Analyzing the Empirical Link between Islamic Finance and Growth of Real Output: A Time Series Application to Pakistan

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ABSTRACT

There is a growing trend among development economists regarding the importance of financial sector for economic development and growth activities. The development thus introduced, helps to promote welfare and enhances poverty alleviation. This study is an attempt to find the nature of link between Islamic banking financing and development of output growth for Pakistan. Time series data set has been utilized for a time period ranging from 1980 to 2013. Following the Phillip Perron (PP) and Augmented Dicky Fuller (ADF) test of unit root this study applied the methodology of Vector Error Correction Model (VECM) for estimation of short run and long run elasticities and found encouraging results in favor of promoting the Islamic banking practices in Pakistan.

Keywords: Islamic banking credit, real output growth, Islamic finance, time series analysis.

INTRODUCTION

With the introduction of Structural Adjustment Program, financial development has become a key determinant in economic uplifting of developing countries, to achieve high and sustained growth rates. (Ellahi & Khan, 2010). Financial institutions and services provided by financial sector are largest among all other sectors. Literature supports this argument that a well-functioning and efficient financial system provides opportunity to save funds, invest them in profitable investment opportunities, furthermore it increases competition at local as well as international level (Sutton & Jenkins, 2007).

The economic disturbances and extreme worsening conditions faced by developing nations prior to openness programs include currency and debt, budget deficit and inflation. This forced these developing nations to seek help from international funding agencies (Ayadi, Adegbite, & Ayadi, 2008) to formulate some policy package to tackle the situation. The multilateral funding agencies provided financial as well as technical assistance and advice to the developing countries (Ayadi *et al,* 2008). On the same pattern, the financial system of Pakistan improved after the implementation of comprehensive structural adjustment programme financed by international and multilateral funding agencies. The core objective of this program includes bringing the Pakistan economy in line with rest of the world (Khan, 2005).

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Growth of real sector of a country is an ultimate goal to achieve by all the developing nations. Islamic principles encourage the growth and sustainable development through the instruments of Zakat (distributional impact), prohibition of Riba (interest free banking) and inheritance laws. (Ishrat Hussain, MBL). The time period from 1980 onward has been considered as the golden period during which the initiatives and measures had been taken to promote the Islamic banking system in Pakistan. It includes the banking practices of both types firstly, developing full fledged Islamic banks and secondly, developing the Islamic banking subsidiaries in conventional banks. Consequently these efforts did not prove to yield a positive outcome. During the 1990s the system was rejected by federal shariah court and the need of new system was emerged. It was concluded that a set of rules and regulations is required for the implementation of Islamic banking system and it is a long process requiring planning (SBP, 2007)[4].

Banking services are delivered through certain tools**,** the instruments used by Islamic banking sector include *Musharkah, Mudarba, Murabaha, Bai Muajjal, Ijarah, Istisna, Ijarah wa iqtana, istijar and Salam.* A brief introduction of these terms is presented in appendix. These financing modes are diverse in nature and their nature differentiates them from the tools used in conventional banking system. With growing economic and financial needs of Islamic financial services, Pakistan economy required an Islamic banking sector to meet the credit requirements with religious constraints. The series of efforts and measures were taken during the 1970s, while the financial restructuring programme during the early 1990s also introduced a number of initiatives taken in favor of Islamic banking system in Pakistan. Furthermore, during the early 2001, an effort has been put up by the government of Pakistan to re-launch the Islamic banking in Pakistan (SBP, 2007). Imam and Kpodar (2010) supported the idea that Islamic financial institutions provide financial services to fulfill the requirements of Muslim customers; however these services are not religion specific. There are also a number of institutions which are involved in profit maximization; the only difference is the difference in their provision of services is shariah compliant rules and regulations.

Origin and Development of Islamic Banking

The Quran prohibits riba, which is the guiding rule behind the establishment of Islamic banking across the world. A few verses from Holy Quran and a few ahadith highlighting the importance of prohibition of riba include:

Those who devour Riba will not stand (especially for judgments before Allah) except as stands one whom Satan by his touch has driven to madness. That is because they argue: "Business and Riba similar to each other."But Allah has made "business" Halal and He is made 'Riba' Haram. Those who after receiving this warning (concerning the Haram of Riba) from their Lord, (now) desist (from Riba) , may keep whatever they had previously earned (as Riba) ; and their case (will now be judged by) Allah (alone ,i.e. the Islamic State will not deal with that matter); but those who return (to Riba even after this revelation of the Quran) are companion of fire (of Hell) ; they abide therein (forever). (The Quran -Surah 02- Al Baqarah verse 275).

[4] State bank of Pakistan, Annual report of islamic banking review 2003-2007.

Allah will deal with Riba in such a way that it would be uprooted , but He will give (constant) increase for deeds of charity ; for He loves not creatures who are ungrateful and wicked (The Quran -Surah 02- Al Baqarah verse 276.

Prophet Muhammed (SAW)) cursed the one who takes Riba, the one who gives Riba the one who records the transaction, and the two witnesses thereof. He (SAW) said: They are all equally guilty." (Sahih Muslim).

Abu Hurairah (Raliyallahu) said that the Messenger of Allah Prophet Muhammed (SAW) said: Riba is of seventy different parts, the least dangerous being equivalent to a man marrying (I.e. having sexual intercourse with) his own mother."(Sunan Ibn Majah, Baihaqi).[5]

With this background, the Islamic thinker came to know the fact that, financial market and financial transactions can be built on the concept of Islamic banking started during the late 60s, and specifically during the 1970s.The main feature of this banking system was establishment of interest free banking system. Although this concept has been widely accepted, the characteristic features of the system include:

- The transactions involving usury in any form are prohibited by shariah, Islamic banking system practice the 'interest free banking' following the rule of shariah.
- Out of Five tenants of Islam, zakat is a financial obligation; it must be taken from rich and distributed to destitute and among its heads.
- It is counterproductive to show selfish attitudes, Islam promotes care of other fellow beings, and Islamic banks distribute profits and losses equally among the partners and investors. However it may be pre decided at some time.
- Market practices and transactions which discourage the poor are strictly prohibited in Islam. Islamic banking system does not involve itself into such activities.
- Islamic laws are based on the statement that 'life is a test', all the resources and rights are given to human beings by Almighty Allah, and man is trustee of all these resources. The absolute ownership is of Almighty Allah, and man has to be accountable for this. Resources (national) held by Islamic bank are attributed to the walfare of human beings.
- Islamic financial institutions and tools work on the equity shares and profits and losses both are shared by institution and its client after the performance of this projected is evaluated.
- Debt based services are also present in this system but it is done on the golden principle of Qard- e- Hassan, for which no interest is paid on debt transactions.

It was the time period of 1960s when Egypt started the pioneering Islamic banking practices on rural side, although not on large scale, but it was a successful experience scale, hence they were motivated to start the banking on large scale. Later on during 1975, they started the practices on national level in 1975 (Ahmad, 1995). Following developments and a stream of

[5] The ahadith and Ayahs have been taken from http://www.sailanmuslim.com

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banking with shariah compliant rules and regulations, today the Islamic as well as the non Islamic western countries has adopted the practices of Islamic banking and propagated it into their financial system. The present study is an empirical analysis taken to find the impact of Islamic financial credit on output expansion of Pakistan. The empirical literature on role of Islamic finance for promoting economic growth is very limited. Hence, present paper narrows the literature gap to analyze the issue for Pakistan. It is organized as follows: Following introduction in section one, Review of previous literature is given in section two. Section three discusses methods, data, variables and methodology of estimation. While, conclusion and estimation output is given in last section.

REVIEW OF PREVIOUS LITERATURE

Econometric studies and methodologies have been adopted to find the growth of real sector and development of Islamic financing, as conducted by Furqani and Mulyany (2009). The analysis was carried using time series data and application of econometric techniques. A multivariate Vector Error Correction Mechanism (VECM) methodology revealed that a long run relationship exists between Islamic banking financing and indices of economic growth. Furthermore, an evidence of bidirectional causality was also been confirmed by this study. The study found that finance and growth here follow a demand following hypothesis for the case of Malaysia.

A number of studies in literature were conducted to find the comparison between both types of banking system. Mavkaris and Nadia (2009) discussed the background and comparison between two banking systems i.e. Islamic and conventional. This study presented the current scenario of Islamic financial system. The main difference highlighted was the model of Islamic banking system. Finally study concluded that implementing Islamic financial system can help promote the economic development. On the same lines El Din (2003) conducted an analysis for Sudan economy and found that financing to medium enterprises has been inefficient in eradicating the poverty. This study postulated that both the banks should not be considered as competitors of each other because analysis did not find any difference and gap among both of them. (Din & Ibrahim, 2003). Saleem and Shahid (2007) mentioned the real development terms from an Islamic perspective. The focus of this study was on the fact that Islamic ideology can be used to build the financial institutions to bring the development. This study highlighted two schools of thoughts. One considers that Islamic norms are important for development of LDCs while the other thought Islamic financing as a threat to achieve overall development.

Wilson (2009) studied the Gulf Cooperation Council as a case study and found the mechanism of development for Islamic financial services. Major developments brought by this cooperation were takaful, sukuks, shariah compliant governance system, and the performance of financial institutions at regional level. Alam (2008) studied the interest free Islamic banking institution in Bangladesh. Specifically the study was designed to explore the differences between the services of Islamic banking systems and conventional banking practices. Furthermore, the study also tried to find the credit disbursement mechanism for rural sectors. Major findings stated that despite of long history of conventional banking system in Bangladesh, interest free banking system also contributed positively to build the money market of the economy.

Imam and Kpodar (2010) studied the determinants of Islamic banks diffusion all over the world during the period 1992-2006. Major determinants covered by this have been share of Muslims in overall world population, income per capita and their ability to produce oil. Furthermore it highlighted that interest rate has negative impact on Islamic banking and oil prices are also important determinant for Islamic banking diffusion. (Imam & Kpodar, 2010). (Bley & Keuhn, 2003) Bley and Keuhun (2003) analyzed the perception of student regarding the knowledge of comparison between conventional and Islamic banking. The study was conducted for United Arab Emirates. Using data set from university graduates, it was found that people prefer Islamic banking system because of their religious affiliations, lingual differences and also on the level of education. People with finance knowledge have more preferences to banking system based on Islamic modes. Differences and similarities between Islamic and conventional banking system has been studied by Hanif (2011), the study found that a major difference lies between both types of banking systems. Since it is a new concept therefore financing options and investment opportunities are low.

METHODS AND MATERIALS

The study used annual time series data set ranging from 1980 to 2012, major data sources included Pakistan Economic Survey (various issues), and annual reports of State Bank of Pakistan (SBP), statistical Bulletin issued by state Bank of Pakistan and International Financial Statistics (IFS) various issues. The estimation is carried out by applying econometric technique of Johansen and Juselius's (1990) framework while short run estimates are found by applying Error Correction Mechanism (ECM). The study has followed the variables scheme used by Furqani and Mulyany (2009) including: *Gross Domestic Product (Y_t), Gross Fixed Capital Investment (SI), Trade Openness (TOPEN*), and *Islamic Banking Credit (IBC)*. The ECM representation of the model is given as:

$$\Delta lnRY_t = \alpha_0 + \alpha_1 \Delta lnRY_{t-1} + \sum_{i=0}^{k} \mu_i \, \Delta lnIBC_{t-i_{t-i}} + \Delta + \sum_{i=0}^{k} \delta_i \, \Delta lnSI_{t-i}$$
$$+ \sum_{i=0}^{k} \varphi_i \, \Delta lnTOPEN_{t-i} + \gamma ECM + \varepsilon_t$$

The above model will be estimated in three steps. At first step we will use the Augmented Dickey Fuller (ADF) unit root test to determine the order of integration. Second step involves for deciding the existence of long run relationship applying co-integration test. While, in step three we estimate the short-run error-correction models of equation.

EMPIRICAL RESULTS AND CONCLUSION

Stationarity of data is important characteristic, before the estimation process. Present analysis has applied Augmented Dicky Fuller (ADF) test and Phillip Perron (PP) test to check the stationarity of data. Finding order of integration are pre requisites to find the nature of link between the Islamic banking credit and output growth? Estimation results of stationarity are given below in Table 1. It is seen that all the variables are non-stationary at level while they become stationary after taking the first difference.

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Table 1: Unit Root Test Results

Variables	*ADF Test Results*		*Phillip Perron Test Results*		*Decision*
$Ln(Y_t)$	-0.08103 (-2.9499)	-3.2218* (-2.9527)	-0.54832 (-2.9472)	-5.49625* (-2.9499)	I(1)
Ln(IBC)	-2.12173* (-2.9499)	-4.3663* (-2.9527)	-2.7248* (-2.9472)	-4.85418* (-2.9499)	I(1)
Ln(TOPEN)	-2.103407 (-2.9499)	-6.68396 (-2.9527)	-1.73019 (-2.9472)	-8.59486* (-2.9499)	I(1)
Ln(SI)	-1.882929 (-2.9499)	-8.3072* (-2.9527)	-2.36214 (-2.9472)	-7.99069* (-2.9499)	I(1)

Note: *shows significance at 5% level, figures in parenthesis are values of both tests at first difference, null hypothesis states that series is non-stationary.

Since all the variables included in model are integrated of order one. Hence there is a justification to apply ECM as an appropriate methodology. It can be seen from the Table 2 below that both the statistics (l-□□trace) and (l-□□max) support that there is co-integration among the variables of *GDP*, *IBC*, *SI* and *TOPEN* pointing to the existence of one and two co-integrating equations among the variables respectively.

Table 2: Johansen Test: GDP and Co-integrating Factors

Maximum Eigen-values Test (□□□□max)				
Null Hypothesis	*Alternative Hypothesis*	*Eigen value*	*Max-Eigen Statistic*	*0.05 Critical value*
r=0	r=1	0.783188	53.50533*	43.41977
r=1	r=2	0.618792	33.75434	37.16359
r=2	r=3	0.518008	25.54400	30.81507
r=3	r=4	0.304641	12.71644	24.25202

Note: * shows significance at 5%

Trace Test (□□□□trace)				
Null Hypothesis	*Alternative Hypothesis*	*Eigen value*	*Trace Statistic*	*0.05 Critical value*
r=0	r≥1	0.783188	134.1984*	107.3466
r=1	r≥2	0.618792	80.69311*	79.34145
r=2	r≥3	0.518008	46.93878	55.24578
r=3	r≥4	0.304641	21.39478	35.01090

Note: * shows significance at 5%

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In the next step, we find long run output function by normalizing the first co-integrated vector on the growth rate of real GDP. The long run results are given below in Table 3. Results show that in the long run Islamic banking credit has a positive and robust link with economic growth variable. Similar findings have been observed for trade openness. However, the link is not significant at 5% level of significance. The impact of share of investment in GDP has negative link in the long run because of inefficient investment projects initiated during the post liberalization policies.

Table 3. Normalized Coefficients of Co-integrating Vector on Real GDP

Variables	*Coefficient*	*Standard Error*	*t-State*
Ln (IBC)	0.49609*	0.07290	6.78475
Ln(TOPEN)	0.138715	0.08982	1.54416
Ln(SI)	-0.367974*	0.04983	-7.42002
Constant	-10.33251		

*shows significance at 5% level

Further, the short run estimates are given below: here, in the short run effect of banking credit by Islamic banking system is positive but insignificant. While in the short run impact of trade openness on economic growth variables has been turned to be negative. Impact of investment on economic growth variable is positive but insignificant in short run showing that investment opportunities have proved to be insignificant in short run. Error correction term *ECM (-1)* has also been calculated along with these statistics, it shows speed of adjustment. Its sign is negative and significant as expected theoretically. This shows a very slow speed of adjustment after the short run equilibrium is disturbed from its mean value. At the end, value of R-squared is 0.74 showing that 74% variation in real GDP is explained by explanatory variables included in this model. Overall, the model is good fitted.

Table 04. Short-run growth Equation

Variables	*Coefficient*	*Standard Error*	*T-State*
$\Delta ln(IBC)_{t-1}$	0.05172	0.03689	1.44342
$\Delta ln(TOPEN)_{t-1}$	-0.26784	0.05342	-5.01778
$\Delta Lln(SI)$	0.07115	0.045830	1.55692
ECM(-1)	-0.02776	0.14071	-2.18364
R-squared = 0.74			

CONCLUSION

With the development of financial sector over the time, Islamic banking has emerged as an alternative to the conventional banking sector. Pakistan also adopted the idea of Islamic banking and introduced partial as well as full-fledged banking system in line with the systems of rest of the world. Overall, annual growth of approximately 75% has been observed in credit of Islamic banking system across the world. It is however, also admitted that Islamic

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banking positively influences the economic growth pattern, therefore, the demand for its product has shown an increasing trend day by day. Keeping its importance into consideration, this empirical analysis has been conducted to study the nature of link between Islamic banking financing and real output growth in Pakistan using a time series framework. An addition of a few control variables and application of VECM method of estimation found that a positive link exists between Islamic banking credit and growth of real GDP. The findings of positive link are in line with the results of Furqani and Mulyany (2009) and Manap et al (2012), similar findings has also been reported by Hanif (2011) for Pakistan. There are suggestions to promote the Islamic financing tools in conventional banking systems as well.

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