




# “Do Islamic banks contribute to growth of the economy? Evidence from United Arab Emirates (UAE)”

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## Do Islamic banks contribute to growth of the economy? Evidence from United Arab Emirates (UAE)

### Abstract

Islamic finance has grown rapidly in the recent years particularly in the Middle East and the world. It receives a great attention of bankers and financial scholars due to its stability during financial shocks and crises. The paper uses empirical analysis to test the role of Islamic banking in enhancing the economic growth of United Arab Emirates (UAE). Gross Domestic Product (GDP), Gross formation (GF), and Foreign Direct Investment (FDI) are used as representatives for economic growth, while Islamic banks' investments are used as a representative for Islamic financial sector in the UAE. The study uses time series techniques to test the link between the variables. In the current study, co-integration along with error correction models is utilized. All econometric work is done using Eviews. The findings reveal that the causal relationship between Islamic banks' investments and economic growth of UAE is supply-leading direction. Furthermore, the findings depict that Islamic investments have contributed in increasing investments and in bringing FDI into the country in the long-term. The study also shows that there is two-way association between Islamic banks' investments and FDI. It shows that FDI supports Islamic banking and Islamic banking brings FDI. The paper concludes that authorities of the UAE should devote more attention for this growing banking sector by facilitating regulations for establishing new Islamic banks and then creating a suitable environment for their growth and progress in the UAE.

**Keywords:** Islamic banking, investments, economic growth, cointegration, UAE.

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### Introduction

Islamic banking has emerged as an effective tool for funding projects globally. Most of financial institutions and centres are finding clear insights that Islamic finance has already been moving side by side within the global financial system. Islamic finance has the ability to contribute and to meet the challenges of ending poverty and boosting prosperity (World Bank, 2015).

Islamic banking is one of the fastest emerging sectors in the last years. The Islamic finance sector has growing fast over the years, growing at 15-20% annually. Nowadays, assets of Islamic finance are close to US \$2 trillion for all different sectors of the industry (World Bank report, 2015). Islamic banks are playing a positive role in enhancing economic growth in the developing countries due to its distinctive characteristics (Tabash and Dhankar, 2014).

Financial system and banking play an important role in economic activities in all countries. The flow of funds between lenders, investors and borrows creates the cycle of production and progress in the society. The banking sector constitutes about 80 % of the total transactions in the Middle East and is considered a major component in the economic

growth and then economic development. The Middle East markets have recognized that Islamic banking alternative has become increasingly attractive among the investment community, corporate end users, consumers and intermediaries, particularly after global financial crisis in 2008.

The association between the financial sector and economic growth received much debate in the literature. There are three causal relationships between the financial development and economic growth that have been found. The first one is supply-leading which means that the financial sector is a vital factor for the progress of economic growth (Patrick, 1966). The second one is demand following which means the financial development is a result of the development of the real sector (Herms and Lensink, 1996). The third link between them is a bidirectional relationship. Many financial analysts have said that the efficiency of the financial sector is connected to the growth of the economy in any country. One of the empirical studies done by Tabash and Dhankar (2015) concluded a strong association between Islamic finance and economic growth in different countries of Gulf Cooperation council (GCC).

In spite of the considerable spread of Islamic banking sector, most of the work done in this area is theoretical basis. In this study, we try to do something different from the previous work. Therefore, we empirically examine the associations between the development of Islamic financial sector and growth of the economy in one of highly emerging economy in the Middle East and the world, which is the UAE. We encourage policy makers, financial scholars and investors to look into

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the results of this study and try to develop strategies, investments and plans to benefit of this growing financial sector. This study contains six sections as follows. Introduction provides an overview about Islamic finance industry. Section 1 gives a picture about current status of Islamic finance in the UAE. Section 2 covers the literature review. Section 3 covers the methodology. Section 4 outlines the results. Final section presents the conclusion.

## 1. Islamic banking in UAE

Islamic banking in the Middle East and North African (MENA) has now considered as an integral part in the developments of any country. It meets the financial needs of people without conflicting with their religious values and beliefs.

The banking sector of UAE, the biggest banking sector in the GCC by total assets, continued its positive growth rate in 2008 (World Fact Book, 2014). Two new Islamic banks (Dubai based Noor Islamic bank, and Abu Dhabi based Al Hilal Islamic bank) were established in the UAE in 2007 and 2008. There appeared some new heights in the United Arab Emirates (UAE) when we are looking at the development of Islamic banking into the country in the last years (Emirates diary, 2015).

Islamic banks assets increased by 15% in 2015, reaching AED 464 billion, with their share in total assets increased from 18% at the end of 2014 to 19% at the of

2015. At the same time, their investments rose by 15.0%, reaching AED 307 billion, or 22.0% of domestic credit (Central Bank report, 2015).

It is shown from Table (1) that the assets of Islamic banks of UAE increased from 405 billion at the end of 2014 to 464 billion at the end of 2015 with annual growth rate is 15%. At the same time, the Islamic investments also jumped from 266 billion to 307 with annual percentage rate equal to 15.0%. Further, the Islamic banks assets in the UAE rose to greater than US \$ 70,000 million in 2014 from US \$ 1 million in the year of 1990 with a cumulative growth rate 98.57%, as appeared in figure 1. Currently, there are 45 banks working in UAE. 23 out of 45 are national banks, while other 22 banks are foreign banks. There are 8 full-fledged Islamic banks, out of 23 national banks, working under Shariah principles and the other banks have mixed banking operations (Emirates diary, 2015).

Table 1. Assets of Islamic banks in UAE (2014-2015)

	2014 (AED billions)	2015 (AED billions)
	Q4	Q4
Assets	405	464
Percent of total asset banking	18.0	19.0
Islamic investments	266	307
Percent of domestic credit	21.0	22.2

Source: Central Bank of the UAE report.

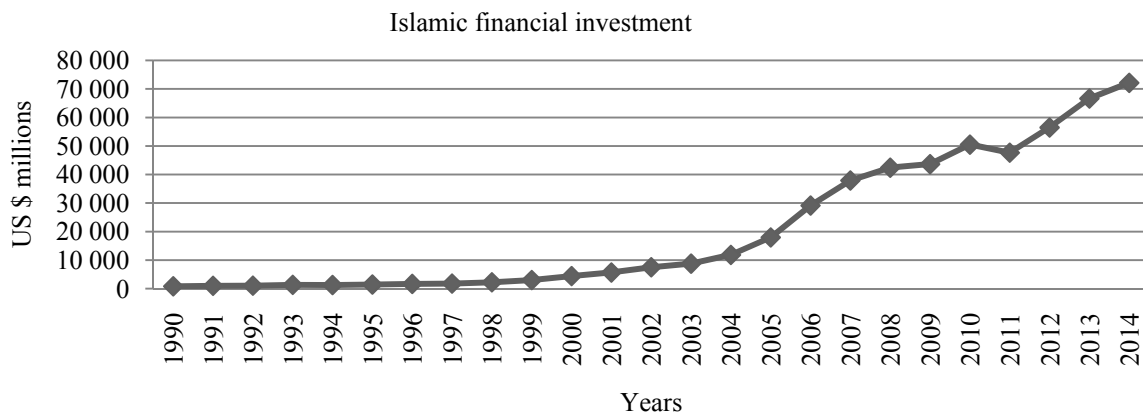


Fig. 1. Islamic financial investments in UAE (1990-2014)

## 2. Literature review

The link between the progress of financial system and economic growth was considered as the most debated issue in the literature to examine, whether the financial sector participates in the growth of real sector or not. Schumpeter (1934), Goldsmith (1969), McKinnon (1973), Shaw (1973), King and Levine (1993) and some other authors have affirmed that finance has an important element of growth, while Robinson (1952), Lucas (1988) and others have concluded it is only a minor growth factor.

Bashir and Hasan (2003) have discussed the relationship between financial development and economic growth in selected countries of Middle East. They used econometric models in their study. They found the size of the financial system affected its economic growth and had a great impact on it. Their findings are consistent with other studies done by King and Levine (1993).

In another study done by Beck and Levine (2004), they studied the effect of stock markets and banks on the growth of the economies of selected countries of the world covering the period 1976-1998. They

used panel data analysis and different econometric analysis techniques. Their findings support the hypothesis that financial sector is vital for economic growth for the countries under the study. In 2005 Abu-Bader and Abu Qarn (2005) tested the causal association between financial sector and growth of the economy in Egypt for 1960-2001. They utilized granger causality tests. They concluded that there is a strong relation between the financial sector and economic growth through mobilizing investments and gross formation in Egypt.

Further, Kar et al. (2011) on his study have selected some developing countries to test the casual relationship between financial development and economic growth. They used time series analysis for the period covering 1980-2007. Their study sample includes countries of the Middle East and North Africa. They concluded that economic growth is a function of financial development in the countries under the study.

In the same year, Bangake and Eggoh (2011) confirmed the viewpoint of existing bi-directional causality between the financial sector progress and the development of the economy in emerging economies. They selected many countries from all parts of the world. Their sample consisted of 71 countries covering the period 1960-2004. They used different econometric modelling techniques. Their findings support the idea that each sector affected the other, i.e., the relationship between the financial development and economic growth is bi-directional.

The studies in the context of Islamic banking and economic growth are limited. For example, Furqani and Mulyany (2009) in their study tested the link between Islamic finance and economic growth for Malaysia. They used methods of cointegration under the period 1997-2005 to test the link between the variables. They found that there is a bi-directional relationship between Islamic banking and long-term investment in Malaysia. In the short run, however, they found that Islamic banking granger cause the

investment to develop in Malaysia. A more recent study on Indonesia by Abduh and Omar (2012) also has confirmed the view that there is a bi-directional association between Islamic banking development and economic growth in Indonesia.

At the same year, Tajgardoan and Noormohamadi (2012) examined the causality link between FDI and Islamic banking. They concluded that there is no co-integration found between FDI and Islamic banking in nine countries from Organization Islamic Conference (OIC) during the period 1995-2010. Their findings affirm that there is a bi-directional relationship between the variables. It means that FDI reinforces Islamic banking and Islamic banking attracts FDI. Among the limited studies conducted on this area, we try to test the relationship between Islamic banks' investments and economic growth of UAE using econometric analysis. The study questions are formulated as follows.

1. Are there any relationships between Islamic banks' investments and growth of the economy in the UAE?
2. Does Islamic banks' investments granger cause the economic growth in the UAE and its direction?

### 3. Research methodology

**3.1. Variables, sources and data collection.** We are using four variables to test the relation between Islamic banks investments and growth of the economy of UAE. Islamic banks investments' are chosen to represent the Islamic financial sector while Gross Domestic Product (GDP), Gross formation (GF) and Foreign Direct Investments (FDI) are chosen to represent the economic sector growth.

We use different databases to fetch the required data to test the relationships between variables. World Bank, International Monetary Funds (IMF), and Islamic banks and financial intuitions databases are used. Different time periods are taken for all variables due to availability of data. The relation between the variables is shown in Figure (2).

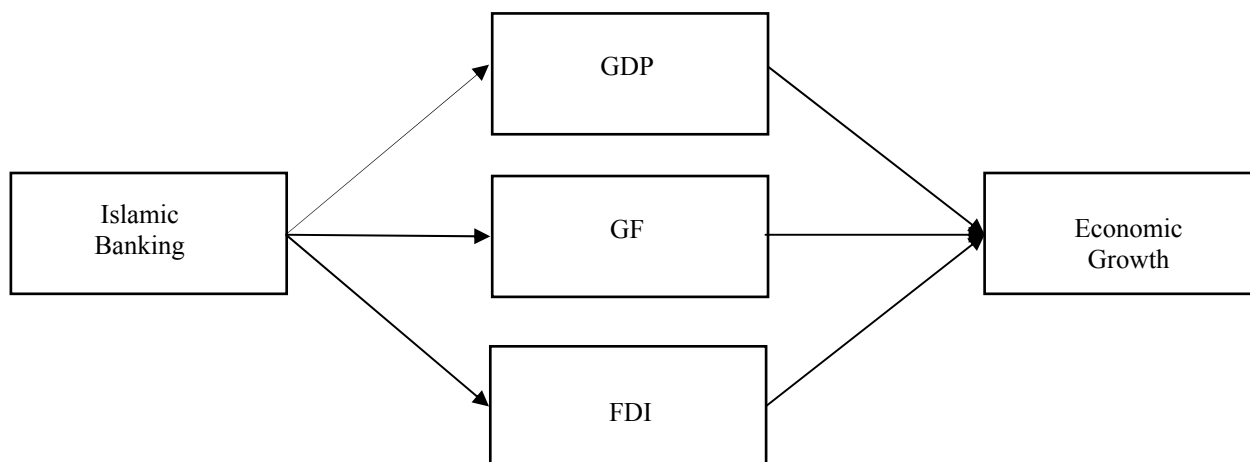


Fig. 2. Study variables

The econometric analysis is done by Eviews. Logarithms of time series were taken to void errors between series.

**3.2. Johansen co-integration test and error correction model (ECM).** The co-integration procedure tests if the long-term association exists between variables or not. Johansen and Juselius in 1990 extended the cointegration work to include two important test statistics, which called the trace and the maximal eigenvalue tests to find and explore, how many co-integrating vectors exist between variables. This means that, if  $y_t \sim I(1)$  and  $x_t \sim I(1)$  then  $\varepsilon_t \sim I(0)$ , so  $y_t$  and  $x_t$  are co-integrated. It has also a co-integration relationship as,  $y_t = \beta x_t + \varepsilon_t$ , moreover, if  $\varepsilon_t$  error term is stationary ( $I(0)$ ), then the variables are co-integrated and the following hypothesis is stated.

$$\Delta \ln GDP = \alpha_0 + \sum_{i=1}^k \alpha_1 \Delta \ln GDP_{t-i} + \sum_{i=0}^k \alpha_2 \Delta \ln GDP_{t-i} + \delta ECT_{t-1} + \varepsilon_t \quad (1)$$

$$\Delta \ln Invest = \alpha_0 + \sum_{i=1}^k \alpha_1 \Delta \ln Invest_{t-i} + \sum_{i=0}^k \alpha_2 \Delta \ln GDP_{t-i} + \delta ECT_{t-1} + \varepsilon_t \quad (2)$$

$$\Delta \ln GF = \alpha_0 + \sum_{i=1}^k \alpha_1 \Delta \ln GF_{t-i} + \sum_{i=0}^k \alpha_2 \Delta \ln Invest_{t-i} + \delta ECT_{t-1} + \varepsilon_t \quad (3)$$

$$\Delta \ln FDI = \alpha_0 + \sum_{i=1}^k \alpha_1 \Delta \ln FDI_{t-i} + \sum_{i=0}^k \alpha_2 \Delta \ln Invest_{t-i} + \delta ECT_{t-1} + \varepsilon_t \quad (4)$$

where:

$\Delta$ : The first difference

$\alpha'_i$ : Short run coefficients

$\delta$ : The speed of adjustment

$k_i(1,2)$ : # of lags

**3.3. Granger causality test.** The work of Granger (1987) lies in the idea that if the two variables are co-integrated, then dynamic relationships are found between them. Granger suggested a time-series data based approach in order to find causality. The equations for granger causality test can be written as shown in equations 5 and 6.

$$X_t = \alpha_0 + \sum \beta_j X_{t-j} + \sum \theta_i Y_{t-i} + u_{1t} \quad (5)$$

$$Y_t = \alpha_0 + \sum \beta_j Y_{t-j} + \sum \theta_i X_{t-i} + u_{2t} \quad (6)$$

$u_{1t}$  and  $u_{2t}$  are uncorrelated error terms.

## 4. Analysis, results and discussions

**4.1. Descriptive analysis.** We can observe from Table 2 that the highest value for Islamic banks' investments in 2014 reached (399,451.0) from (50,701.00) in 1990 with standard deviation of (121.0863). This informs us an impression of huge progress in Islamic banking industry recently. The findings depict that the median for GDP, GF, FDI, and Islamic banks' investments is lower than the mean which indicates that the values are skewed to the left.

$H_0: \beta = 0$  (no co-integration is found)

$H_1: \beta \neq 0$  (co-integration is found)

If we reject the null hypothesis, it means we accept  $H_1$  which means there is a long-term co-integration between variables. To test it, maximum *Eigen* and *Trace* statistics are used. If there is association between variables, then we can proceed to error correction model (ECM) as stated in the below equations. The number of lags in the model is chosen by the lowest Akaike information criterion (AIC) before the selected model is implemented by (OLS). Following the research works done by Odhiambo (2011) and Narayan (2008), we get the short-run parameters by estimating ECM associated with the long-run estimates. Short-run relationship can be derived by construction an ECM of the following forms.

Table 2. Summary statistics

Statistics	GDP (US \$ millions)	GF (US \$ millions)	FDI (US \$ millions)	Islamic investments (US \$ millions)
Mean	170,545.6	78,247.57	3,954.100	20,699.84
Median	109,816.0	68,124.50	401.8000	7,469.000
Maximum	399,451.0	97,192.00	14,187.0	72,123.00
Minimum	50,701.00	22,433.00	-985.3400	787.000
Std. deviation	121,086.3	27,403.27	5,269.40	23,786.49
Observations	25	14	25	25

**4.2. Stationary test.** It is clear from Table 3 the variables are stationary at first difference. We can notice that the P value is (0.0 < 0.05) level of significance for GDP in the PP test. It means that the series is stationary.

Table 3. Stationary test

Study variables	ADF		PP	
	I(0)	I(1)	I(0)	I(1)
(GDP)	-2.129650 0.0548	-3.371806** 0.0063	-3.912820*** 0.0016	-6.843615** 0.0000
(Invest)	-2.230133 0.0454	-3.491446** 0.0048	-3.528268*** 0.0036	-7.164665** 0.0000
(GF)	-1.771436 0.5985	-2.141708 0.4471	-2.141708 0.4471	-11.68149** 0.0010
(FDI)	-1.284754 0.6157	-3.382949** 0.0251	-1.399840 0.5616	-3.387763** 0.0250
Sig. at: * 10, ** 5 and ***1 percent level.				

The same picture can be seen for (Invest), the p value is (0.0048 < 0.05) level of significance in ADF test. Further, for (Gf), the p value is (0.001 < 0.05) in PP test. It means that the GF series is stationary. Finally, the P value for FDI is

(0.0251<0.05) in ADF test which means the series is stationary. These results recommend us to go further to cointegration test.

**4.3. Johansen co-integration test and error correction model (ECM).** It is clear from Table 4 that the findings of Johansson test for the long-term relation between variables. For GDP, the trace statistics (16.52450) is more than (15.41) critical bound value. Similarly, the result is found for GF in which the trace statistics (25.63250) is more than (15.41) critical bound value. Furthermore, the trace statistics (18.46340) is greater than (5.41) critical bound value for FDI. The findings affirm the existence of a long-term association between the study variables.

Table 4. Trace test

Variables		Trace values	Bound critical values*	
			5%	1%
(GDP)	# of cointegration vector = 0	16.52450**	15.41	20.04
	# of cointegration vector $\geq 1$	0.589390	3.76	6.65
(GF)	# of cointegration vector = 0	25.63250**	15.41	20.04
	# of cointegration vector $\geq 1$	6.931015**	3.76	6.65
(FDI)	# of cointegration vector = 0	18.46340**	5.41	20.04
	# of cointegration vector $\geq 1$	3.264970	3.76	6.65

\*Based on Johansen and Juselius (1990)  
\*\* Significant at 5 % level

The results for Max-Eigenvalue test are shown in Table 5. The same picture is found for co-integration between variables, for GDP, the eigenvalue test statistics (15.93515) is higher than (14.07) bound critical value. The test value for GF is (18.70135) and it is higher (14.07) bound critical value.

Table 5. Max-Eigenvalue test

		Max-Eigenvalue	Bound critical values*	
			5%	1%
(GDP)	# of cointegration vector = 0	15.93515**	14.07	18.63
	# of cointegration vector=1	0.589393	3.76	6.65
(GF)	# of cointegration vector = 0	18.70135**	14.07	18.63
	# of cointegration vector= 1	6.931010**	3.76	6.65
(FDI)	# of cointegration vector = 0	15.19850**	14.07	18.63
	# of cointegration vector= 1	3.264960	3.76	6.65

\*Based on Johansen and Juselius (1990)  
\*\* Significant at 5 % level

The test value for FDI is (15.19850) and it is greater than (14.07) bound critical value. It is clear from the results of Table 4 and Table 5 that there is a long-term association between variables. And in order to find more insights into the casual relationship between Islamic financial investments and economic growth, ECM test is done. Error correction model results are reported in Table 6. It is clear from Table 6 that the

error correction parameters for the (1-4) equations are negatively correlated which assures the existence of causality in one direction between variables.

Table 6. Error correction model

Coefficient	$\Delta \ln GDP$	$\Delta \ln dGF$	$\Delta \ln Invest$	$\Delta \ln FDI$
$ECT_{t-1}$	-0.228710 (0.0150)**	-0.070565 (0.0368)**	-0.173265 (0.0232)**	-0.121845 (0.0414)**
$\Delta \ln invest$	0.41325 (0.0340)**	0.350317 (0.0974)*	----	0.450217 (0.0865)*
$\Delta \ln gdp$	---	----	0.678990 (0.042147)**	----
$\Delta \ln di$	---	----	0.524589 (0.0314527)**	----

Sig. at: \*10, \*\*5 and \*\*\*1 percent level.

The error correction coefficients show the speed of adjustment to back to equilibrium after shock is low. The positive sign coefficients of Islamic financial parameters in equations (1)-(4) supported the view that Islamic investments could positively affect the economic growth, business formation and FDI. In order to meet the normal estimates of ordinary least square model, diagnostic tests are applied to the ECM. The models passed all the diagnostic tests against serial correlation (Breusch-Godfrey test), heteroscedasticity (white heteroscedasticity test), and normality (Jarque-Bera test) as shown in Table 7.

Table 7. Diagnostics tests results

	P value
Breusch-Godfrey test serial correlation	0.480955
F-Arch test	0.820629
white heteroscedasticity test	0.116424
(Jarque-Bera test), Normal	0.459063

**4.4. Granger causality results.** It is clear from Table (8) that the p value (0.01526<.05) which indicates that the Islamic investments causes the economic sector of UAE to grow and progress. The same picture is drawn for gross formation and Islamic banks' investments since 0.03205 is lower than 0.05, which means that Islamic investments causes many institutions to establish and enter the economy.

Table 8. Granger causality results

The direction of causality			F statistics	P value
Invest	→	GDP	5.41616	0.01562**
GDP	→	Invest	2.02775	0.16844
GF	→	Invest	7.01766	0.07391
Invest	→	GF	13.3611	0.03205**
Invest	→	FDI	12.8782	0.008**
FDI	→	Invest	6.93100	0.028**

\*\* Significant at 5 % level

Furthermore, the causality relationship between FDI and Islamic banks' investments is bi-directional since (0.008<0.05), (0.028<.05). It means that UAE have an efficient banking system



and a dynamic economy, which creates a good atmosphere for foreign direct investment and through foreign direct investment come in home economy.

## Conclusion

The results affirm that the Islamic financial sector leads the growth of the economy in the UAE in terms of GDP, GF, and FDI. This means that Islamic financial system is an efficient financial system that improves the flow of money for the

growth of the economy. In this regard, government of UAE should develop and maintain sound policies to enhance Islamic banking sector to promote economic growth of the country. In contrast, the results do not show the same relation for FDI, where the relationship is bi-directional. It means that UAE have an efficient banking system and a dynamic economy, which creates a good atmosphere for foreign direct investment and through foreign direct investment come in home economy.

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