

Islamic Banking and Economic Growth: Empirical Evidence from Saudi Arabia

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Abstract— Islamic banking started four decades ago in Saudi Arabia and was expected to have a significant relationship and contribution towards the economic growth of the country. This study aims to investigate the long run and dynamic relationship between Islamic banking and economic growth in the case of Saudi. The annually time-series data of total Islamic Bank financing (IBF), real Gross Domestic Product per capita (GDP), gross fixed capital formation (GFCF) and Trade activities (TRADE) from 2000 to 2012 are used in this study. Using cointegration and Granger's causality method, we found that there is evidence of a unidirectional relationship between Islamic bank Financing and GFCF that supports «Supply Leading» hypothesis. Thus Islamic Banking influences the economic growth of Saudi by increasing its Investment. It implies that the development of Islamic banking is one of the policies, which should be considered by the government to achieve high rates of economic growth.

Index Terms— Islamic banking, economic growth, cointegration, Granger causality, Saudi

I. INTRODUCTION

With the rapid development of financial intermediaries and the means of payment that represents a major role in economic activity, the relationship between the development of finance and economic growth has become the center of many economic studies in two decades, either in the theoretical or practical side. The research has focused recently on the direction of causality between financial development and economic growth. Some studies suggest that the development of financial intermediaries can accelerate the rate of capital accumulation and thus improves the imposition of economic growth, that is what (Bagehot, 1873), (Schumpeter, 1912), (Mc Kinnon, 1973), (Shaw, 1973) and (Spellman, 1982) see .On the other hand, some economists believe that economic growth leads to financial development, which is seen it as a positive function of real wealth, during the development process the average per capita income leads to a more rapid growth financial assets, this means that the direction of causality is from economic growth to financial development, that is what (Robinson, 1952) and (Gurley and

Shaw, 1955, 1956, 1960, 1967) see. Moreover, (Patrick, 1966) believes that there is a bi-directional causal relationship moving from the financial sector to economic growth during the early stages of development, while moving from economic growth to the financial sector during the late stages of economic development. The debate of the causal relationship between the development of the means of financing and economic growth is the subject of many empirical studies that have produced mixed results.

The Islamic banking sector and despite the period of time which is not considered a relatively long in its launch, was able to achieve great leaps to impose itself in the global financial trading. The existence of more than 500 Islamic bank in 60 countries with funding estimated by trillion and 200 billion dollars, according to statistics in 2013, as well as more than 330 Classic bank offers Islamic products with more than 300 billion\$. This indicate the high rank and relevance of Islamic banking, which is growing steadily and at rates exceeding doubly of traditional banks growth rate. And thus Proceeding from rooting theoretical, and in recent years appeared the attention of researchers on the role of this sector in the economic growth through experimental studies that examined The relationship between the development of the Islamic banking sector and economic growth, showed mixed results about the direction of the causal relationship between them.

Given the importance of the Saudi Islamic banking sector and the role that is expected of him in the future to stimulate economic growth. This study will test the existence of a long-term relationship between the position of the study variables through co-integration test, and determine the direction of the causal relationship between economic growth and banking development of Islamic through causality test of Granger. The study will be divided into three parts, the first part will be devoted to rooting theory of the relationship between financial development and economic growth, and the second part deals with some previous applied studies and the latter part is for expose model of study and it most important results. It is expected that the results of this study are compatible with the hypothesis of the following assumptions:

- **The first hypothesis:** that the development of Islamic banking finances system leads to economic growth that supports the hypothesis *display commander*.
- **The second hypothesis:** that economic growth leads to the development of Islamic banking sector in favor of the *Dependent Demand hypothesis*.
- **The third hypothesis:** that there is a two-way causal relationship, moving from economic growth to the development of Islamic banking and from evolution Islamic banking to the economic growth.

Manuscript received May 23, 2015

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- **Fourth hypothesis:** that there is no causal relationship between the development of Islamic banking and economic growth.

II. LITERARY REVIEW: FINANCE - ECONOMIC GROWTH

The macroeconomics and development economics are interested by the determinants of economic growth, economists and since ancient times has focused their attention on the relationship between financial development and economic growth. As well many of the studies in the last two decades, are touched both in the theoretical or practical side to determine the direction of the causal relationship between them. *Some studies believe that the development in the financial media through the mobilization of savings and risk management and facilitate transactions, evaluation of projects and others can accelerate capital accumulation rate.* Thus enhances the opportunities for economic growth; this back to the 18th century AD, when (A. Smith, 1776) studied through his book "*The Wealth of Nations*" the role that banks play in facilitating business processes. He stressed that the banking operations allow for the development of industry in the country. So he select the saying: "*All rise or fall in capital block naturally lead to raise or lower the size of the industry, the number of productive people, the value of the annual output of the elements of earth, and the work of the country in addition to the wealth and real income of the population this country.*" In the 19th century AD (W. Bagehot, 1873) pointed to the role played by the British financial sector in the movement and channeling financial resources to the most productive sectors. While in the 20th century AD (Schumpeter, 1912) has pointed to the importance of banks in the economic performance of the system and its contribution to the achievement of growth through the funding of innovation, and highlighted the capitalist investor who wants to make a profit from the technological changes of the production and distribution.

Banks occupy an important place in the Keynesian analysis, because they are directing necessary resources to finance the investment. Therefore, become necessary in the economy because it is which is providing loans and work on reduction the risks that cannot be predicted in the future, and therefore, the banking sector is working to achieve economic growth and this according to (Keynes, 1930).

The studies all of the (Mc Kinnon, 1973) and (Shaw, 1973) are considered one of the first studies which highlighted the importance of financial developments in economic growth. It has found that quantitative restrictions imposed by governments in developing countries on the banking system restrict the quantity and productivity of investment, and thus restrict economic growth and lead to inflation and price instability.

In spite of the difference in the two models that have used both of them, where (Shaw, 1973) not considered money within the wealth, but considered it as a means of payment and an input productive mediator in all non-monetary sectors. While (McKinnon, 1973) considers money as a component of productive inherent and fully substitute for the head money, the result that they reached is identical.

Liberal policies relating to the financial sector stimulate economic growth by improving the quality and quantity of investment, through policies that will alleviate the restrictions on the roof top of the interest rate, high legal and precautions,

and the bias of some programs of credit - for example - to facilitate the process of economic development. In spite of the impact of those liberal policies to increase interest rates, it will lead to stimulate private savings and encourage financial intermediation and distribution optimization of resources, thus increasing the supply of credit to the private sector, which in turn leads to increased investment and high growth rate.

(Spellman, 1982) believed that the presence of an advanced financial system and the accompanying financial instruments and intermediate advanced, leading to direct effects on the real sectors of the economy is reflected in the movement of production possibilities curve to the right because of the change in the size of the totality or improvement of resources to exploit those resources.

On the other hand, some economists among of them (J. Robinson, 1952) believed that economic growth is leading to financial development through what he concluded from his study "*where firms conduct, finance follows*" which means that economic growth leads to an increase in demand on financial services, which lead to a financial asset growth.

As seen (Gurley and Shaw 1955, 1956, 1960, 1967), the financial development is a positive function in the real wealth. During the development process, the growth in the average per capita income leads to the faster growth in financial assets. This means that the direction of causality is from GDP to financial assets, the study of (Goldsmith, 1969) is one of the most important applied contributions that supported theoretical basis of studies of (Gurley and Shaw). In where he confirmed that in about 35 developing and developed country has been researched, financial indicators going to increase with the growth of income and wealth.

(Patrick, 1966) differentiates between the two types of financial developments: (supply leading) and (demand following). The supply leading refers to the phenomenon where financial institutions and display assets and services affiliate formerly of the demand for these assets. Therefore, the financial evolution leads economic growth, while the demand following refers to the phenomenon in which the existence of financial institutions and display the assets and its services response to the demand for these services by investors and savers in the economy. Therefore, the development is part of the development process, so (Patrick) see that there is a causal relationship a two-way moving from the financial sector to economic growth during the early stages of development, while the causal come from economic growth to the financial sector during the late stages of development. While some economists such as (Lucas, 1988) doubting in the capacity of the impact of the financial sector to economic growth.

Accordingly, the debate about the nature of the relationship between financial development and economic growth and direction, which has not yet been resolved, whichever is why? Which is the impact? Requires practical studies. The study of (Cupta, 1984) the first applied study used the methodology of causality of (Granger) to determine the causal relationship between financial development and economic growth.

III. PREVIOUS EXPERIMENTAL STUDIES

3.1 Some experimental studies that examined the nature of the relationship between financial development and economic growth:

A study of (Gupta, 1984) used methodology causal's (Granger) to determine the causal relationship between financial development and economic growth in fourteen developing country using the money $M1$, $M2$, private credit, total credit to measure financial development and the index of industrial production for measuring economic growth. It has been found evidence that support what (Patrick, 1966) named the findings varied between different countries. It has been found evidence that supports what (Patrick, 1966) named (Supply Leading) that financial development leads economic growth in eight countries, while he did not find anything in favor of what (Patrick, 1966) called (demand-following) that financial development is the result of the development process. But the results indicated that financial development leads to economic growth and that economic growth leads to financial development in the four countries, and for the causal relationship was found that there is a causal with two-way in only two countries, hence the findings of the (Gupta) is unequivocal in support of any of the hypotheses.

In a study (Jung, 1986), which included a fifty six developed and developing nations, where the use of traded currency rate outside the banking system to the $M1$ as well as the ratio of $M2$ to GDP as measures of financial development, and the average real per capita income as a measure of economic growth. The results indicated that the support of the hypothesis that financial development leads is greater than the support of the hypothesis that economic growth and financial development is a result of the economic growth of developing countries, while the results indicated that the direction of causality from economic growth to financial development of developed countries.

The study carried out by the (King and Levine, 1993) on 80 countries during the period (1960-1989) is one of the most important studies that discuss the direction of the causal relationship between financial development and economic growth. In addition, may have used in their study a number of measures of financial development, including Average liquid assets of the financial system to the real GDP . Average rate credit allocated to the private sector to the total domestic credit and average bank credit to the total lending. They used a number of measures of economic growth such as per capita income and average education; indicators reflect the exchange, trade, financial, and monetary policy rate were their findings support the hypothesis that financial development positively affects economic growth.

Addressed the study of (Murinde and Eng, 1994) that the relationship between financial development and economic growth using time series and co-integration analysis in the model of Vector Autocorrelation (VAR) duo. Where was the use of $M1$, $M2$, $M3$ traded currencies and the proportion of outside the banking system to the $M1$, $M2$, $M3$ and other measure of financial development, while the use of real GDP as a measure of economic growth, with the result reached by the pro-causal one-way that financial development leads to economic growth.

Study of (Gregorio and Guidotti, 1995) tested the effect of the current evolution market on growth rate over states that have the high, medium and low income, and they used an average

bank credit for the private sector and to GDP as a measure of financial development. And referred their findings to the evolution of financial markets is not have a positive impact on growth in low- and middle-income countries.

The study of (Demetriades and Hussein, 1996) that has been used ratio of deposits assets and the ratio of $M2$ to GDP as a measure of financial development. Then, the average real per capita income as a measure of economic growth are not a ten developing countries. It has varied results causality tests between financial development and economic growth between countries different, at approximately half of the countries under study there a reference to the existence of a causal bilateral, but in a number of countries the results indicate that the causality is moving from economic growth to financial development.

As explained study (Arestis and Demetriades, 1996) in which the ratio of credit were used and the ratio of $M2$ to GDP as a measure of financial development, and the average real per capita income as a measure of economic growth to the existence of a two-way causal relationship between financial development and economic growth.

The study used (Kul and Khan, 1999) the multiple VAR model. With co-integration test and error correction, model and they reached a bilateral causal between the financial media and the growth rate in the long term for each selected countries in the study.

Study of (Kar and Pentecost, 2000) to test the relationship between financial development and the growth rate in Turkey had given mixed results, when they using the ratio of the money supply to the GNP as a measure of financial development, they find that causality is moving from financial development to economic growth. But when used the proportion of bank deposits of private credit and domestic credit to GDP ratio and found that causation is moving from growth to financial development. They concluded that the overall rate of growth is causing financial development in Turkey.

The researchers (Ang and Mc Kibbin, 2005) tested the relationship between financial development and economic growth, where the study was conducted on the state of Malaysia during the period 1960 to 2001. Using the common integration of different causal tests, and used the per capita GDP as a representative for economic growth, $M2 / GDP$, directed loans to the private sector to GDP and assets of commercial banks to the total assets of commercial banks and the Central Bank. The study found that economic growth have a positive impact on the development of the financial system, researchers have interpreted this finding to that financial liberalization policy did not play any role in raising the rate of economic growth through the development of financial systems channel.

According to a study of (Nicolas Kilimani, 2009) in Uganda, where he used a simple regression testing causal's model (Granger) of the time series (2006-1970). And using the following variables: $M2 / GDP$, gross domestic product GDP , the real interest rate, the total credit, the total exports, exports manufacturer, inflation, population growth, political instability, structural change which concluded that the financial sector has a positive impact on economic growth in Uganda.

Concerning the study of (Mohamed Goaid and SeifallahSassi, 2010) on the 16 countries of the $MENA$ during the period (2006-1962). By using the method of GMM and the

use of the following variables: $M3 / GDP$ which is liquidity in the financial sector, GPS loans directed to the private sector, GDP , trade openness to $Inf(ex + imp / GDP)$ inflation, GC government consumption relative to GDP . That results stated lack of effect of the financial sector to economic growth in the *MENA* countries, and this shows that the *MENA* countries. This shows that the *MENA* countries do not have a strong banking sector and this is due to the lack of financial stability and a high degree of fiscal restraint policy where trade openness policies adopted are classified by their countries of the most closed economies in the world.

We conclude from the above that the results of studies related to the direction of the relationship between financial development and economic growth is not conclusive, the results reached by the studies of (King and Levine, 1993), (Murinde and Eng, 1994) and (Nicolas Kilimani, 2009) to support the hypothesis that financial development positively affects economic growth. While each of the studies of (Kar and Pentecost, 2000) and (Ang and Mc Kibbin, 2005) indicated that the direction of causality is from economic growth to financial development. The study of (Arestis and demetriandes, 1996) and (Kul and Khan, 1999) indicated to the existence of a two-way causal relationship between financial development and economic growth, and in the latter can be referred to a study (Mohamed Goaid and Sassi, 2010), which showed the results the lack of impact of the financial sector to economic growth.

Therefore, we see that the importance of the financial sector in economic growth has occupied economists since ancient times, and that, to the extent of now there is no specific answer to the question about the relationship of the financial sector to economic growth.

3.2. Experimental studies that studied the nature of the relationship between the development of the Islamic banking sector and economic growth:

For the Islamic banking sector, the experimental studies have focused on the study of the efficiency and stability of the sector compared to the conventional banking sector. Especially in light of the recent financial crisis has shown that there is a lack of efficiency of conventional banks, and turned the world's attention to Islamic banking, which come to be regarded an alternative to traditional counterpart. The studies showing the role of Islamic banks in the economic growth and the nature of their relationship are very few of them will mention the following:

According to (Said –Hallaq, 2005), and it study of the direct and indirect effects of Jordan Islamic Bank on real per capita income as an indicator of the rate of economic growth, for the period from 1980 to 2000 using the method of least squares *2SLS*. And using the following variables: real per capita income, the total volume of investment I , net transfers from abroad Re , total credit from traditional banks (TCB), Gross Domestic Product (GDP), the real interest rate, bank financing and investment bank Jordan Islamic (*JIB* financing). Found that increasing the proportion of total investment by 1% led to an increase in real per capita income by 22%, while the increase in net transfers to 1% led to an increase in real per capita income by 24%. Also, although the impact of the total credit from traditional banks showed a positive factor, but that without significant (indication). The effect of credit financing and the investment of the Jordan Islamic Bank is positive, but

very little. And ending it to the objective of the study enables the researcher to conclude that the Islamic bank financing has a direct impact on the total investment and indirect impact on real per capita income.

According to a study of (Hafas Furquani and Ratna Mulyany, 2009) in Malaysia, whose objective was to see if the financial system affects economic growth or economic growth has an impact on the financial operations system in the long term, using the cointegration. And the following economic variables: the total Islamic banking finance, per capita from the Gross Domestic Product (GDP), fixed investment., Commercial activities. The result was that, in the short term only fixed investment leads to the development of Islamic banking system and this from 1997/01 to 2005/04, but in the long term, there is a bi-directional relationship between the Islamic bank and fixed investment. And the relationship between GDP and the Islamic Bank, where the increase in GDP lead to the development of Islamic banking system and not vice versa.

The study of (Mohamed Goaid and Seifallah Sassi, 2010), that was aimed to find the nature of the relationship between the development of the financial sector including the Islamic banking sector and economic growth for the 15 of the *MENA* countries, during the period 1993-2006. Using the method of GMM and the following variables: Gross Domestic Product (GDP), the Islamic Bank Credit directed to the private sector (CPSIB), Credit of the Conventional Bank direct to the private sector (*CPSCB*), Inflation, to $(ex+imp)/GDP$. Government Consumption (GC). Therefore, he found that Islamic banks show a weak relationship with economic growth.

The study of (Mohamed Abduh and Moh Azmi Omar, 2012), that has a purpose to study the short-term and long-term relationship, between development Islamic Bank “*THE DEVELOPMENT OF ISLAM FINANCIAL BANK*” and economic growth in Indonesia from 2003-2010, by using Autoregressive Distributed Lag (*ARDL*) models. That depend on choosing the Bound tests Method and the following variables: Total Islamic banking finance as variable that expresses the financial sector, two variables reflect the real economic sector of Gross Domestic Product (GDP) and fixed capital ($GFCE$). They reached through this study that there is a short-term and long-term relationship between Islamic banks and economic growth, but does not support the either hypothesis of supply leading nor the following demand, but a two-way relationship.

According to a study of (Turkhan Ali Abdul Manap and Mohamed Abdul and Azmi Omar, 2012) on Malaysia, that objective was also to examine the causal relationship between Islamic banks and economic growth. And the relationship between Islamic banks and fixed capital from 1998 to 2012 was different from other studies in the use of the test Toda-Yamamoto and bootstrap granger non-causality, and the following variables: Gross Domestic Product (GDP), fixed capital, Total Islamic banking finance. The researchers found a causal relationship unidirectional heading of the Islamic banking sector to the economic growth that supports the hypothesis of supply leading for Schumpeter.

With regard to the study of (Mohamed Abduh and Nazreen T. Chowdhury, 2012) and whose objective was to examine the causal relationship between the development of Islamic banking and economic growth in Bangladesh for the period from 2004 to 2011 using the method of integration and concurrent causation granger's. The following variables:

GDP, total deposits of Islamic banks and the total finance of Islamic banks, They found them to be there a positive relationship between the total Islamic banking finance and economic growth in the short and long term, explains that the development of Islamic banking is the policy pursued by the state to increase the total income.

The study (GudarziFarahani, Yazdan and Sadr, Seyed Mohamed, 2013), which it aims also study a short-term and long-term relationship between the development of Islamic banking and economic growth in both Iran and Indonesia from 2000-2010, by using Autoregressive Distributed Lag (*ARDL*) models and Error Correction model (*ECM*). And use the following variables: *GDP*, fixed capital, total Islamic finance banking, researchers found through the study the existence of a bi-directional relationship between the development of Islamic banking and economic growth in the short and long term, in both Iran and Indonesia.

The study of (Mosab I.Tabash and Raj S.Dhankar,2014), experimentally analyzes the relationship between the development of finance Islamic banking system and economic growth in the United Arab Emirates. Where researchers use finance Islamic banks orientated to the private sector as an indicator of the development of Islamic banking finance system and Gross Domestic Product (*GDP*), Global Fixed Capital Formation (*GFCF*), Foreign Direct Investment (*FDI*), As indicators of real economic growth from 1990 to 2010 and co-integration test for Johansson and causality of Granger. The results indicated that there is a strong positive relationship between finance Islamic banking and economic growth in the *UAE*, also there is a one-way relationship moving from finance to growth that supports the supply finding hypothesis of Schumpeter. In addition to the presence of a bi-directional relationship between finance Islamic banking, and foreign direct investment, where Islamic banks are considered suitable for attracting foreign direct investment into the country's environment, as the latter contribute to the development and improvement of Islamic banking in the United Arab Emirates.

Also there is a study of (Mohammed Ali Al-Oqool, Reem Okad and Mohammed Bashayreh, 2014). This study was conducted to explore the relationship between financial development of Islamic banks and economic growth in Jordan during the period 1980 to 2012. researchers have used all of the total funding (*FINC*) and total deposits (*DEPI*) as a measure of financial Islamic banking development (*FIBD*) while used the real gross domestic product (*RGDP*) as an indicator of economic growth, the use of a test for the joint integration of Johansson and causality of Granger. The results showed the existence of a bidirectional relationship between real *GDP* and funding Islamic banking that reflect the positive contribution of Islamic Banks of Jordan in the financing of social and economic development process in Jordan. The results also showed the presence of a one-way relationship between *GDP* and total deposits moving from *RGDP* to *DEPT*, to reflect the excess liquidity problem faced by the Islamic banks in Jordan.

Finally, the study of (Najeb Masoud and Suleiman Abusabha, 2014), which aim was to test the relationship between the development of the Islamic banking sector (*FIBD*) and economic growth (*EG*) in *MENA* countries, by using quarterly data for each of the real gross domestic product (*RGDP*), total Islamic banking financing (*IBFIN*) and gross formation capital (*GFC*). During the period 2000-2014

for 10 Muslim countries of the *MENA* countries. The co-existence test of each of Engle, Granger and Johansson showed the existence of a short- and long-term complementary relationship between development of the Islamic banking sector and economic growth in these countries.

Based on the above it can be said that the results of these experimental studies did not reach a clearly practical guide emphasizes the role of Islamic banks in achieving economic growth and this is what we have observed variation in the results of these studies.

IV. RESEARCH METHOD AND DATA SOURCES

Based on the availability of data, we use in this study annually time series data for the variables: Islamic bank total financing (*IBF*) as a represent of "Financial sector" and three variables representing "real economic sector" namely real Gross domestic Product per capita (*GDP*), real gross fixed capital formation (*GFCF*)¹, and trade activities that involve export plus import (*TRADE*) as proxies of economic growth over the period of 2000–2012. The data set is extracted from World Trade organization, World Bank and Global Development Finance and Islamic Banks and Financial Institutions Information (*IBIS*)².

To provide empirical evidence of the long-run integration between Islamic banking sector and economic growth and to see the dynamic causal link between Islamic finance and economic growth we use econometric estimation methods. Our model can be written as follows :

$$GDP = \alpha_0 + \alpha_1 IBF + v_1 \dots (1)$$

$$IBF = \alpha_0 + \alpha_1 GDP + v_1 \dots (2)$$

$$GFCF = \alpha_0 + \alpha_1 IBF + v_1 \dots (3)$$

$$IBF = \alpha_0 + \alpha_1 GFCF + v_1 \dots (4)$$

$$TRADE = \alpha_0 + \alpha_1 IBF + v_1 \dots (5)$$

$$IBF = \alpha_0 + \alpha_1 TRADE + v_1 \dots (6)$$

This paper utilizes cointegration and granger causality test, and to test the causal relationship between Islamic banking and economic growth this study will be pursuing three subsequent conditions: The first step is to know whether the series are stationary or not. To examine the unit root of the time series variables, we employ Augmented dickey-Fuller (*ADF*) tests suggesting by dickey and Fuller (1979) and Phillips-Perron (*PP*) tests proposed by Phillips and Perron (1988). The *ADF* and *PP* tests conducted with the inclusion of a constant and a trend of the from to determine the order of integration for each variable. If we can not reject the null hypothesis of unit root implies that the linear combination of variables is non-stationary; hence we cannot pursue for cointegration tests.

The second step is to test for cointegration using the Johansen and Juselius cointegration tests. The existence of cointegration suggests that the variable: Islamic bank financing ,*GDP*, investment and trade posses a long-run relationship, and

¹We 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.

²The 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>

consequently, there must be at least one direction of causation in the Granger sense, either unidirectional or bi-directional causality. Johansen and Juselius (1990) have developed two test statistics “the trace test and the maximal eigenvalue test” to determine the number of cointegrating vectors. But before applying JJ-cointegration tests, we need to determine the lag length K in VAR model, in this study Akaike Information Criteria (AIC) is used for selecting the optimal lag.

The last step is to see the dynamic causal link between Islamic finance and economic growth, Granger causality concept (Granger, 1969; 1980) states that if two variables (X, Y) are cointegrated and each is individually integrated of order one $I(1)$. Then either X causes Y if and only if the past values of X

help to predict the changes of Y or Y causes X if and only if the past values of Y help to predict the changes of X .

V. EMPIRICAL RESULTS

In this section we shall discuss the results of the Unit root test, Cointegration test, and Granger –Causality test. The lags for the Unit root test are set to 1 as suggested by the Akaike Information Criteria, AIC . The ADF and PP test show that all series are found to be non-stationary at levels and stationry at their first differences, that is all variables are integrated for the same order, *i.e.* $I(1)$; Based on this result we can expect that these series may be Co-integrated as well.

Table 1 :Unit RootResult :

Variables	ADF test		PHILLIP-PERRON test	
	Level	1 st Difference	Level	1 st Difference
GDPPC	0.272184 (0.9652)	-2.761544** (0.0106)	1.904561 (0.9991)	-5.208360** (0.0023)
GFCF	-1.360240 (0.5650)	-3.439641** (0.0330)	-1.346585 (0.5713)	-3.438279** (0.0331)
IBF	-2.019351 (0.2756)	-4.278023* (0.0089)	-2.019351 (0.2756)	-6.253903* (0.0005)
TRADE	-2.365255 (0.1711)	-1.970769*** (0.0507)	-1.093333 (0.6810)	-1.970769*** (0.0507)

Notes : *,**,*** significant at 1%,5%,10% level respectively, figures in parentheses are the p-value

Having concluded that each of the series is stationary at first differences, we continue to examine whether there exist long run equilibrium between Islamic banking and economic growth that constitute GDP , Fixed investment, and

international trade activities of Saudi. Table 2 presents the result of the Johansen-Juseliuscointegration test. The Akaike information Criteria (AIC) was used to select the optimum lag length of the level VAR system required in each case.

Table 2 : Johansen’s test for the number of cointegrating vectors (VAR, 1 lag)

Null	Trace Statistics	Critical Value	Max-Eigenvalue	Critical Value
		5%		5%
GDP H0 : r=0 H1 : r≤1	6.645790 0.219326	15.49471 3.841466	6.426465 0.219326	14.26460 3.841466
INVESTMENT H0 : r=0 H1 : r≤1	24.83251** 3.637792	15.49471 3.841466	21.19472** 3.637792	14.26460 3.841466
TRADE H0 : r=0 H1 : r≤1	21.21253** 3.776176	15.49471 3.841466	17.43635** 3.776176	14.26460 3.841466

Note : **significant at 5% level.

The result shows that null hypotheses of non-cointegration are rejected at 5% level for Investment and international trade activities. This suggests that at least one cointegrating vector exist in each of the variables. The Investment and international trade activities cointegration equations suggest that in the long run Islamic bank financing contribute to increase in Investment and international trade activities of Saudi. Meanwhile for GDP , although the cointegration equation shows correct sign, it is not significant at any level.

This suggests that Islamic bank financing does not contribute to Saudi’s GDP in the long run.

In general, we conclude that Islamic bank financing influences the economic growth of Saudi by increasing

investment, international trade activities, and not through GDP .

Since there is no evidence of Co-integration between Saudi’s GDP and Islamic bank financing in the long run, we could not

proceed away *GDP* for the Granger causality tests. The absence of a co-movement in time series on *GDP* and *IBF* implies that searching for a long-run causal relationship between the two variables loses much of its meaning. In order to see the direction of the relationship between variables, The Granger causality tests for Islamic banking and economic growth is given in Table 3. It can be observed that there is a causal relationship between *IBF* and *GFCF*. However, our results show that a uni-directional causality exists only from Islamic banks financing to

Investment, since the probability value (0.0448) less than (0.05). So, the null hypothesis is rejected, this finding seems to support Supply leading hypothesis. Thus, Islamic banking granger causes the development of real economic sector in Saudi through increasing her fixed investment. In the case of *TRADE*, it is found that Islamic bank financing does not cause International trade activities of Saudi and vice versa, we can Justify this result Saudi's exports consist mainly of oil, gas and petrochemical Products.

Table 3: Granger Causality Test – Islamic banking and Economic Growth

Null Hypothesis	F statistics	Probability
IBF does not granger cause GFCF	5.42357	0.0448**
GFCF does not granger cause IBF	2.57981	0.1427
IBF does not granger cause TRADE	0.01002	0.9225
TRADE does not granger cause IBF	1.80839	0.2116

**** Significant at 5% level**

CONCLUSION

This paper is an empirical study on the relationship between Islamic banking and economic growth in Saudi over the period of 2000–2012. The results show that in the long-run, Islamic bank financing is positively and significantly correlated with capital accumulation and International trade activities of Saudi. We also find that the causality relation exists in the Islamic bank's financing to economic growth in a unique direction from the development of financial system to economic growth, but not in the opposite direction (Supply Leading). Where Islamic banking granger causes the development of real economic sector in Saudi neither by increasing to her *GDP* nor by contributing to her International trade activities but through increasing its fixed investment. In the regard, we can say that Islamic banking has effectively played its main role as financial intermediaries that facilitate the transmission of savings from surplus households to deficit households. However, the current commitment to develop comprehensive Islamic financial system and to be more globalized and integrated with international financial system could enlarge the share of total financing of Islamic banks and could positively boost international trade activities in the long-run. So the improvement of the Islamic financial infrastructure in Saudi may benefit economic development and it is important in the long-run for economic welfare.

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