

Interactions between Economic Growth, FDI and Islamic Banking Development in Turkey

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Abstract

In this research paper, the quarter data has been collected from Turkish Central Bank in order to determine the relationship between economic growth, FDI and participation banks of Turkey over the periods of 2002 - 2014. Several econometrical models have been implemented to reveal this relation among variables. In this context, it has been found that there is a long-term linkage between economic growth, FDI and breakdown of participation funds in Islamic banking by implementing Johansen co-integration test. On the other hand, according to Granger causality test (GCT), when the lag number is 3, there is a bidirectional relationship between GDP and participation funds in Islamic banking. According to results of both Johansen co-integration and Granger causality test, the contribution of Islamic banking to the economic growth of Turkey is so vital. The linear regression analysis has to be used to reply the research questions. The results indicated that there is the considerable impact of GDP on Islamic bank deposits in Turkey which is founded 0.0006.

Keywords: economic growth, FDI, Islamic banking, vector autoregressive model, impulse response, variance decomposition, Granger causality test, linear regression, Johansen co-integration test

1. Introduction

The financial growth characterized as a rise in the volume of financial requirements of banking institutions and financial transactions on capital markets. In a macro view, economic growth has long been the main issue of development economics by providing credits to entrepreneurs and investors to enhance industry and trade. Realistically, the banking institution performs a growth-promoting role if it can steer financial resources towards the industrial area that demand those most. When the banking institution and its sector are more advanced, more financial assets can be distributed into production channel and thus it can promote economic development.

Nowadays, Islamic banking is growing day by day, especially in terms of contribution to the construction sector. There are nearly 270 Islamic banking institutions worldwide including total market capitalization of Islamic banking at more than \$ 13 billion. Furthermore, the total assets of participation bank are predicted as \$ 265 billion and required investments are more than \$ 400 billion. Breakdown of participation funds in Islamic banking are forecasted at above of \$ 202 billion among 10 – 20 percent globally. In addition, Islamic bonds are estimated as \$ 30 billion and Islamic equity funds are estimated as \$ 3.3 billion globally by around 25 % at last decade and the worldwide Takaful premium is calculated approximately as \$ 2 billion.

The majority of Islamic banks are in operation in order to act as sharia banking units in conventional banks. In addition, participation banking is one of the popular and rapid developing parts of the financial services market in the Islamic countries. The Islamic financial system paid regard to enhancing their operations notably in participation funds and deposits. The yearly growth rate of Islamic banking is % 15 averagely at the last half decade in the world. Furthermore, the certain principles of Islamic banking inspire interest from Muslims and non-Muslims alike as they try to find out how a system that forbids the use of interest has become so extensive.

The system of Islamic justice is involved rejecting interest and all its other pragmatist components from the economic perspective. In this regard, the principle of Islamic banking is catalyzing borrowing, lending and investment activities on a risk sharing foundation. Thus, this enables market forces to reveal the performance of

capital instead of adjusting the interest rate to hinder and manipulate the free market operation. The Islamic banking provides the appropriate rate of capital formulation in order to perform stable economic growth and equal opportunities.

Islamic banking principles are consisting of the chain of invariable rules that money is not an earning asset. The Islamic rules and regulations that are sharia discourses some religious constituents including social, ethical, moral and to provide fairness for the benefit of the whole community. Additionally, Islamic finance concentrates on the economic structure in terms of wealth allocation, the role of the government and economic fairness. The rules and regulations of Islamic banking facing risk sharing, personal rights and duties and right of possession are a complete tool of the Islamic legislation emphasizing the financial system.

Vital components of microfinance could be conceived coincide with the wider aims of Islamic finance. The two similar systems involve the concept of risk sharing and entrepreneurship by providing fairness of income distribution. Constitutively, the concept of an interest-free loan is a precious example regarding the both microfinance's and Islamic banking's mutual goals. Taking into account this fact, the close affiliation between two systems would not only ensure conspicuous advantages for low-income individuals in order to keep them in credit markets and sectors as an entrepreneur but investing in microenterprises would bring to investors an opportunity to gain solid returns in Islamic banks as well.

There are kinds of funds in conventional banking and one of the widely used ones is mutual funds. For this reason, to comprehend Islamic mutual funds, the general form of mutual funds has to be known apparently. It is completely a type of safer investment for the investor because they do not need any technical knowledge regarding investment. They invest money into a mutual funds company under a deal to earn maximum return. Mutual fund company receives its commission from every investor. According to the Islamic mutual funds process, all principle is totally similar. However, fund managers have to operate the money as profit and loss basis with the interest-free banking system.

The majority of the empirical research papers have been examined in the several fields of Islamic finance. The theoretical models improved to demonstrate that the Islamic banking which depends on significantly upon the financial components which are preferably comparing with the traditional financial system with regards to equity stability and efficiency. Most of the researchers have emphasized the significance of Islamic banking growth in the process of economic growth.

The research paper is consisting of 4 parts and the structure of this research paper is as follows: Section 1 contains general information regarding the relationship between Islamic banking, GDP, FDI. Section 2 more concentrate on the discussions and major issue of the academicians' findings which are combined with this paper's research results. Section 3 mostly focuses on the impact of Turkey's GDP and FDI on participation funds in Islamic banking by using econometrical models including VAR, impulse response, variance decomposition, Johansen co-integration test, Granger causality test and linear regression. Section 4 finalizes and expounds the research results of this paper by revealing the differences and similar issues of other research papers in the academic literature.

2. Literature Review

The major goal of Islamic financial institutions is creating prosperity in the community and eventually to enhance the economic growth. For this purpose, Islamic banks should not replicate the applications and aims of conventional banks, so they can perform a more vital role than conventional banks in developing the economic performance of the regions (Abduh & Chowdhury, 2012).

Abduh and Omar (2012) found an important relationship among Islamic financial growth and economic development in short term and long term periods. However, the relationship is neither Schumpeter's supply-leading nor Robinson's demand following. It seems as a two-sided relationship.

Goldsmith (1955) elaborate on the precursor components of economic growth analysis and others significant indicators such as financial intermediaries institutions. He implemented the ratio of the financial mediation assets to the economic growth in order to work on the data of 35 nations from 1860 to 1963 and found the existence of a parallelism among GDP and financial development. He also found that financial structure in the economy triggers GDP and enhances economic growth.

Yusuf and Bahlous (2013) investigated that Islamic financial institutions trigger Gross Domestic Product (GDP) from the year of 2000 to 2009 both in short-term and long-term. The result supports tenets of Islamic banking by ensuring an effective channel for fertile resources in order to be transmitted to GDP. The research results of this

research paper consistent with their findings regarding the positive effect of the economic growth on participation funds of Islamic banking.

Al-Oqool, Okab, and Bashayreh (2014) found that there is two-sided long-term granger causality among economic growth and total finance of Jordanian Islamic banks which indicates the sustainable contribution of Jordan Islamic bank to the social and economic growth. The relation seems to be a one-sided relationship among economic growth and total Jordanian Islamic time and saving deposits running from economic growth to total Jordanian Islamic time and saving deposits reflects the extreme liquidity trouble that Jordan Islamic Bank suffers from it. In virtue of short term causality, there is no vital relationship among an investigation of financial Islamic banking development and causality on Jordanian economic growth.

Furqani and Mulyany (2009) determined the relationship among the total Islamic bank financing and real GDP per capita, fixed investment and trade activities in Malaysia between the period of 1997 and 2005. The findings indicate that investment granger causes Islamic banks to improve in the short run, whereas it appears to be a bi-directional causality relationship among IBD and fixed investment in long-run.

According to Kahf, Ahmed, and Homoud (1998) Islamic banking is inherently connected with the products and commodities market. Moreover, Islamic banking is restricted by the transaction in products and services market whether it is operated by means of lease arrangements or sharing sale. This makes Islamic banking connected to tangible transactions. Correspondingly, Sharing modes are pertinent for innovative entrepreneurs that contain real-life business by carrying out to create a profit that can be allocated among the businessman and the Islamic institution. In this regard, these modes are those that comprise a real and tangible exchange of goods from one side to another side whereby financing is used by the real sale of goods. The similar procedure performs to leasing where leased commodities are the crucial components around which financing is built as well.

Dusuki and Abozaid (2007) laid emphasis on Islamic socio-economic objectives in terms of stability, social justice, economic growth and efficiency which is ensured by Islamic banking institutions with equity-based financing system. Similar commentaries were made by Haron (1996) and Yousef (2004) supported Dusuki and Abozaid's (2007) expression in their article by exemplifying some common aspects of the empirical work and their experimental results.

Cetin (2014) expressed that banking institutions imperative mission is to obtain deposits from clientele, companies and use those funds for business and customers' requirements. Islamic banks fundamentally gain deposit from households, companies and use those funds for growth of business volume such as ensuring credit for production facilities. Islamic banks do not provide credit directly with interest rate and participate in profit loss transactions. In addition, he specified that the Islamic banking deposits have been rising so swiftly in Turkey from 2003 to 2013 as well. Islamic banks and conventional banks acutely affected by financial systematic risk processes owing to globalization and global financial turmoil. Besides, he derived the data as quarterly from 2005 to 2013 and found that there is unidirectional linkage among quarterly Libor rates and Islamic banking deposits and first lag value of Turkish participatory banks deposits has a crucial impact on Turkish participatory banks deposits.

The Malaysian government put into practice influential financial system to trigger economic growth, investments and saving. The other significant political move of the government is enhancing standardization, innovation and regulation of Islamic banking despite some obstacles of limitations and restrictions. Islamic banking did not have sufficient support from the community in Malaysia. The Malaysian government should raise awareness of its citizens regarding Islamic banking and eliminate their concerns against it (Khan & Bhatti, 2008).

Islamic Mutual Funds are one of the most favorite investment instruments in the Qatar capital market and Qatar Islamic Bank is the main sponsor of Mutual Funds in Qatar. In addition, Doha Securities Market is maintaining Islamic capital and secondary markets. It is sustaining a considerably important role in enhancing Islamic finance at both domestic and international levels as well. Qatar is the smallest but richest country of Middle East owing to an inflow of petrol profits in its economy for a decade. One of the main objectives of the Qatari government is to perform the development projects and infrastructure. Islamic banking plays a very crucial role to carry into effect the project and triggers the economic growth in Qatar (Khan & Bhatti, 2008).

Apak and Acikgoz (2011) pointed out the share of Islamic banking in the sector and implemented performance indicator in order to determine financial stability in the market. So many indicators of the banking sector as a whole and the participation banks that claims themselves to be founded with regard to Islamic principles which is discussed in their research paper. They investigated the impact of Islamic banking on financial markets and its stability in Turkey. The major indicators in terms of financial stability are asset, equity, branch, personnel growth and profitability. It has been found that there is a positive effect of participation banks on the banking sector and

its financial stabilization. However, Apak and Acikgoz (2011) laid emphasis on the risk of trade deficit, current deficit, inflation and import dependent economy that required new measures by the Turkish government in the near future. Due to that fact, the participation banks will be face instability of performance.

3. Methodology and Data Analysis

The major aim of this research is investigating the impact of macroeconomic variables such as GDP and FDI on deposits of Islamic banking from 2002 to 2014 as quarterly periods in Turkey which is a gap in the literature. The major questions are: Does Turkey's GDP has a vital effect on participation funds in Islamic banking (deposit) ? Does Turkey's FDI has a crucial effect on participation funds in Islamic banking (deposit) ? The data were derived from tcmb.gov.tr/ and stlouisfed.org/. The Islamic bank deposits data belongs to four Institutions including Albaraka, KuveytTurk, Bank Asya and Turkiye Finans in Turkey. Logarithm was applied to the data and the sample size is determined as 52 which is more than "n > 30" to make it parametrically test. Islamic banking deposit is determined as dependent variable and GDP and FDI is determined as the independent variable. In order to reply the research questions regarding both their long-run relationship and impacts of the independent variables (GDP and FDI) on Islamic banking deposit, the linear regression and Johansen co-integration tests were used exactly.

Al-Oqool, Okab, and Bashayreh (2014) determined the impact of Islamic banking on economic growth by implementing Johansen cointegration test and Granger causality test from 1980 to 2012 in Jordan. They determined GDP as economic growth indicator and total deposits and funds for Islamic banking development. There is a long-term relationship between Islamic banking and economic growth which is consistent with this paper's research findings. They also found that there is one-way unilateral relationship from economic growth to Islamic banking. However, according to this paper research finding there is a bi-directional relationship between GDP and participation funds in Islamic banking at lag 3 (see Table 9).

Table 1. Linear regression

$$LN(GDP)_t = \beta_0 + \beta_1 LN(Bank\ Deposits)_t + ut$$

Variable	Coefficient	Std. Error	t-Statistic	Prob.
GDP	1.933350	0.525414	3.679671	0.0006
C	-2.790520	2.494247	-1.118782	0.2689
@TREND	0.034651	0.023092	1.500539	0.1402
AR(1)	0.970690	0.046580	20.83917	0.0000
SIGMASQ	0.008044	0.001955	4.115524	0.0002
R-squared	0.896240	Mean dependent var		8.827226
Adjusted R-squared	0.995920	S.D. dependent var		1.476890
S.E. of regression	0.094339	Akaike info criterion		-1.737793
Sum squared resid	0.418294	Schwarz criterion		-1.550174
Log likelihood	50.18263	Hannan-Quinn criter.		-1.665864
F-statistic	3113.052	Durbin-Watson stat		1.376812
Prob(F-statistic)	0.000000			
Inverted AR Roots	.97			

The linear regression analysis has to be used to reply the research questions. E-views program was implemented to use the econometrical models such as VAR analysis and Granger causality test. AR(1) was added to the model to entrap the autocorrelation. The result of AR(1) is less than 0.05 and according to the graph below the residuals distributed randomly (see figure 1 below). GDP was determined as an independent variable to comprehend the impact on Islamic banking deposits and the results indicated that there is the considerable effect

of GDP on Islamic bank deposits in Turkey which is founded 0.0006. On the other hand, the expression of trend is added to the econometric model via E-views in order to understand that there is spurious regression or not. The result of the trend is more than 0.05 which proves that there is no pseudo relationship among GDP and Islamic banking in terms of deposit.

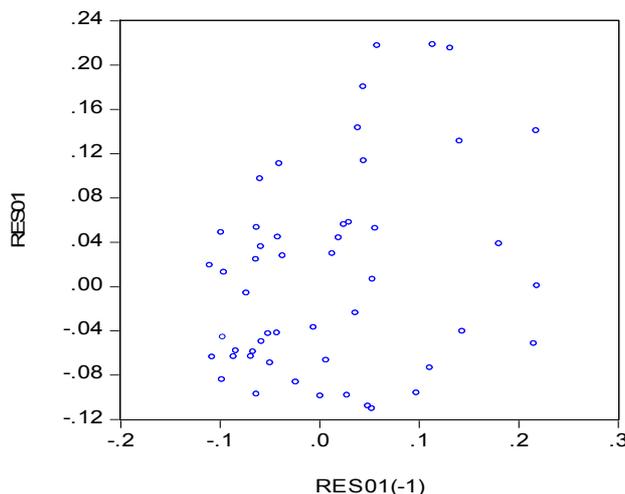


Figure 1. Residual graph of linear regression

According to the ADF Unit Root Test of Bank Deposits at table 2, table3 and table 4 below the data are non-stationary. In order to convert them from non-stationary to stationary, the code of E-views statistical program was implemented to convert the data from non-stationary I (0) to stationary I (1) and the variables have been replaced in the Granger causality test. The results indicated that there is a short-term relationship between Islamic bank deposits and GDP.

Table 2. ADF unit root test of bank deposits (non-stationary)

Null Hypothesis: BANK_DEPOSITS has a unit root		
Exogenous: Constant		
Lag Length: 0 (Automatic - based on SIC, maxlag=10)		
	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	2.570368	1.0000
Test critical values:		
1% level	-3.565430	
5% level	-2.919952	
10% level	-2.597905	
*MacKinnon (1996) one-sided p-values.		

The ADF test results of Bank Deposits demonstrate that the series are non-stationary. The result of the prob is 1.0000 and it must be less than 0.05. Therefore, the series have to be stationary to use GCT.

Table 3. ADF Unit root test of GDP (Non-Stationary)

Null Hypothesis: GDP has a unit root		
Exogenous: Constant		
Lag Length: 5 (Automatic - based on SIC, maxlag=10)		
	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-0.645831	0.8499
Test critical values:		
1% level	-3.581152	
5% level	-2.926622	
10% level	-2.601424	
*MacKinnon (1996) one-sided p-values.		

The ADF test results of GDP demonstrate that the series are non-stationary. The result of prob is 0.8499 and it must be less than 0.05. Therefore, the series have to be stationary to use GCT.

Table 4. ADF unit root test of FDI (Non-Stationary)

Null Hypothesis: FDI has a unit root		
Exogenous: Constant		
Lag Length: 1 (Automatic - based on SIC, maxlag=10)		
	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-2.067723	0.2582
Test critical values:		
1% level	-3.568308	
5% level	-2.921175	
10% level	-2.598551	
*MacKinnon (1996) one-sided p-values.		

The ADF test results of FDI demonstrate that the series are non-stationary. The result of the prob is 0.2582 and it must be less than 0.05. Therefore, the series have to be stationary to use GCT.

After converting the series from non-stationary I (0) to stationary I (1) at Table 5, 6 and 7 below, the variables have been used in the Granger causality test (GCT) and VAR model. The inverse root of AR characteristic polynomials test confirmed all the features of root means appears within the circle which indicated that the VAR model is stationary at lag 1 and lag 2 at Figure 2 below. Thus, variance decomposition and impulse response tests can be done by implementing E-Views.

Table 5. ADF Unit root test after converting I(0) to I(1) for bank deposits (Stationary)

Null Hypothesis: BANK_DEPOSITS1 has a unit root		
Exogenous: Constant		
Lag Length: 0 (Automatic - based on SIC, maxlag=10)		
	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-4.563140	0.0005
Test critical values:		
1% level	-3.568308	
5% level	-2.921175	
10% level	-2.598551	
*MacKinnon (1996) one-sided p-values.		

After converting the series of bank deposits from I (0) non-stationary to I (1) stationary, the empirical analysis can be done. The result of prob 0.0005 indicates that the series are stationary.

Table 6. ADF unit root test after converting I(0) to I(1) for GDP (Stationary)

Null Hypothesis: GDP1 has a unit root			
Exogenous: Constant			
Lag Length: 0 (Automatic - based on SIC, maxlag=10)			
		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-7.737674	0.0000
Test critical values:	1% level	-3.581152	
	5% level	-2.926622	
	10% level	-2.601424	

*MacKinnon (1996) one-sided p-values.

After converting the series of GDP from I (0) non-stationary to I (1) stationary, the empirical analysis can be done. The result of prob 0.0000 indicates that the series are stationary.

Table 7. ADF unit root test after converting I(0) to I(1) for FDI (Stationary)

Null Hypothesis: FDI1 has a unit root			
Exogenous: Constant			
Lag Length: 0 (Automatic - based on SIC, maxlag=10)			
		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-12.21980	0.0000
Test critical values:	1% level	-3.568308	
	5% level	-2.921175	
	10% level	-2.598551	

*MacKinnon (1996) one-sided p-values.

After converting the series of FDI from I (0) non-stationary to I (1) stationary, the empirical analysis can be done. The result of “prob 0.0000” indicates that the series are stationary.

Table 8. Granger causality test at lag 2

Pairwise Granger Causality Tests			
Date: 05/04/16 Time: 23:17			
Sample: 2002Q1 2014Q4			
Lags: 2			
Null Hypothesis:	Obs	F-Statistic	Prob.
GDP1 does not Granger Cause BANK_DEPOSITS1	49	0.55701	0.5769
BANK_DEPOSITS1 does not Granger Cause GDP1		4.27412	0.0201

Table 9. Granger causality test at lag 3

Pairwise Granger Causality Tests			
Date: 05/04/16 Time: 23:18			
Sample: 2002Q1 2014Q4			
Lags: 3			
Null Hypothesis:	Obs	F-Statistic	Prob.
GDP1 does not Granger Cause BANK_DEPOSITS1	48	2.60203	0.0649
BANK_DEPOSITS1 does not Granger Cause GDP1		2.87792	0.0475

Table 10. Granger causality test at lag 4

Pairwise Granger Causality Tests			
Date: 05/04/16 Time: 23:20			
Sample: 2002Q1 2014Q4			
Lags: 4			
Null Hypothesis:	Obs	F-Statistic	Prob.
GDP1 does not Granger Cause BANK_DEPOSITS1	47	2.69988	0.0449
BANK_DEPOSITS1 does not Granger Cause GDP1		2.03817	0.1085

According to Granger causality analysis, when lag number is 4 the GDP does Granger cause Islamic bank deposits in Turkey which mean that the GDP rate of Turkey leads to increase Islamic bank deposits. It can be argued that the risk of trade deficit, current deficit, inflation and import dependent economy that required new measures by the Turkish government to prevent the risk of low-demand for investing in money.

Table 11. Johansen co-integration test

Date: 05/04/16 Time: 12:16				
Sample (adjusted): 2002Q3 2014Q4				
Included observations: 50 after adjustments				
Trend assumption: Linear deterministic trend				
Series: BANK_DEPOSITS GDP FDI				
Lags interval (in first differences): 1 to 1				
Unrestricted Cointegration Rank Test (Trace)				
Hypothesized		Trace	0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None *	0.303031	31.96382	29.79707	0.0277
At most 1	0.153570	13.91311	15.49471	0.0854
At most 2 *	0.105539	5.576706	3.841466	0.0182
Trace test indicates 1 cointegrating Eqn(s) at the 0.05 level				
* denotes rejection of the hypothesis at the 0.05 level				
**MacKinnon-Haug-Michelis (1999) p-values				

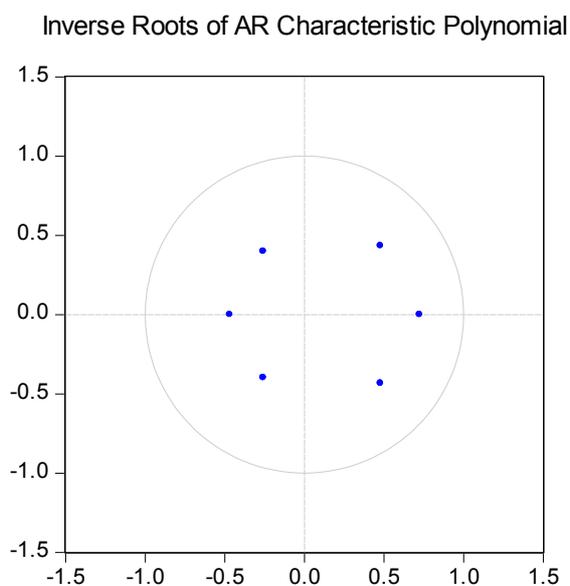


Figure 2. Vector autoregressive model

The inverse root of AR characteristic polynomials test confirmed all the specifications of root means remained within the circle at figure 2 above which proves that the VAR model is stationary at lag 1 and lag 2. Thus, both

impulse response and variance decomposition tests can be done by using E-Views program. At the same time, VAR indicates that the optimal lag structure is 1. Akaike information criterion (AIC) was determined after E-views test results. Besides, since the optimal lag value obtained as 1 in VAR, the residuals' first lagged value was found to take into account the long-term effect of GDP and FDI on participation funds in Islamic banking of Turkey. According to the results of Table 12 variance decomposition tests and Figure 3 impulse response analysis, the impact of GDP is found to increase Islamic banking deposits more than the FDI.

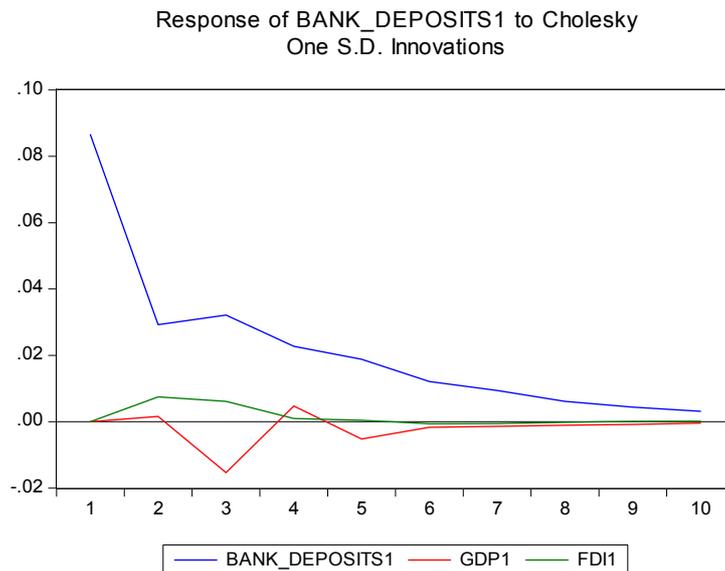


Figure 3. Impulse response

Table 12. Variance decomposition of bank deposits

Period	S.E.	BANK_DEPOSITS		
		1	GDP1	FDI1
1	0.086496	100.0000	0.000000	0.000000
2	0.091626	99.30142	0.030636	0.667948
3	0.098493	96.58681	2.447248	0.965939
4	0.101191	96.53765	2.538492	0.923856
5	0.103061	96.40378	2.703729	0.892495
6	0.103787	96.42484	2.691443	0.883718
7	0.104226	96.43407	2.686347	0.879580
8	0.104412	96.43674	2.686539	0.876719
9	0.104508	96.43750	2.687300	0.875204
10	0.104557	96.43913	2.686133	0.874742

Tanna (2009) found the relationship between productivity changes in the banking sector and FDI using a data set of 566 commercial banks operating within the period of 2000-2004 for 75 countries. The author demonstrated the effect of FDI on productivity change in the banking sector and economic growth. The empirical results indicated that foreign direct investment has a short-run adverse impact on the profitability of banks. However, this is outweighed by a positive long-run rate impact as banks enhance their profitability from knowledge and technology associated with inward FDI. According to the results of this research paper, there is a long-term relationship between the variables of FDI and Islamic banking deposits which is parallel with the findings of Tanna (2009).

4. Conclusion

This research paper examines the short-term and long-term dynamics between economic growth, FDI and participation banking during the quarter period of 2002-2014. It has been found that there is a long-term relationship between economic growth, FDI and breakdown of participation funds in Islamic banking by

implementing Johansen co-integration test. Our results suggest that when lag number is 3 at Granger causality test (GCT), there is a two-way relationship between GDP and participation funds in Islamic banking which proves the short-run relationship among variables during the quarter period of 2002-2014. According to results of both Johansen co-integration and Granger causality test, the contribution of Islamic banking to the economic growth of Turkey is so crucial on short-term and long-term in Turkey. The research results of this paper consistent with Al-Oqool, Okab, and Bashayreh (2014) research result that they also found short term and long term relationship between the variables. The linear regression results of the research paper indicated that the impact of the GDP in between the quarter period of 2002-2014 on participation funds in Islamic banking is so important. The probability is 0.0006 which is a significant finding.

Apak and Acikgoz (2011) specified that the risk of trade deficit, current deficit, inflation and import dependent economy that required new measures by the Turkish government in the near future. There is a significant impact of GDP on Islamic bank deposits in Turkey which is founded 0.0006. This research paper revealed the considerable relationship between the breakdown of participation funds in Islamic banking and macroeconomic factors as empirically. Due to that fact, the Islamic banks will be facing the consequences of macroeconomic trouble. For that reason, the Turkish government should intervene the structure of the economy in terms of its level of inflation and the budget and trade deficit by ensuring the system of free market economy as a macro view. Otherwise, the banking system for both conventional and Islamic will be damaged dramatically. Apak and Acikgoz (2011) also stated in their article regarding that issue.

The findings of research paper prove that participation banking ensures an effective way for productive resources to be transmitted to economic growth. In this regard, employers can observe the use of funds which results in raised companies' profitability via equity participation. There is low interest and low agency cost consistently with attractive credit options in Islamic banking and thus, those factors trigger economic growth. Circumstantially, the conclusion of this paper in the short-run and long-run demonstrate that economic growth contributes more to Islamic banking development in Turkey as well.

The limitation of this research paper is that there is no sufficient data regarding the breakdown of participation funds in Islamic banking notably before 2002. However, after 2002, there are quarterly data for participation funds in Islamic banking and the sample size is 52 which is available TCMB's official website. In fact, there is no sufficient research paper regarding the relationship between FDI and breakdown of participation funds in Islamic banking except some rare research paper in the academic literature.

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