The Impact of Monetary Policy on Malaysian Deposit Rates: Comparative Analysis of Conventional and Islamic Finances

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ABSTRACT

Monetary policy has an impact both on conventional and Islamic deposit markets because yield curves of both conventional interest rates and Islamic rates of return (one-week, three-, six- and 12-month) are influenced by one week interbank rate. Bank Negara Malaysia controls conventional interest rates and Islamic rates of return up to 12-month in the Malaysian deposit market. Conventional interest rates and Islamic rates of return form short term deposit market up to 12-month through the impact caused by the monetary policy operation. This is consistent with the fact that at the end of 1999, the share of Islamic deposits in Malaysia was 5%, but had increased to 24.5% by the end of 2014. So far, the policy advocated by the Malaysian government to promote Islamic finance in the country has been successful.

Keywords: Deposit Rate, Islamic Finance, Malaysia, Monetary Policy

1. INTRODUCTION

In Malaysia, the share of Islamic deposits in the deposit market has grown since 2000, especially since 2005, and has grown rapidly, reaching 25% at the end of 2015 from 5% in 1999. The philosophies and principles of Islamic banking are based on Shariah, which protects Islamic communities and societies from activities that are forbidden in Islam. Shariah is also intended to encourage companies to engage in business activities that are acceptable and consistent with Islamic principles. Zakat, the giving of alms to the poor and needy, is one of the five pillars of Islam as in Pahala (2016). Islamic banking differs from conventional banking in that interest (*riba*) is prohibited. Islamic banks use rates of return in place of interest rates.

According to the homepage of Bank Negara Malaysia (http://www.bnm.gov.my), the central bank of Malaysia, the primary objective of its monetary operations in the Islamic money market is to ensure sufficient liquidity for the efficient functioning of the Islamic interbank market. The monetary policy target is only implemented in the conventional money market, where interest rate-based instruments are the primary funding instrument. The primary objective of such operations is to ensure that the AOIR (average overnight interbank rate) in the ringgit interbank money market remains within the OPR (corridor

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of the overnight policy rate) as set out by the Monetary Policy Committee (MPC).

This paper has two focuses. Firstly, it analyzes the transmission mechanism of benchmark interest rates to conventional interest rate and Islamic rates of return in Malaysia. The operating target is set on a benchmark rate by Bank Negara Malaysia. Secondly, it offers implications for the formation of conventional interest rates and Islamic rates of return in the Malaysian deposit market, considering the transmission mechanism of monetary policy.

Ascarya (2014) identified and determined the transmission of monetary policy through interest and profit channels into the real economy. This paper focuses instead on the transmission mechanism of the benchmark interest rate to conventional interest rates and Islamic rates of return.

Chong and Liu (2009), Cevik and Charap (2011), Ito (2013), Ergec and Arslan (2013), and Sarac and Zeren (2015) have analyzed the relationship between conventional interest rates and Islamic rates of return in the deposit market. Chong and Liu (2009) analyzed the co-movement and transmission of conventional interest rates and Islamic rates of return in Malaysia. They concluded that co-movement is observed and that conventional interest rates influence Islamic rates of return. They also concluded that Islamic banking is not very different from conventional banking.

Cevik and Charap (2011) analyzed the co-movement and transmission of conventional interest rates and Islamic rates of return in Malaysia and Turkey using monthly data. They concluded that the rates of conventional and Islamic deposits co-move and that conventional interest rates influence Islamic rates of return. Ito (2013) concluded that conventional interest rates and Islamic rates of return co-move in the Malaysian deposit market, and that Islamic rates of return propel the conventional interest rates of three-, six-, and 12-month maturities.

Ergec and Arslan (2013) investigated and analyzed the impact of interest rate shock upon deposits and loans held by conventional and Islamic banks and found that Islamic banks in Turkey are manifestly influenced by interest rates. Sarac and Zeren (2015) econometrically investigated the long-term relationship between conventional banks' (CB) term-deposit rates (TDRs) and participation banks' (PB) TDR in Turkey. Their findings show that the TDRs of three of four PBs are significantly cointegrated with those of CBs. In addition, permanent causality is found from CBs to all PBs.

This paper makes two major contributions to the literature. First, it investigates the transmission mechanism of benchmark interest rates to conventional interest rates and Islamic rates of return in the Malaysian deposit market. This has never been analyzed, either in Malaysia or in other Islamic countries. Second, implications for the formation of conventional interest rates and Islamic rates of return in the Malaysian deposit market are discussed, considering the transmission mechanism of monetary policy. This kind of analysis has never been conducted, thus distinguishing this paper from previous work.

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The remainder of this paper is structured as follows. Section 2 describes the data and provides summary statistics. Section 3 discusses methodology. Section 4 presents the results. Section 5 concludes.

2. DATA

The one-week interest rate is used as a benchmark indicator of Bank Negara Malaysia's monetary policy operation because it directly reflects this policy's stance. Conventional interest rates and Islamic rates of return in the deposit market are used. The maturities of deposits are set at three, six, and 12 months. The data are daily. The sample period runs from May 16, 2005 to October 17, 2014. The one-week interest rate is provided by Datastream. The conventional interest rates and Islamic rates of return on three-, six-, and 12-month maturities are provided by Bloomberg. The movement of the six-month Islamic rate of return is shown in Figure 1, and the descriptive statistics are provided in Table 1.

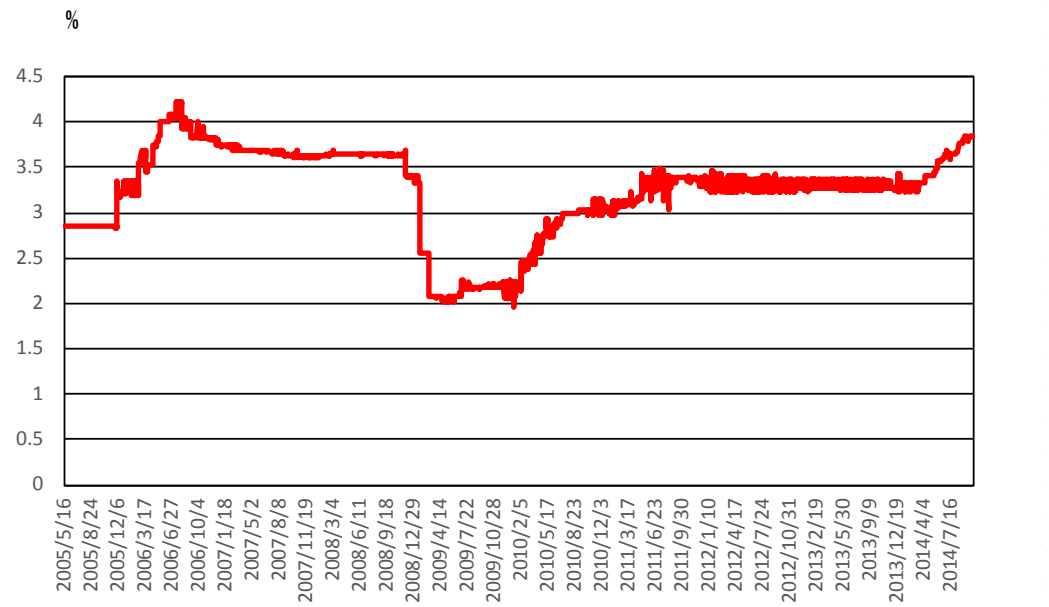

Figure 1 Movement of six month Islamic rate of return

Note:

Sample period is from May 16, 2005 to October 17, 2014.

Data source is Bloomberg.

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Table 1

Descriptive Statistics of Data for Analysis

Variable	Average	SD	Min	Max	Median
IWDP	2.993	0.460	2.000	3.610	3.010
IS3M	3.186	0.481	1.980	3.950	3.250
IS6M	3.245	0.489	1.960	4.230	3.335
IS12M	3.339	0.508	1.930	4.430	3.430
CO3M	3.159	0.468	1.990	3.850	3.210
CO6M	3.207	0.468	2.020	3.900	3.260
CO12M	3.292	0.488	2.000	4.100	3.350

Notes:
Sample period is from May 16, 2005 to October 17, 2014.
IWDP = Interbank Deposit 1 week, IS = Islamic Deposit, CO = Conventional Deposit

3. METHODOLOGY

3.1 Unit Root Test

Because empirical analysis from the mid-1980s through the mid-1990s shows that such data as interest rates, foreign exchanges, and stocks are non-stationary, it is necessary to check whether the data used in this paper contain unit roots. The Augmented Dickey-Fuller (ADF) test and the Kwiatowski-Phillips-Schmidt-Shin (KPSS) test are used.[1]

The ADF defines the null hypothesis as "unit roots exist" and the alternative hypothesis as "unit roots do not exist." Fuller (1976) provides a table for the ADF test. The KPSS test defines the null hypothesis as "unit roots do not exist" and the alternative hypothesis as "unit roots exist." First, the original data are checked to verify whether they contain unit roots. Next, the data with first difference are analyzed to determine whether they have unit roots to confirm that they are I (1) process.

3.2 Engle-Granger Cointegration Test

Here the Engle-Granger cointegration test is used to measure the relationship between the one-week interest rate and the conventional interest rate or Islamic rate of return on three-, six-, and 12-month maturities. In the test of co-movement by cointegration, equation (2) is estimated by Ordinary Least Squares (OLS) to determine whether the residual contains unit roots.

$$DR_t = \alpha + \beta\, 1WDP_t + u_t \qquad (2)$$

DR_t = conventional interest rate or Islamic rate of return

$1WDP_t$ = one week interest rate

When series DR_t and $1WDP_t$ are both non-stationary I (1), they are said to be in a

[1] See Dickey and Fuller (1979), Dickey and Fuller (1981), and Kwiatkowski et al. (1992).

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relationship of cointegration if their linear combination is stationary I (0). The cointegration relationship between DR_t and $1WDP_t$ implies that the one-week interest rate and the conventional interest rate or Islamic rate of return move together in the long-run equilibrium.

In addition to testing whether the Islamic rate of return and the conventional interest rate are in a cointegration relationship, the cointegration vector, β in equation (2), is checked using the dynamic OLS method developed by Stock and Watson (1993). Equation (3) is used to test whether $\beta = 1$ can be rejected. $\Delta 1WDP_t$ is the lead and lag variables of the one-week interest rate. As for the number of lead and lag terms, 12 is used. Hirayama and Kasuya (1996) provide empirical analysis using Rats procedure SWDYNAMIC.PRG. If $\beta = 1$ cannot be rejected, the conventional interest rate or Islamic rate of return changes to the same degree as the one-week interest rate. The test of the cointegration vector is only conducted on a pair of samples when they are in a cointegration relationship.

$$DR_t = \alpha + \beta 1WDP_t + \sum_{i=-p}^{p} b_i \Delta 1WDP_{t-i} + u_t \qquad (3)$$

This test is conducted on a pair-wise basis as shown below:

(1) Pair-wise analysis of the one-week interest rate and conventional interest rate
One-week interest rate and conventional interest rate on a three-month maturity.
One-week interest rate and conventional interest rate on a six-month maturity.
One-week interest rate and conventional interest rate on a 12-month maturity.

(2) Pair-wise analysis of the one-week interest rate and Islamic rate of return
One-week interest rate and Islamic rate of return on a three-month maturity.
One-week interest rate and Islamic rate of return on a six-month maturity.
One-week interest rate and Islamic rate of return on a 12-month maturity.

An interpretation of the results divided into three cases can be made in the following way.

Case	cointegration	cointegration vector
Ⅰ	no	--
Ⅱ	yes	β＝1 cannot be denied
Ⅲ	yes	β＝1 can be denied

Ⅰ The one-week interest rate does not co-move with the conventional interest rate or Islamic rate of return. The one-week interest rate is segmented from the conventional interest rate or Islamic rate of return. Monetary policy has no impact on conventional or Islamic deposit markets.

Ⅱ The one-week interest rate co-moves with the conventional interest rate or Islamic rate

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of return. The one-week interest rate is in a one-to-one relationship with the conventional interest rate or Islamic rate of return. Monetary policy has a strong impact on conventional or Islamic deposit markets.

III The one-week interest rate co-moves with the conventional interest rate or Islamic rate of return. The one-week interest rate is not in a one-to-one relationship with the conventional interest rate or Islamic rate of return. Monetary policy has some impact on conventional or Islamic deposit markets.

3.3 Granger Causality Test

With regard to the variables $1WDP_t$ (one-week interest rate) and DR_t (conventional interest rate or Islamic rate of return), the Granger causality test checks whether $1WDP_t$ affects DR_t, DR_t affects $1WDP_t$, or $1WDP_t$ and DR_t mutually affect one another in a time series model. The original data are usually transformed into the change ratio to avoid the problem of spurious regression, but using these data causes errors. Toda and Yamamoto (1995) developed the Granger causality test, which uses non-stationary data directly. In this paper, the null hypothesis H_0 regarding the influence of $1WDP_t$ on DR_t and the influence of DR_t on $1WDP_t$ is tested using pair-wise rates of the same maturity. According to this method, trend term t and $p + 1$ (original lag plus one) are added for the estimation. Original lag length is decided by the AIC standard.

$$DR_t = u_0 + u_t + \sum_{i=1}^{p+1} \alpha_i DR_{t-i} + \sum_{i=1}^{p+1} \beta_i 1WDP_{t-i} + u_t \quad (4)$$

$$H_0: \beta_1 = \beta_2 = \cdots \beta_p = 0$$

$$H_1: Either \ \beta_i \neq 0 \quad (i = 1,2,\cdots,p)$$

$$1WDP_t = v_0 + v_t + \sum_{i=1}^{p+1} \gamma_i DR_{t-i} + \sum_{i=1}^{p+1} \delta_i IWDP_{t-i} + u_t \quad (5)$$

$$H_0: \gamma_1 = \gamma_2 = \cdots \gamma_p = 0$$

$$H_1: Either \ \gamma_i \neq 0 \quad (i = 1,2,\cdots,p)$$

The F test is conducted by estimating (4) and (5) through OLS and summing the squared error. If the null hypothesis of H_0 in equation (4) is rejected, $1WDP_t$ is considered to explain DR_t. In other words, the one-week interest rate Granger-causes the conventional

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interest rate or Islamic rate of return. If the null hypothesis of H_0 in equation (5) is rejected, DR_t is considered to explain $1WDP_t$. In other words, the conventional interest rate or Islamic rate of return Granger-causes one-week interest rate.

4. RESULTS

4.1 Unit Root Test

First, ADF and KPSS tests are conducted on the original series. The results do not eliminate the doubt that the original data have unit roots because both tests show non-stationarity. The results are shown in Table 2 and Table 3.

Table 2

ADF unit root test (Original Series)

Variable	Without Trend	With Trend
IWDP	0.240	−1.370
IS3M	0.703	−0.926
IS6M	0.560	−1.184
IS12M	0.417	−1.430
CO3M	0.576	−1.162
CO6M	0.575	−1.206
CO12M	0.642	−1.165

Notes:
* indicates significance at the 5% level.
5% critical values are −2.86 (without trend) and −3.41 (with trend).
IWDP = Interbank Deposit 1 week, IS = Islamic Deposit, CO = Conventional Deposit

Next, ADF and KPSS tests are conducted for the data with a first difference. The results show that all variables except for the one-week interest rate are stationary. The one-week interest rate is non-stationary at the 5% level, but stationary at the 1% level. Thus it is appropriate to think that all of the variables used for the analysis are non-stationary I (1) variables and to judge that non-stationary time series can be used. The results are shown in Tables 4 and 5.

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Table 3

KPSS unit root test (Original Series)

Variable	Lag = 4		Lag = 12	
	Level Stationary	Trend Stationary	Level Stationary	Trend Stationary
ID1W	6.829*	4.543*	2.638*	1.756*
IS3M	5.146*	4.716*	1.988*	1.823*
IS6M	4.957*	4.661*	1.918*	1.804*
IS12M	4.722*	4.348*	1.828*	1.684*
CO3M	4.725*	4.551*	1.827*	1.760*
CO6M	5.067*	4.688*	1.961*	1.815*
CO12M	5.008*	4.509*	1.941*	1.748*

Notes:
* indicates significance at the 5% level.
5% critical values are 0.463 (level stationary) and 0.146 (trend stationary).
ID1W = Interbank Deposit 1 week, IS = Islamic Deposit, CO = Conventional Deposit

Table 4

ADF unit root test (first difference series)

Variable	Without Trend	With Trend
IWDP	−50.549*	−50.430*
IS3M	−33.895*	−33.849*
IS6M	−33.259*	−33.209*
IS12M	−34.927*	−34.870*
CO3M	−13.628*	−15.642*
CO6M	−35.656*	−35.597*
CO12M	−26.396*	−26.380*

Notes:
* indicates significance at the 5% level.
5% critical values are −2.86 (without trend) and −3.41 (with trend).
IWDP = Interbank Deposit 1 week, IS = Islamic Deposit, CO = Conventional Deposit

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Table 5

KPSS unit root test (first differenced series)

Variable	Lag = 4		Lag = 12	
	Level Stationary	Trend Stationary	Level Stationary	Trend Stationary
IWDP	0.188	0.187*	0.189	0.188*
IS3M	0.156	0.143	0.216	0.199
IS6M	0.115	0.104	0.162	0.146
IS12M	0.079	0.076	0.125	0.121
CO3M	0.120	0.112	0.160	0.149
CO6M	0.091	0.084	0.146	0.135
CO12M	0.067	0.063	0.116	0.109

Notes:
* indicates significance at the 5% level.
5% critical values are 0.463 (level stationary) and 0.146 (trend stationary).
1% critical values are 0.739 (level stationary) and 0.216 (trend stationary).
Level Stationary (Lag=4) is not significant at the 1 % level.
IWDP = Interbank Deposit 1 week, IS = Islamic Deposit, CO = Conventional Deposit

4.2 Engle-Granger Cointegration Test

Pair-wise analyses are conducted to check the relationships between the one-week interest rate and the conventional interest rate or Islamic rate of return on three-, six-, and 12-month maturities. The results of all tests show that the one-week interest rate is in a relationship of cointegration with the conventional interest rate and the Islamic rate of return on three-, six-, and 12-month maturities. The results are shown in Table 6.

Next, the dynamic OLS method of Stock and Watson (1993) is used to check whether β indicated in equation (2) = 1. The results are shown in Table 8. The results of all tests show that $\beta = 1$ cannot be rejected in every pair, which means that a 1% increase in the one-week interest rate leads to a 1% increase in the conventional interest rate or Islamic rate of return on three-, six-, and 12-month maturities. The results are shown in Table 7.

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Table 6

Cointegration test

Variable	Test Statistics
1D1W, IS3M	−4.305*
1D1W, IS6M	−4.461*
1D1W, IS12M	−3.919*
1D1W, CO3M	−5.107*
1D1W, CO6M	−4.988*
1D1W, CO12M	−3.762**

Notes:
*,** indicates significance at the 5% and 10% levels respectively.
5% critical value is −3.7809 from MacKinnon (1991).
10% critical value is −3.4959 from MacKinnon (1991).
ID1W = Interbank Deposit 1 week, IS = Islamic Deposit, CO = Conventional Deposit

Table 7

Cointegration vector test

Variable	β	Modified SE	Modified t Value
1D1W, IS3M	1.022	0.027	0.815*
1D1W, IS6M	1.027	0.032	0.843*
1D1W, IS12M	1.045	0.042	1.071*
1D1W, CO3M	0.985	0.031	0.483*
1D1W, CO6M	0.983	0.022	0.773*
1D1W, CO12M	1.010	0.028	0.357*

Notes:
* means that $\beta = 1$ cannot be rejected since modified t value is smaller than 5% critical value (1.96).
ID1W = Interbank Deposit 1 week, IS = Islamic Deposit, CO = Conventional Deposit

4.3 Granger Causality Test

Pair-wise Granger causality tests are conducted on the one-week interest rate and the conventional interest rate or Islamic rate of return on three-, six-, and 12-month maturities. Mutual causalities are confirmed. When these causalities are compared, the size of the causality from the conventional interest rate or Islamic rate of return on three-, six-, and 12-month maturities to the one-week interest rate is higher than that from the one-week

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interest rate to the conventional interest rate or Islamic rate of return on three-, six-, and 12-month maturities. The results are reported in Table 8.

5. CONCLUDING REMARKS

This paper has two focuses. Firstly, it analyzes the transmission mechanism of benchmark interest rate to conventional interest rates and Islamic rates of return in Malaysia. The operating target is set on a benchmark rate by Bank Negara Malaysia. Secondly, it offers implications for the formation of conventional interest rates and Islamic rates of return in the Malaysian deposit market, considering the transmission mechanism of monetary policy. This paper are quite original because the related literatures such as Chong and Liu (2009), Cevik and Charap (2011), and Ito (2013) do not focus on the transmission of benchmark interest rate to conventional interest rates and Islamic rates of return in Malaysian deposit market.

Table 8
Granger Causality Test

Variable		Variable	
1week to Conventional		Convetional to 1 week	
IWDP → CO3M	6.206*	CO3M → IWDP	13.154*
IWDP → CO6M	3.703*	CO6M → IWDP	20.191*
IWDP → CO12M	2.876*	CO12M → IWDP	15.781*
1week to Islamic		Islamic to 1 week	
IWDP → IS3M	4.349*	IS3M → IWDP	20.498*
IWDP → IS6M	3.743*	IS6M → IWDP	14.904*
IWDP → IS12M	3.047*	IS12M → IWDP	14.059*

* indicates significance at 1 % level.
As for the number of lags, one ia added to AIC selection.
IWDP = Interbank Deposit 1 week, IS = Islamic Deposit, CO = Conventional Deposit

Monetary policy has a strong impact both on conventional interest rates and Islamic rates of return because yield curves of both conventional interest rates and Islamic rates of return (one-week, three-, six- and 12-month) are influenced by one week interbank rate. Bank Negara Malaysia controls conventional interest rates and Islamic rates of return up to 12-months in the Malaysian deposit market. In addition to this point, it is also possible that market participants anticipate changes in monetary policy operation in advance, thus prior increases of conventional interest rates and Islamic rates of return propelling benchmark interest rate. This is because the impacts of the causality from the conventional interest rate and the Islamic rate of return on all maturities to the one-week

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interest rate are greater than those from the one-week interest rate to the conventional interest rate and the Islamic rate of return on all maturities.

From these results, it is concluded that conventional interest rates and Islamic rates of return form short term deposit market up to 12-month through the impact caused by the monetary policy operation. This implication is consistent with the fact that the share of Islamic deposits in Malaysia rose from 5% to 24.5% between 1999 and 2014. As the Association of Islamic Banking Institutions Malaysia (AIBIM) states, the ultimate objective of the Malaysian model of an Islamic financial system is to operate in parallel with the conventional financial system, coexisting and competing with conventional banking in Malaysia. So far, the Malaysian government's policy to promote Islamic finance in the country has been successful.

Cointegration analysis is used to measure the impact of monetary policy operation. But there is room to analyze the direct impact of monetary policy operation on Islamic rates of return and conventional interest rates as in Cook and Hahn (1989) when changes of monetary policy operation are announced by Bank Negara Malaysia. There is also a room to use a variable of monetary policy expectations such as OIS (Overnight Indexed Swap) rate instead of one-week interest rate. I would like to suggest this avenue for further study.

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REFERENCES

[1]Ascarya (2014), "Monetary Policy Transmission Mechanism under Dual Financial System in Indonesia: Interest-Profit Channel," *International Journal of Economics, Management and Accounting*, 22, 1-32.

[2]Cevik, S. and Charap, J. (2011), "The Behavior of Conventional and Islamic Bank Deposit Returns in Malaysia and Turkey," *IMF Working Paper*, WP/11/156.

[3]Chong, B.S. and Liu, M.-H. (2009), "Islamic Banking: Interest-free or Interest-based?," *Pacific-Basin Finance Journal*, 17, 112-144.

[4]Cook, T. and Hahn, T. (1989), "The Effects of Changes in the Federal Funds Rate Target on Market Interest Rates in the 1970's," *Journal of Monetary Economics*, 24, 331-351.

[5]Dickey, D.A. and Fuller, W.A. (1979), "Distribution of the Estimators for AutoregressiveTime Series with a Unit Root," *Journal of the American Statistical Association*, 74, 427-431.

[6]Dickey, D.A. and Fuller, W.A. (1981), "Likelihood Ratio Statistics for Autoregressive

ISSN: 2304-1013 (Online); 2304-1269 (CDROM); 2414-6722 (Print)

Time Series with a Unit Root," *Econometrica*, 49, 1057-1072.

[7]Engle, R.F. and Granger, C.W.J. (1987), "Co-integration and Error Correction: Representation, Estimation and Testing," *Econometrica*, 55, 251-276.

[8]Ergec, E.H. and Arslan, B.G. (2013), "Impact of Interest Rates on Islamic and Conventional Banks: The Case of Turkey," *Applied Economics*, 45, 2381-2388.

[9]Fuller, W.A. (1976), *Introduction to Statistical Time Series*, John Wiley & Sons, Inc.

[10]Granger, C.W.J. and Newbold, P. (1974), "Spurious Regressions in Econometrics," *Journal of Econometrics*, 2, 111-120.

[11]Hirayama, K. and Kasuya, M. (1996), "Financial Deregulation and Divisia Monetary Aggregates in Japan," Mullineux, A (ed.), *Financial Innovation, Banking and Monetary Aggregates*, Edward Elgar, 104-130.

[12]Ito, T. (2013), "Islamic Rates of Return and Conventional Interest Rates in the Malaysian Deposit Market," *International Journal of Islamic and Middle Eastern Finance and Management*, 6, 290-303.

[13]Kwiatkowski, D., Phillips, P.C.B., Schmidt, P., and Shin, Y. (1992), "Testing the Null Hypothesis of Stationarity against the Alternative of a Unit Root," *Journal of Econometrics*, 54, 159-178.

[14]MacKinnon, J. (1991), "Critical Values for Cointegration Tests", Engle, R.F. and C.W.J. Granger (ed.), *Long-Run Economic Relationships: Readings in Cointegration*, Oxford University Press, 267-276.

[15]Pahala, I. (2016), "Zakat is More Significant Than Tax," *Review of Integrative Business and Economics Research*, 5, 286-294.

[16]Sarac, M. and Zeren, F., (2015), "The Dependency of Islamic Bank Rates on Conventional Bank Interest Rates: Further Evidence from Turkey," *Applied Economics*, 47,669-679.

[17]Stock, J.H. and Watson, M.W. (1993), "A Simple Estimator of Cointegrating Vectors in Higher Order Integrated Systems," *Econometrica*, 61, 783-820.

[18]Toda, H.Y. and Yamamoto, T. (1995), "Statistical Inference in Vector Autoregressions with Possibly Integrated Processes," *Journal of Econometrics*, 66, 225-250.

ISSN: 2304-1013 (Online); 2304-1269 (CDROM); 2414-6722 (Print)