

# Islamic Financial Development and Economic Growth-- Empirical Evidence from United Arab Emirates

*Mosab I. Tabash<sup>\*a</sup>, Raj S. Dhankar<sup>b</sup>*

<sup>a</sup>*Faculty of Management Studies (FMS)*

*University of Delhi, Delhi-110007, India*

<sup>b</sup>*Dean and Professor of Finance, Faculty of Management Studies (FMS)*

*University of Delhi, Delhi-110007, India*

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## Abstract

This paper analyzes empirically the relationship between the development of Islamic finance system and growth of the economy in the United Arab Emirates (UAE). To document the relationship between development of Islamic finance and economic growth, time series data from 1990 to 2010 were used. We use Islamic banks' financing credited to private sector through modes of financing as a proxy for the development of Islamic finance system and Gross Domestic Product (GDP), Gross Fixed Capital Formation (GFCF), as proxies for real economic growth. For the analysis, the unit root test, cointegration test and Granger Causality tests were done. Our empirical results show that there is a strong positive association between Islamic banks' financing and economic growth in the UAE, which reinforces the idea that a well-functioning banking system promotes economic growth. However, our results indicate that a causal relationship happens only in one direction, i.e., from Islamic banks' financing to economic growth, which supports Schumpeter's supply-leading theory. In this case, the development in the Islamic financial sector acts as supply, leading to transfer of resources from the traditional, low-growth sectors to the modern high-growth sectors, and to promote and stimulate an entrepreneurial response in these modern sectors. Furthermore, the results show that Islamic Banks' financing has contributed to the increase of investment in UAE in the long term and in a positive way.

*Key words:* Islamic finance, Economic growth, Causality, UAE

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\* Coresponding Author. Tel:+91-9675720601  
Email address: [mossubtab@gmail.com](mailto:mossubtab@gmail.com)

## 1. Introduction

Islamic finance is growing as a source of finance for Islamic and other investors around the world. During the past years, one of the rising stars in the world of finance, has been Islamic finance. From the skyscrapers of Dubai and Kuala Lumpur, to the 19<sup>th</sup> century palaces of Paris, there has been a growing interest in this business. Islamic finance involves structuring financial instruments and financial transactions to satisfy traditional Muslim strictures against the payment of interest and engaging in gambling. It is a field of growing importance for conservative Muslims, especially in the Middle East and large Muslim population in South-Eastern Asia countries, who are uncomfortable with Western-style of financial system and banking, which involve explicit payments of interest. Lately, the Osservatore Vatican (2009) noted that banks should look at the rules of Islamic finance to restore confidence amongst their clients at a time of global economic crisis. According to Financial Insights, Islamic finance has been growing at 20-30% per year over the past decade, while Ernst & Young (2011a) is even more optimistic in its forecast suggesting that Islamic financial assets will hit USD 2 trillion by end of 2014. This rapid growth has been fuelled by surging demand for Shariah<sup>†</sup>-compliant products not only from financiers in the Middle East and other Muslim countries, but also by investors globally, thus making it a global phenomenon. Global Shariah-compliant financial assets have increased significantly over the past three decades, reaching about US\$1 trillion in 2011 (Figure 1), up from about US\$5 billion in the late 1980s.

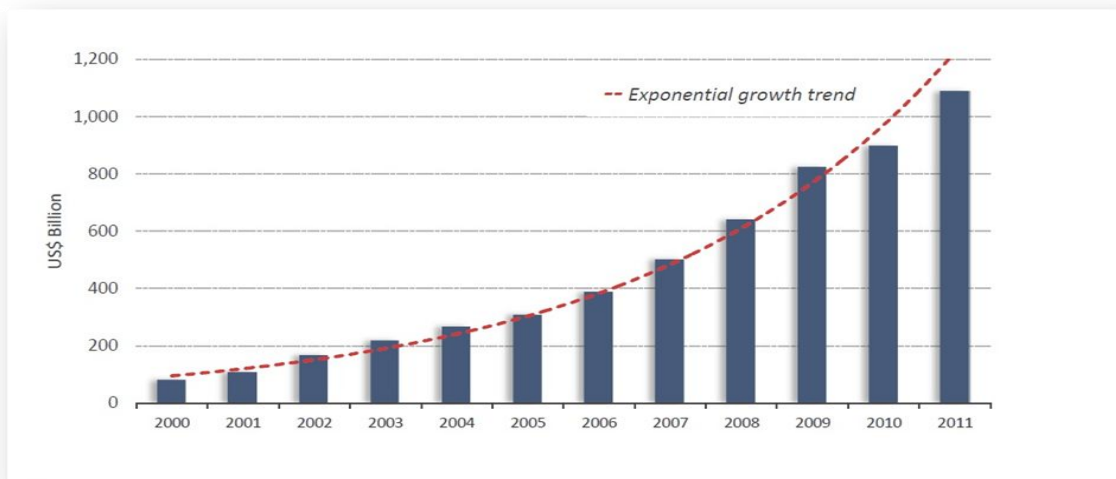


Fig.1: Global Shariah-Compliant Financial Assets (2000-2011)

Islamic banking assets have been growing rapidly for several decades. They rose from about U.S \$ 386 billion in 2006 to U.S \$1.1 trillion in 2011 (Deutsche Bank, 2011). In recent years, growth in Islamic

<sup>†</sup> “The Path”, term of Islamic law consists of Islamic instructions based on the Holy Quran and Sunnah).

financial assets has generally outperformed conventional financial instruments, particularly following the onset of the financial crisis that has been gripping the world since 2008. The performance and relative stability of Islamic financial institutions during the financial crisis that hit the world in 2008 stems from the distinctive features of the instruments they offer. Islamic finance emphasizes asset backing and the principle of risk sharing, ensuring a direct link between financial transactions and real sector activities.

The return on savings and investment is closely linked (determined by the real sector, not the financial sector); giving Islamic finance modes a flexible adjustment mechanism in the case of unanticipated shocks. The adjustment mechanism ensures that the real values of assets and liabilities will be equal at all points in time, and prohibits excessive risk taking, thereby avoiding several forms of complicated securitization (Chapra, 2008).

The growth of Islamic banks has been significant during the past five years. For example in the United Arab Emirates (UAE), the assets of Islamic banks expanded by 27 percent during 2006–2010, much faster than the growth in assets of conventional banks (Figure 2). Many economists have highlighted the importance of Islamic financial system in the process of economic development but this relationship has never been empirically tested, because aggregate data on Islamic sectors are not yet available.

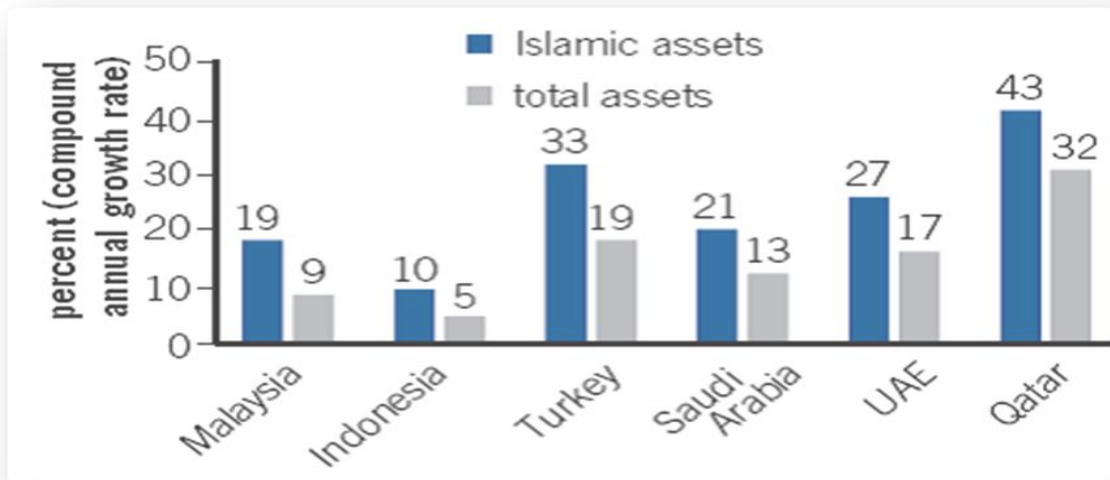


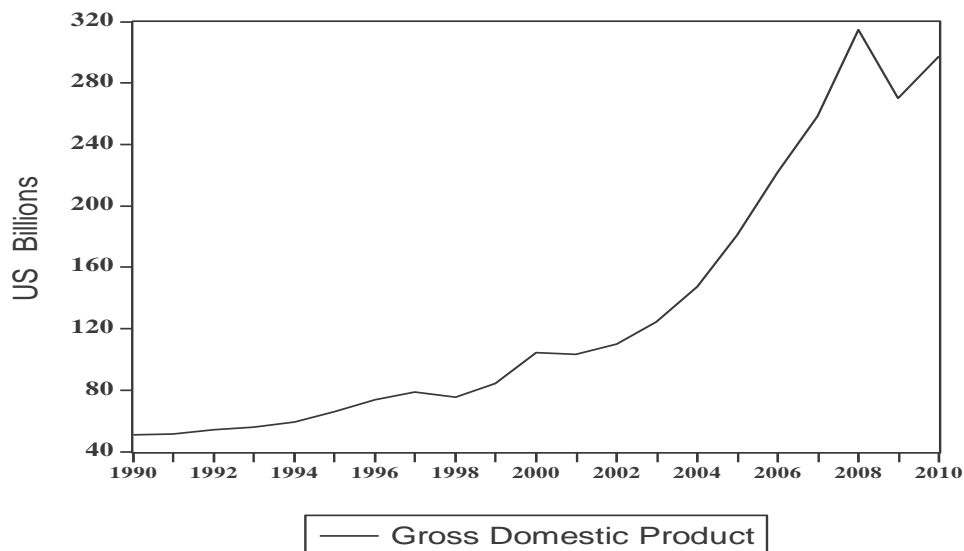
Fig.2: Growth of Islamic Banking and Conventional Banking Assets in Selected Countries (2006-2010)

Source: Deutsche Bank, (2011).

The present study tries to assess empirically the relationship between the development of Islamic finance system and economic growth in United Arab Emirates (UAE).

## 2. Islamic Finance and UAE Economic Growth

The United Arab Emirates (UAE) enjoys the highest economic growth rates in the Arab world. The UAE has an open economy with a high per capita income and a sizable annual trade surplus. Successful efforts at economic diversification have reduced the portion of GDP based on oil and gas output to 25%. Since the discovery of oil in the UAE more than 30 years ago, the country has undergone a profound transformation from an impoverished region of small desert principalities to a modern state with a high standard of living<sup>‡</sup>. The financial sector plays a growth promoting role, if it is able to direct financial resources towards the sectors that demand those the most. When the financial sector is more developed, more financial resources can be allocated into productive use, and more physical capital gets formed, which will lead to economic growth. The UAE is a dynamic and growing market for business, particularly in financial services. Global as well as local banks have flourished in recent years in this relatively progressive and vibrant economy. Figure 3 shows the growth of the UAE economy from 1990-2010.



<sup>‡</sup> <https://www.cia.gov/library/publications/the-world-factbook/geos/ae.html>

Fig.3: GDP Growth of the United Arab Emirates (1990-2010)

A well developed Islamic financial system and a high economic growth at the same time draw our attention, to examine whether or not the Islamic banking system that currently applied in the UAE, has really contributed in the long-term to economic growth of the UAE. To know this, we looked at the dynamic interactions between finance and growth by applying models where the financial system influences economic growth, and economic growth transforms the operation of the financial system.

### ***2.1 Islamic banking in the United Arab Emirates***

The UAE Islamic banking sector's performance continues to benefit from the buoyant economic environment. Combined assets of Islamic banks in UAE have grown with a CAGR of 98.12 % for the period 1990 to 2010 (Authors calculations). Islamic banks assets' share in total bank assets increased to 17% during 2010 only. Total assets of Islamic banks in the UAE have increased by 30.5% to U.S \$ 73.1 billion from U.S \$ 50.8 billion during 2010. Presently, there are 23 national banks and 22 foreign banks operating in the UAE. Out of the 23 national banks, 8 are fully operating under Shariah principles (5 of which are public companies) and the remaining banks have both conventional and Islamic banking operations (Deutsche Bank, 2011). Further analysis of the financing component of assets shows that while a variety of Islamic financing modes are used by the banks and the composition of their use vary across countries, Murabahah financing is the dominant mode used by Islamic banks in all countries of Middle East and North Africa region (Ali, 2011). Figure (4) shows the incremental increase of Islamic banks' financing in the UAE, while figure( 5) shows the increase of fixed investments in the period 2001 to 2010 in the UAE.

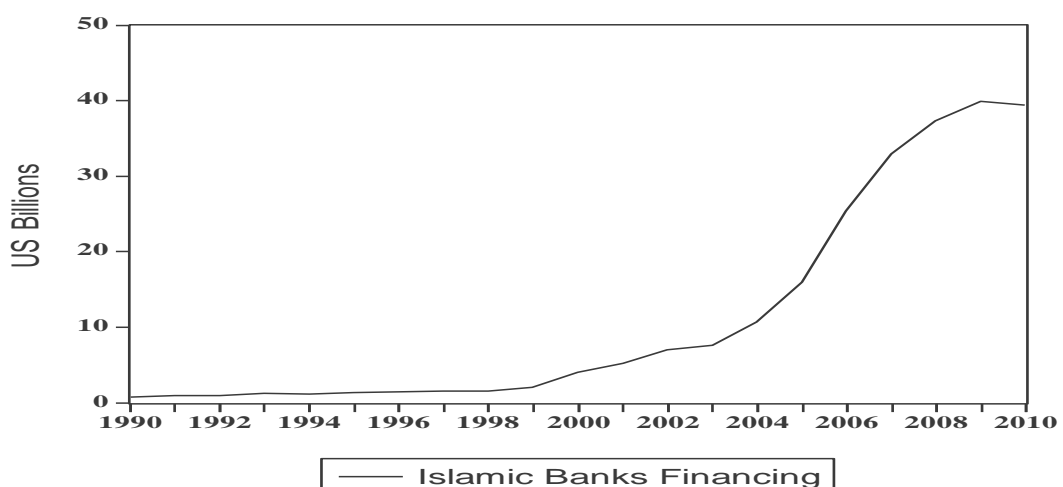


Fig. 4: Islamic Banks' Financing (1990-2010)

Islamic banking is continuously gaining popularity in the UAE. The two largest UAE Islamic banks are Dubai Islamic Bank (DIB) and Abu Dhabi Islamic Bank (ADIB). Conventional banks also have Shariah compliant subsidiaries and Islamic windows to facilitate Islamic transactions. There is no doubt that Islamic financial sector development plays an important role in the overall development of an economy. Although, there are many empirical studies that examined the relationship between finance and economic growth, but specific empirical studies on the relationship between Islamic finance and economic growth, are not too many. So, this study tries to examine empirically the relationship between Islamic finance and economic growth, and its direction in the UAE.

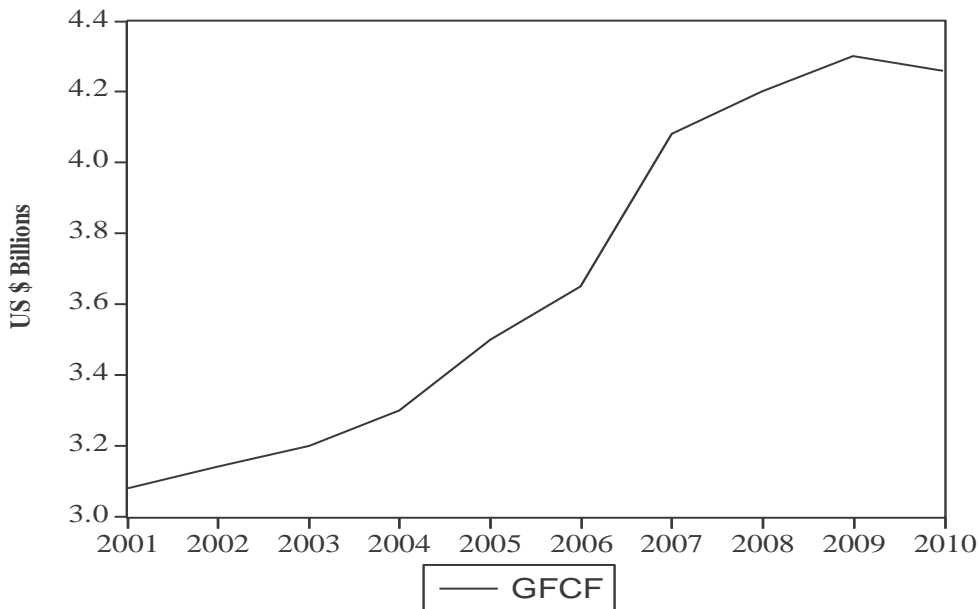


Fig. 5: Gross Fixed Capital Formation (2001-2010)

### 3. Literature Review

The relationship between financial development and economic growth has been extensively analysed in the literature. The relationship between financial development and economic growth is a controversial issue. Some authors consider finance an important element of growth (Schumpeter, 1934; Goldsmith, 1969; McKinnon, 1973, Shaw, 1973; King and Levine (1993), whilst for others it is only a minor growth factor (Robinson, 1952; Lucas, 1988). Schumpeter (1934) sees the banking sector as an engine of economic

growth through its funding of productive investment. On the contrary, Lucas (1988) argues that the role of finance has been overstressed.

According to the theory, the development of the banking industry is favourable to the economic growth because the activity of the banks increases the mobilization of the saving, improves the efficiency of the resources allowance, and stimulates the technological innovation. Most studies (including recent ones) argue, in accordance with the theoretical predictions that, there is a positive relationship between the financial development and the economic growth. Beck et al (2000), Bekaert et al (2001) and Levine (2005) strongly supported the idea that there is a positive relationship between financial development and economic growth.

Explicitly or implicitly, in all studies, we note that an efficient financial system accelerates the economic development. The main contribution of financial system to materialize growth as it assures the functioning of an efficient and evolutionary payment system, and mobilizes the saving and improves its affectation to the investment. So the existence of a reliable and sound financial exchange system is a necessary for growth.

Recently, several studies have attempted to deepen this analysis empirically by exploring specific indicators to explain the causal relationship between finance and growth. Three possibilities come to fore, (1) financial development is a determinant of economic growth, supply-leading; (2) financial development follows economic growth, demand-following; and (3) bidirectional causality between finance and growth.

Odedokun (1992) favoured bidirectional causality between finance and growth. Both financial and economic developments are causally related where financial development causes economy to grow, and economic growth triggers financial sector to develop further. Masih (1996) supported demand following hypothesis where economic growth causes financial sectors to develop. As per this view, the more rapid the growth of real national income, the greater will be the demand by enterprises for external funds (the saving of others), and therefore, financial intermediation, as in most situations firms will be less able to finance expansion from internally generated depreciation allowance and retained profits. The financial system can thus support and sustain the leading sectors in the process of growth. In this case an expansion of the financial system is induced as a consequence of real economic growth or demand following. Levine and Zervos (1998) studied the empirical relationship between stock market development, banking development, and long-run economic growth. Their research showed that stock market liquidity and banking development are both positively and robustly correlated with contemporaneous and future rates of economic growth, capital accumulation and productivity growth.

Arestis et al. (2001) focused their study on only five developed countries with quarterly data. They confirmed a robust effect of banking sector development and stock markets development on growth in these countries. Fase and Abma (2003) argued that expansion of the financial system could have a positive repercussion on economic growth. The financial sectors in this case act as supply leading to transfer resources from the traditional, low-growth sectors to the modern high-growth sectors and to promote and stimulate an entrepreneurial response in these modern sectors. Abu-Bader and Abu-Qarn (2005) examined the causal relationship between financial development and economic growth in Egypt for 1960-2001. They used Granger causality tests. They concluded that financial development promotes economic growth either through increasing investment efficiency or capital accumulation.

Tang (2006) used a modified growth model investigated whether financial development would have facilitated economic growth among the APEC countries from 1981 to 2000. Tang did this by specifically focusing on the effects of three aspects of financial development on economic growth: stock market, banking sector, and capital flow. Tang found that the level of stock market development would have no impact on the growth effect of capital flow increase among the APEC countries. In the banking sector his study shows that a well-functioning banking sector would only boost the growth effect of capital flow on the APEC developing countries. Hondroyannis et al. (2005) and Van Nieuwerburgh et al. (2006) used VAR models to assess long term relationship between financial development and growth. Hondroyannis et al. (2005) studied the case of Greece for the period 1986-1999. They found a strong link between financial development and economic growth in the long-run. Van Nieuwerburgh et al. (2006) confirmed the same results in the case of Belgium where both banks and stock markets financing affect economic growth in the long run.

Romeo-Avila (2007) also confirmed the positive impact of finance on growth. He investigated the relationship between finance and growth, with emphasis on the effect of financial deregulation and banking law harmonisation on economic growth in the European Union. The study establishes that financial intermediation impacts positively the economic growth through three channels. Kenourgios and Samitas (2007) examined the long-run relationship between finance and economic growth for Poland, and concluded that credit to the private sector has been one of the main driving forces of long-run growth.

Huang et Lin (2009) re-examined the dynamic relationship between financial development and economic growth on the dataset used in Levine et al. (2000). Using a novel threshold regression with the instrumental variables approach, they support a positive linkage between financial development and economic growth, and found that financial development has an important effect on growth in low-income countries.

Hence, there are not too many studies available on the relationship between Islamic finance and economic growth. We find that the empirical studies that have been conducted so far have mainly examined the efficiency, superiority and stability of Islamic banks compared to conventional banks. The aim of that studies to achieve some monetary target which is concentrated towards the achievement of sustaining real economic growth, reducing inflation and lowering unemployment. For example, Darrat (1988) who found that interest-free banking system is more superior to achieve the monetary target.

#### **4. Research Methodology**

The qualitative and quantitative methods have been used. The qualitative approach is used to review the existing literature from all resources such as academic, documents, workshops, and other related literature of Islamic finance industry. The quantitative approach is used to test the long term relationship between Islamic finance and growth of economy.

The data set is extracted from World Trade organization, Global Development Finance and Islamic Banks and Financial Institutions Information (IBIS), database for all Islamic banks' financing in the



UAE<sup>§</sup>. To serve our purpose, appropriate variables were established and the long-term relationships between those variables are determined by using econometric estimation methods. We use annually time series data for the variables- Islamic banks' financing through modes of financing as a proxy for financial sector and two variables representing real economic sectors namely Real Gross Domestic Product (GDP) and Gross Fixed Capital formation (GFCF) as proxies for economic growth.

Based on the availability of data, two time periods are used. From 1990 to 2010 time series to examine the relationship between Islamic banks' financing and GDP, and from 2001 to 2010 time series to examine the relationship between Islamic banks' financing and GFCF.

GDP is a common statistic to represent the income level of a particular country within a certain time range. Study about finance-growth nexus always use GDP as the principal variable reflecting economic growth.

We use Gross Fixed Capital Formation (GFCF) as a representation of investment, as it is economic indicators of the level of business activity that measure net new investment by enterprise in the domestic economy in fixed capital assets during an accounting period. The first step of the study is to determine the relationship between financial deepening and economic growth, and whether the series are stationary or not. In a model, for a correct evaluation, time series should be separated from all effects, and the series should be stationary. Thus, logarithms of time series were taken. Augmented Dickey Fuller (1981) and Phillips Perron (1988) tests are used. After that, Johansen co-integration test was used to examine the long-term relationship between financial deepening and economic growth. And then, the Granger causality test is used to test the causality between Islamic banks' financing and economic growth. We use Eviews\*\*software to test and analyse the results.

## 5. Analysis and Results

### 5.1 Descriptive Statistics

Table (1) presents summary statistics about the variables used in the econometric analysis for the UAE. Figure 6 and figure 7 show the relationship between Gross Domestic Product (GDP), Gross Fixed Capital Formation (GFCF), and Islamic banks' financing in the UAE graphically.

Table 1: Summary Statistics

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<sup>§</sup> The Islamic Banks and Financial Institutions Information (IBIS) database is built to help researchers and finance professionals working in the area of Islamic economics and finance. It seeks to provide comprehensive data and information on the activities of Islamic finance institutions, up-to-date research and literature. It can be reached through the website <http://www.ibisonline.net/IBISHomepage.aspx>

\*\*Eviews is a statistical and econometric software package, which provides data analysis, regression, and forecasting tools. It is produced by Quantitative Micro Software (QMS) in Irvine, California, USA.

Statistics	GDP	GFCF	IBF
Mean	132,502.4	3,671	11,355.69
Median	103,312.0	3,575	4,025.970
Maximum	314,845.0	4,300	39,918.08
Minimum	50,701.00	3,080	0,739.970
Std. Dev.	88057.93	0,495	14,309.46
Observations	21	10	21

Fig.6 GDP and IBF Growth (1990-2010)

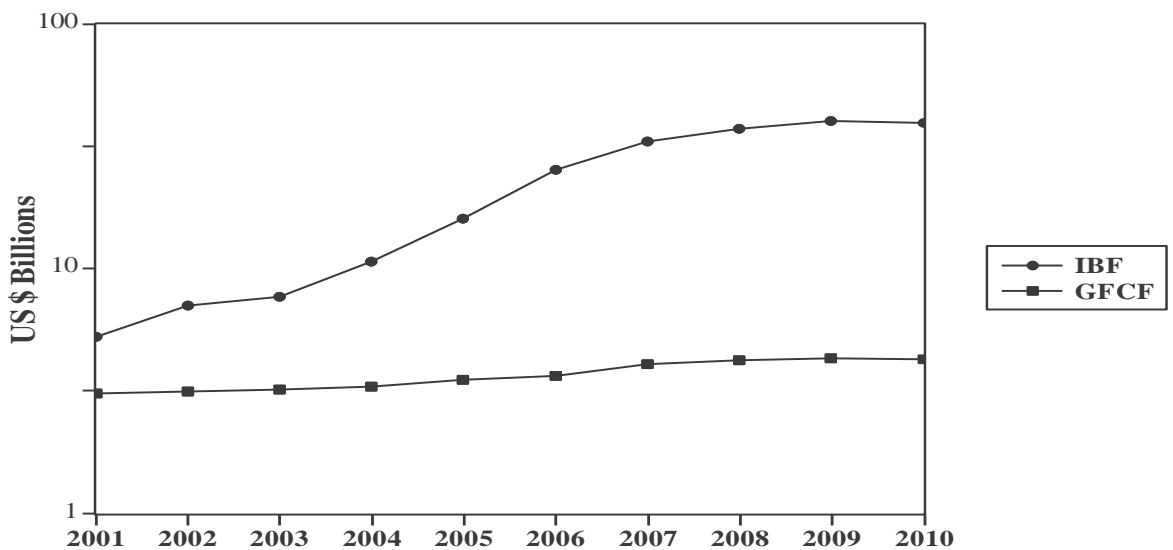
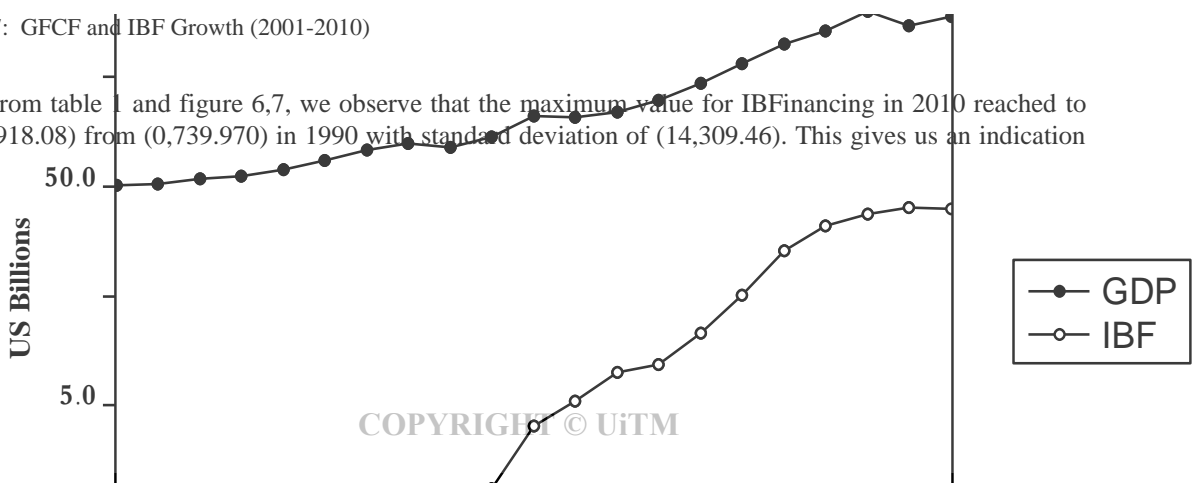


Fig.7: GFCF and IBF Growth (2001-2010)

From table 1 and figure 6,7, we observe that the maximum value for IBFinancing in 2010 reached to (39,918.08) from (0,739.970) in 1990 with standard deviation of (14,309.46). This gives us an indication



of high growth of the Islamic finance industry in the recent years. The statistics show that the median for GDP, GFCF and IBFinancing is less than the mean, which indicates that the values are positively skewed.

## 5.2 Unit Root Test

Results of ADF and PP tests applied to time series show that all series belong to economic growth and financial deepening indicators are not stationary at level. To make that series stationary, first differences of series have been taken. Failure to reject the null hypothesis of unit roots implies that the linear combination of the variables is non-stationary; hence we cannot pursue for the cointegration tests.

Table 2: Unit Root Test

		ADF Test		Phillip-Person Test	
		Level 1	First difference	Level 1	First difference
Country	Variable	t- statistic P value	t- statistic P value	t- statistic P value	t- statistic P value
UAE	GDP	-2.129647 0.0546	-3.371805** 0.0062	-3.912819*** 0.0015	-6.843614** 0.0000
	GFCF	-1.771436 0.5985	- 2.141708 0.4471	-2.141708 0.4471	-11.68149** 0.0010
	IBFinancing	-2.230132 0.0456	-3.491436** 0.0050	-3.528265*** 0.0034	-7.164660** 0.0000
*, **, *** significant at 1%, 5%, 10% level respectively					

The results of the table 2 indicate that the data at the first difference is stationary at  $\alpha$  1%, 5%, and 10% level of significance respectively. For GDP variable, if p value is less than  $\alpha$ , then  $H_0$  is rejected, and the series is stationary. The first row in table 2 shows that the p value (0.0062) is less than  $\alpha$  (0.05) in ADF test. Similarly, for IBFinancing, the result from the third row shows that the p value (0.005) is less than  $\alpha$  (0.05) and for GFCF, the p value (0.001) is less than  $\alpha$  (0.05) in PP test. This suggests that the null hypothesis is rejected for all variables. Hence, it indicates that the series are stationary.

## 5.3 Johansen Co-integration Test

Table 3 shows the results of Johansson test for the long-term relationship between Islamic bank financing and economic growth.

The trace test rejects the null hypothesis if the trace statistics exceeds the critical value. The first row of table 3 shows that the trace statistics (16.52449) exceeds the critical value of (15.41) at 95 percent

confidence level for GDP and the trace statistics (25.63235) exceeds the critical value of (15.41 ) at 95 percent confidence level for GFCE . It suggests that the null hypothesis of no cointegrating relationships is rejected. The results confirm that there is a cointegrating relationship among the variables.

Table 3: Johansen's test (trace statistic)

		Trace statistics	Critical values	
			5%	1%
Gross Domestic Product(GDP)				
Null hypothesis	Ho: r = 0	16.52449**	15.41	20.04
Alternative hypothesis	H1:r ≥ 1	0.589393	3.76	6.65
Gross Fixed Capital Formation (GFCE)				
Null hypothesis	Ho: r = 0	25.63235**	15.41	20.04
Alternative hypothesis	H1:r ≥ 1	6.931010**	3.76	6.65
** significant at 5 % level				

Table 4: Johansen's test (Max-Eigenvalue statistic)

		Max-Eigenvalue	Critical values	
			5%	1%

Gross Domestic Product(GDP)				
Null hypothesis	Ho: r = 0	15.93510**	14.07	18.63
Alternative hypothesis	H1:r = 1	0.589393	3.76	6.65
Gross Fixed Capital Formation (GFCF)				
Null hypothesis	Ho: r = 0	18.70134**	14.07	18.63
Alternative hypothesis	H1:r ≥ 1	6.931010**	3.76	6.65
** significant at 5 % level				

The eigenvalue test tests the null hypothesis of  $r$  versus  $r+1$  cointegrating relationships. This test rejects the null hypothesis if the eigenvalue test statistics exceeds the respective critical value. Table 4 presents the results from this test. Similarly, the result from the first row of table 4 shows that the eigenvalue test statistics (15.93510) exceeds the critical value (14.07) at 95 percent confidence level for GDP and the eigenvalue test statistics (18.70134) exceeds the critical value of (14.07) at 95 percent confidence level for GFCF. This suggests that the null hypothesis is rejected. Hence, it indicates that there is one cointegrating relationship among the variables.

The results from table 3 and 4, if read together, show that the null hypotheses of non-cointegration are rejected at 5 percent level of significance. This suggests that in the long run Islamic banks' financing contributes in the growth of GDP and investment of United Arab Emirates (UAE).

#### 5.4 Granger Causality Test

Statistics and probability values constructed under the null hypothesis of noncausality are reported in table 5. It can be observed that there is a causal relationship between Islamic banks' financing and GDP. However, our results show that one-way causality exists only from Islamic banks financing to GDP, since the probability value (0.01559) less than (0.05). So, the null hypothesis is rejected, and it can be concluded that the higher flow of Islamic finance has led to the growth of the economy. Furthermore, the results show there is a unidirectional causality between Islamic banks' financing and investment since it is significant at 5 percent level, as (0.03207) less than (0.05). Thus, Islamic banks' financing granger causes the development of real economic growth in UAE.

Table 5: Pair wise Granger Causality Tests

Null Hypothesis	F statistics	Probability

IBF does not Granger Cause GDP	5.41605	0.01559**
GDP does not Granger Cause IBF	2.02784	0.16842
GFCF does not Granger Cause IBF	7.01785	0.07390
IBF does not Granger Cause GFCF	13.3600	0.03207**
** significant at 5 % level		

## 6. Conclusion

Islamic finance theory promotes economic development through its direct link to the real economy and physical transactions, its prohibitions against harmful products and activities, and its promotion of economic growth and social justice.

The cointegration results provide evidence of a unique cointegrating vector. In other words, there is a long-term stable relationship between Islamic banks' financing and economic growth in the United Arab Emirates (UAE). That means Islamic banks' financing and economic growth move together in the long-run. It is proved that the UAE has benefited from strong banking system.

We also find that the causality relation exist in the Islamic banks' financing to economic growth in a unique direction from the development of Islamic financial system to economic growth, but not in the opposite direction. Our results also indicate that improvement of the Islamic financial institutions in the UAE will benefit economic development, and it is critical in the long-run for the economic welfare, and also for poverty reduction. The results of study are quite significant as it is one of the pioneering studies of Islamic finance.

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