum_{i=0}^{n}\beta_6 \Delta LCPI_{t-1} + \varnothing ECT_{t-1} + \varepsilon_t \end{aligned} \quad (5)$$

$$\begin{aligned} LIBL_t &= \beta_0 + \beta\sum_{i=0}^{n}\beta_1 \Delta LIBL_{t-1} + \sum_{i=0}^{n}\beta_2 \Delta LOPR_{t-1} \\ &+ \sum_{i=0}^{n}\beta_3 \Delta LM3_{t-1} + \sum_{i=0}^{n}\beta_4 L\Delta REER_{t-1} + \\ &\sum_{i=0}^{n}\Delta\beta_5 LIPI_{t-1} + \sum_{i=0}^{n}\beta_6 \Delta LCPI_{t-1} + \varnothing ECT_{t-1} + \varepsilon_t \end{aligned} \quad (6)$$

Where ECT_{t-1} is lagged error correction term.

4. EMPIRICAL RESULTS

Augmented dickey fuller and Phillips-Perron test was used in this investigation in order to determine the order of integration of the variables deployed in this finding. Table 1 provides result from augmented dickey fuller and Phillips-perron which reveals a mixture of order of integration of variables where some variables are I(0) and the other are I(1). It is not necessary all variables to be I(1) but the concern is to ensure that non of the variable are integrated of order two I(2) however in this case we can proceed to run ARDL model.

Table 2: Results of cointegration test

Model	F-statistic	Significance level	Bond critical value	
			I(0)	I(1)
		10%	2.331	3.417
LIBL	7.803345	5%	2.804	4.013
LCBL	43.71926	1%	3.9	5.419

Based on the critical values computed by (Narayan, 2005) for small sample size the result from bond test presented in Table 2 indicates that f-statistic of LIBL based model is 7.803345 which is greater than upper bond critical value of 5.419 at 1% significance level while f-statistic of LCBL based model is 43.71926 which is also greater than the upper bond critical values of 5.419 at 1% significance level. Therefore in this case we reject the null hypothesis of no cointegration among the variables H_0:$\beta_1=\beta_2=\beta_3=\beta_4=\beta_5=\beta_6=0$ against the alternative hypothesis that says there is cointegration among the variables H_a:$\beta_1\neq\beta_2\neq\beta_3\neq\beta_4\neq\beta_5\neq\beta_6\neq0$ at 1% significance level for both the model that is based on Islamic bank loans and the other which is based on conventional bank loans. In regard with the result from bond test this study concludes that there is long run relationship between the variables deployed in both the model based on LIBL and LCBL.

Result provided in Table 3 illustrates long run elasticity of the variables deployed in both the Islamic bank loans and conventional bank loans based models of all variables. The aim of this finding is to investigate the impact of monetary policy on balance sheet items such as loans of Islamic and conventional banks. Therefore, all the deployed variables such as real effective exchange rate, consumer price index, industrial production index, money supply are taken as control variable in both models except overnight policy rate which captures the impact of monetary policy.

The result expressed in Table 3 shows that impact of monetary policy (overnight policy rate) on Islamic bank loans is insignificant in the long run. The possible explanation for this result is that since overnight policy rate is short run predictor it is ineffective to perform its intended function in the long run.

The result from Table 3 of conventional bank loans based model illustrates that there is significant positive impact of monetary policy (overnight policy rate) on conventional bank

Table 3: ARDL coefficients for long run elasticity

Model	LIBL		LCBL	
Lag structure	(1,1,4,4,0,4)		(3,4,4,4,4,2)	
Regressors	Coefficient	T-statistic (Prob.)	Coefficient	T-statistic (Prob.)
Constant	−158.5470	−4.092540(0.0013)***	−382.2884	−4.049984(0.0067)**
LOPR	−1.436959	−1.226641(0.2417)	2.885968	3.559015(0.0119)**
LIPI	−2.327376	−1.150236(0.2708)	−8.095589	−3.100125(0.0211)**
LREER	5.005943	3.493136(0.0040)***	−1.240829	−1.043010(0.3371)
LM3	11.31007	2.865912(0.0132)**	40.42190	3.802421(0.0089)**
LCPI	−0.806985	−0.142947(0.8885)	−30.71850	−3.043254(0.0227)**

loans in the long run. Any 1% increase of overnight policy rate would result conventional bank loans to increase by 3%. In the normal case increase of overnight policy rate leading increase of base lending rate (cost of lending) which then decrease demand for loans. However, the outcome from this result contradicts the usual effect of overnight policy rate on bank loans. The possible explanation is that since overnight policy rate is short run predictor it is ineffective to perform its intended function in the long run. Moreover, people prefer long term loans which have high risk premium since its long maturity, this eventually lead bank to prefer long term loans due to higher returns.

Table 4 represents short run result of both conventional bank loans and Islamic bank loans based models. The value of ECM(−1) is negative and significant in both models indicating the presence of short run relationship among the variables in both models. For LIBL Model the coefficient of ECM(−1) is −0.926665 in which is significant at 1% indicating any disequilibrium in the short run is adjusted at speed of 93% towards the long run equilibrium every month. For LCBL Model the coefficient of ECM(−1) is −0.726293 in which is significant at 1% indicating any disequilibrium in the short run is adjusted at speed of 73% towards the long run equilibrium every month.

Table 4: Short run coefficient from ECM model

LIBL model			
Variables	**Coefficient**	**Std. Error**	**t-statistic(prob.)**
D(LOPR)	−3.486243	0.806321	−4.323641(0.0008)***
D(LIPI)	−2.141097	0.512282	−4.179525(0.0011)***
D(LREER)	−0.362049	0.854015	−0.423937(0.6785)
D(LM3)	10.48065	4.024984	2.603897(0.0218)**
D(LCPI)	−10.12440	3.972460	−2.548648(0.0243)**
ECM(−1)	−0.926665	0.103712	−8.935000(0.0000)***
LCBL model			
Variables	**Coefficient**	**Std. Error**	**t-statistic(prob.)**
D(LOPR)	−3.184187	0.228664	−13.92516(0.0000)***
D(LIPI)	−3.016820	0.193711	−15.57384(0.0000)***
D(LREER)	−4.421077	0.307068	−14.39770(0.0000)***
D(LM3)	3.875270	0.981337	3.948968(0.0075)**
D(LCPI)	−4.662255	1.143151	−4.078425(0.0065)**
ECM(−1)	−0.726293	0.029357	−24.74004(0.0000)***

There is significant negative impact of monetary policy on LIBL. Therefore, any 1% increase in overnight policy rate would lead 3.5% decrease of Islamic bank loans. There is also significant negative impact of monetary policy on LCBL. Therefore, any 1% increase in overnight policy rate would lead conventional bank loans to decrease 3.2%. The possible explanation for this result is that increase of overnight policy rate would result base lending rate (BLR) and base financing rate (BFR) to increase as a result of this the cost of borrowing rises which thus decrease the demand for loans due to high interest rate.

The estimation of autoregressive distributed lag models based Islamic bank loans and conventional bank loans had undergone a several diagnostic test in order to ensure the appropriateness of both models. Serial correlation LM test, heteroskedasticity test, Ramsey reset test, normality test, CUSUM test and CUSUM square test was adopted by this study. However, based on the result from the diagnostic test of both LIBL model and LCBL model presented in Table 5 indicates that this study had passed all the diagnostic tests indicating that residuals of both models are not serial correlated, normally distributed and has no heteroskedasticity while Ramsey test concluded that both models follow correct functional form. Furthermore, , both models had passed both CUSUM and CUSUM square test as indicated in Figure 1 and 2 in the appendix which means both models are stable.

Table 5: Diagnostic test results of ARDL model

Model	**Breusch-godfrey serial correlation LM test**			
LIBL	F-statistic	1.040405	Prob. F(1,12)	0.3279
	Obs*R-squared	2.632844	Prob. Chi-square(1)	0.1047
LCBL	F-statistic	0.106121	Prob. F(1,5)	0.7578
	Obs*R-squared	0.685840	Prob. Chi-square(1)	0.4076
Model	**Heteroskedasticity test: ARCH**			
LIBL	F-statistic	0.295389	Prob. F(1,30)	0.5908
	Obs*R-squared	0.312009	Prob. Chi-square(1)	0.5764
LCBL	F-statistic	0.409148	Prob. F(1,30)	0.5273
	Obs*R-squared	0.430553	Prob. Chi-square(1)	0.5117
	Ramsey reset test			
Model		**Value**	**Df**	**Probability**
LIBL	t-statistic	1.859108	12	0.0877
	F-statistic	3.456283	(1, 12)	0.0877
LCBL	t-statistic	1.348249	5	0.2354
	F-statistic	1.817777	(1, 5)	0.2354
	Normality test			
Model		**Jarque-Bera**		**Probability**
LIBL		1.417691		0.492212
LCBL		0.954674		0.620433

5. CONCLUSION

This study aimed to investigate the impact of money policy on both conventional and Islamic banks while particular attention is given on balance sheet items of these banks such as loans of conventional and Islamic banks, this is because of empirical literature had revealed a gap between the theory and practice of Islamic banks. This study has adopted monthly time series data covering from January 2015 to May 2018 while deploying autoregressive distributed lag (ARDL) model due to its appropriateness for small sample size.

Study adopted two autoregressive distributed lad based models where one is about Islamic bank loans while the other one is about conventional bank loans. Moreover, in both models all explanatory variables are assumed to be control variables except overnight policy rate. For both LIBL and LCBL models this study find that there is long run relationship among dependent variables and its regressors. This study finds that interest rate has negative significant impact on Islamic bank loans in short run and although it is not significant in the long run. This study also find that there is significant negative impact of interest rate on conventional bank loans in the short run while there is significant positive impact of interest rate on conventional bank loans in the long run.

Based on the outcome from this study in the short run Islamic bank is more sensitive to interest rate changes compared to its counterparts.

After estimating both models this study has adopted several diagnostic tests such as Serial correlation LM test, heteroskedasticity test, Ramsey reset test, normality test, CUSUM test and CUSUM square test to ensure the appropriateness of these models. All results from these diagnostic test indicated that both models are correct functional form.

The outcome from this study leads several policy implications to be suggested. Firstly, overnight policy rate designed to influence day to day activities of financial institutions is effective in performing its function as short term predictor. Secondly, despite of the effectiveness of monetary policy the result supported impact of interest rate on Islamic bank loans which make necessary for the central bank to set up monetary policy that suits both banks since Islamic banks is based on interest free principle.

6. ACKNOWLEDGMENT

I prepared this original work with curiosity without getting fund from any agency. I acknowledge that this work fills real gap between theory and practice of Islamic banking which few researcher provided controversial results which created doubt about their research outcome due to the mismatch between the model and sample used, absent of robust check and unclear sources of data.

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APPENDIXES

Figure 1: LIBL model

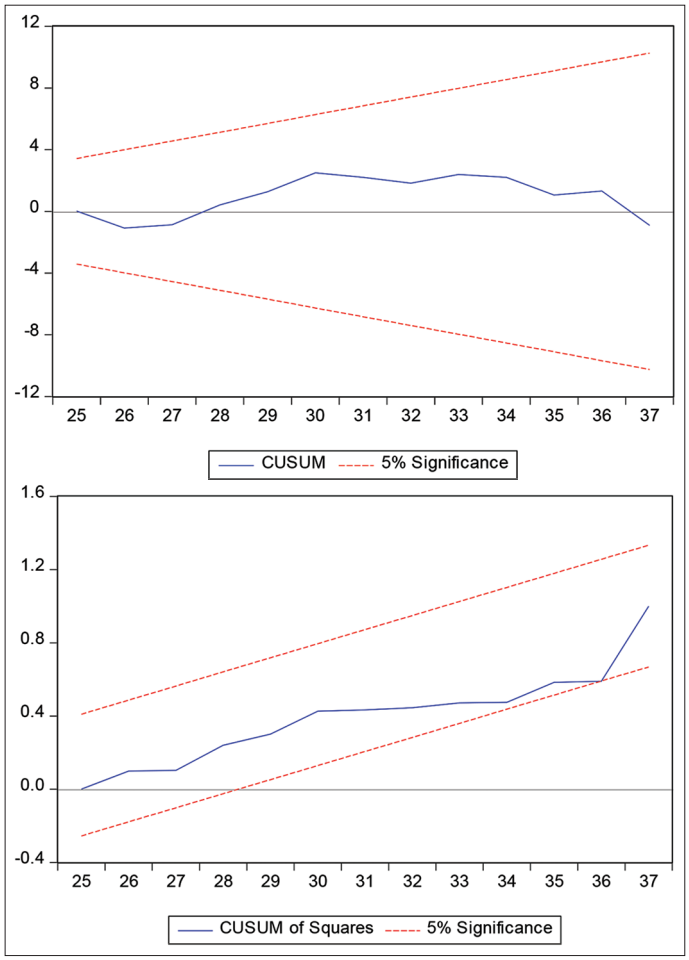
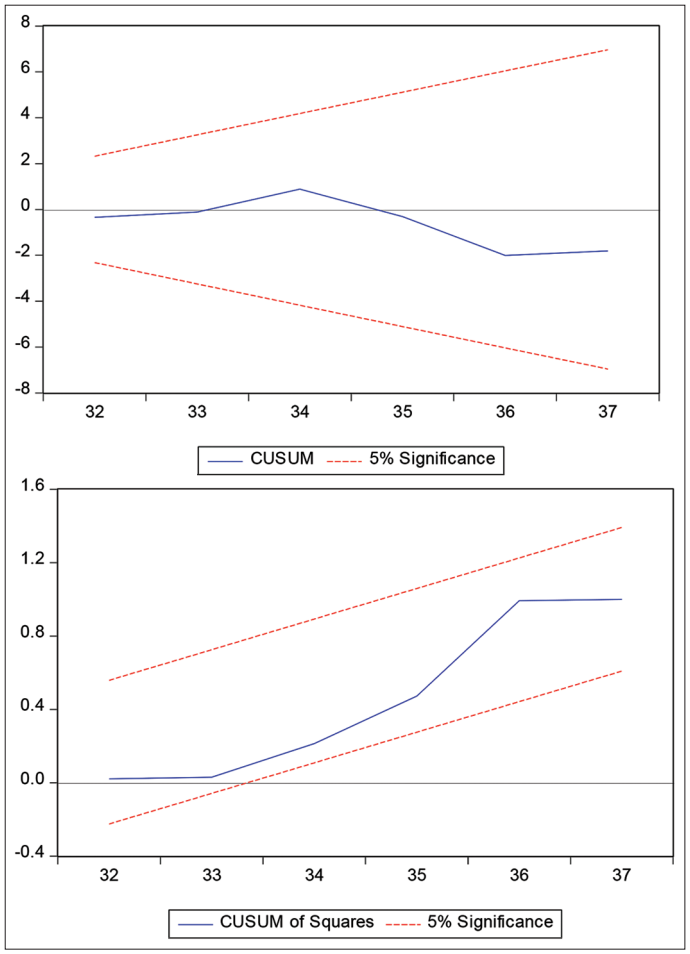
Figure 2: LCBL model