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# Islamic Banking and Economic Growth: Evidence From Asia

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This paper investigates the short- and long-run causality relationship between Islamic banking and the economic growth. The main goal of this paper is to examine the relationship between the economic growth and Islamic banking. The dataset used covers the Asia countries over the period of 1980-2009. The unit root test Im, Pesaran, and Shin (IPS) (2003) confirms that all of the variables that the authors use in the equation below are stationary. The empirical result of the Granger causality test shows a bidirectional relationship between Islamic banking and the economic growth and also a bidirectional relationship between the economic growth and export.

*Keywords:* Islamic banking, economic growth, causality test, Asia zone

## Introduction

A banking system provides a field of economic growth by collecting resources and supplying them to applicants. The clear character of the conventional banking is a fixed interest rate. In the recent decade, another type of banking is formed, namely, the Islamic banking, whose clear difference with the conventional banking is the zero interest rate. In Islamic banking, interest rate is not predetermined. Instead, it is a share of return. The Islamic banking has 11% growth rate during the recent three decades. And over eight to 10 years ago, the savings of half of the Islam world were collected in these banks. However, the Islamic tools are very expensive now and do not account for innovations. In the present article, the authors are looking for an answer to the question, if the Islamic banking affects the economic growth in the same way as the conventional banking does.

Many studies have been conducted on the relationship between Islamic banking and economic growth. Levine, Loayza, and Beck (1999) showed a positive relationship between the financial development and the economic growth. King and Levine (1993) had reviewed financial factors on the long-term effects on 80 countries in the period of 1960-1986. Results show that there is a positive and significant correlation between the financial development and the growing investment and efficiency of investment. Atje and Jovanovic (1993) used a sample for 70 countries, which indicated that financial markets had effects on the economic growth. Luintel and Khan (1999) had confirmed the bidirectional causality between growth and capital. Kahf (2002)

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showed that Islamic banking had a significant share in the developing and developed countries, especially when in the secession situation and at the lower level of economic growth. Alam, Butt, and Iqbal (2001) had compared the performance of the Islamic and conventional banking. According to them, Islamic banks are relatively more stable, and in Islam, banks like conventional banks search for a maximum profit.

## Theoretical Basis

Banking system affects the economy through collecting little deposits and transferring them in a loan form to businessmen and firms. These little resources by itself cannot affect the economic system, but collecting them in banks has become huge and significant resources for investments by delivering the depositors' finance in a loan form to the demanders of these loans. Investors take an action in investment by receiving these resources, and investment increases from the aspect of demand. These loans have also resulted in an increasing total demand, and the increasing total demand by itself causes the increasing national income and supports the economic growth. This investment makes necessary capacity for a national production. In conventional banking, a predetermined and fixed interest rate is received by the loan demander and a fixed and predetermined interest is paid to the finance supplier. However, in Islamic banking, the rate of interest is zero. Zero interest rate in Islamic banking does not mean zero return for capital. Instead, it means that there is no predetermined interest rate for capital. Islamic banking permits interest sharing, although the proposition of interest sharing is predetermined, the rate of interest is not fixed and defined. Generally, Islamic banks are more effective than conventional banks, because the loan expense is lower and they have a lower inflation effect. On the other hand, if a loaner cannot repay his/her loan, he/she should pay the penalty for rate of interest in hard situation or in a situation when the economy is instable.

In this system, all people even low-income persons can also use these resources, because these contracts are based on the participation principle.

## Data and Methods

In this study, the main variables for the causality test include Islamic banking (In this paper, the authors use credits of Islamic banking: size of credit measures of the banking sector), gross domestic product (GDP), and trade. This paper applies the panel data model to the Granger causality for studying the relationships among these variables. The model is presented as follows:

$$\Delta IBF_t = \beta_{30} + \sum_{i=1}^{p} \beta_{31i}\Delta IBF_{t-i} + \sum_{i=1}^{p} \beta_{32i}EX_{t-i} + \sum_{i=1}^{p} \beta_{33i}\Delta Y_{t-i} + \beta_{34}ECT_{t-1} + \varepsilon_{3t} \quad (1)$$

$$\Delta EX_t = \beta_{20} + \sum_{i=1}^{p} \beta_{21i}\Delta EX_{t-i} + \sum_{i=1}^{p} \beta_{22i}\Delta Y_{t-i} + \sum_{i=1}^{p} \beta_{23i}\Delta IBF_{t-i} + \beta_{24}ECT_{t-1} + \varepsilon_{2t} \quad (2)$$

$$\Delta Y_t = \beta_{10} + \sum_{i=1}^{p} \beta_{11}\Delta EX_{t-i} + \sum_{i=1}^{p} \beta_{12}\Delta Y_{t-i} + \sum_{i=1}^{p} \beta_{13}\Delta IBF_{t-i} + \beta_{14}ECT_{t-1} + \varepsilon_{1t} \quad (3)$$

where *IBF* is the Islamic bank sector, *Y* is the GDP, and *EX* is the trade.

The sources of variables are data from United Nations (UN), World Development Indicators, International Monetary Fund (IMF), and growth data resources.

To calculate the credits allocated to private sectors by Islamic banks, the authors follow two steps:

(1) The authors have made an exhaustive list of Islamic banks in selected Asian countries;

(2) The authors assume that all credits provided by Islamic banks are allocated to private sectors, because the main selection criterion of projects in Islamic banks is the productivity. Therefore, the authors aggregate different totals of credits from banks' balance sheets to get the overall credits allocated to private sectors by Islamic banks for each country. Data source is the bank scope database compiled by Islamic finance information service (IFIS) dataset.

The dataset used covers Asian countries over the period of 1980-2009. Those countries are: Bahrain, Iran, Malaysia, United Arab Emirates, Pakistan, Kuwait, Saudi Arabia, Qatar, Iraq, Oman, Turkey, and Yemen.

**Panel Data Unit Root Tests**

To avoid a spurious regression, the stationarity of the variables in the model should be studied. The econometrics literature has offered several tests in this regard. Tests introduced in this field include Augmented Dickey Fuller (ADF)-Fischer test and those conducted by Maddala and Wu (1999), Im, Pesaran, and Shin (IPS) (2003), Hardi (2000), Choi (2001), and Levin, Lin, and Chu (2002). Since different tests have different results, here the authors use IPS test and ADF-Fischer test so that it will be able for the authors to better compare the results. The IPS test has been recognized as a heterogeneous panel root test. Since the sample countries are not heterogeneous, IPS test seems to be appropriate for the unit root.

Table 1 presents the results of IPS and ADF-Fischer tests for the three variables *IBF*, *GDP*, and *EX* at the first-order difference level. Based upon the ADF-Fischer test, the *EX* variable is at the stationary level, but all the three variables at the first-order difference level are at the stationary level of 1% based on the IPS and ADF-Fischer tests. Therefore, the variables are applied at the first-order difference level for the panel data vector auto-regression (VAR) causality analysis.

Table 1

*Panel Data Unit Root Tests*

| | Panel level series | | | Panel first-difference series | |
|---|---|---|---|---|---|
| | IPS | ADF-Fischer | | IPS | ADF-Fischer |
| *EX* | -0.52<br>(0.17) | 14.12$^{**}$<br>(0.03) | *DEX* | -4.32$^{***}$<br>(0.01) | 51.32$^{***}$<br>(0.00) |
| *IBF* | -1.25<br>(0.14) | 15.03<br>(0.09) | *DFDI* | -7.22$^{*}$<br>(0.06) | 31.63$^{***}$<br>(0.01) |
| *GDP* | 0.12<br>(0.35) | 7.61<br>(0.61) | *DGDP* | -2.35$^{***}$<br>(0.00) | 42.43$^{**}$<br>(0.03) |

*Notes.* (1) In level series, the test equation includes individual effects and individual linear trends; (2) In the first-difference series, the test equation includes individual effects; (3) The automatic selection of lags is based on the minimum Akaike information criterion (AIC): Zero to three; (4) The *p*-value is shown in the parenthesis; (5) $^{*}$, $^{**}$, and $^{***}$ indicate significance at the levels of 10%, 5%, and 1% respectively, which also denotes a rejection of the null hypothesis: Panel series has a unit root; and (6) *DEX* is the first difference of export, *DFDI* stands for the first difference of foreign direct investment, and *DGDP* is the first difference of GDP.

**Panel Data VAR and Granger Causality Test**

When estimating a panel model, the authors require assumptions with regard to the slope coefficient, intercept, and the error term. In general, the models are either fixed-effect or random-effect models. According to Hassman test, the authors estimate the random-effect model.

**Cointegration Test**

In order to study the long-run relationship among *IBF*, *GDP*, and *EX*, the authors use Pedroni cointegration test. Based upon the statistics of Table 2, H0 indicating a lack of cointegration relationship is accepted. If H0 is rejected, there is a long-run relationship among the three variables. The maximum lag in the panel cointegration model is one based upon the Schwarz information criterion (SIC). Therefore, the authors cannot apply the long-run VAR model for the three variables *IBF*, *GDP*, and *EX* and can only apply the short-run Granger causality test.

Table 2

*Pedroni Panel Cointegration Test*

| Panel weighted statistic | Probability | Group statistic | Probability |
|---|---|---|---|
| Panel *v*-statistic | 4.41 (0.311) | Group *p*-statistic | 0.121 (0.521) |
| Panel *p*-statistic | 0.022 (0.221) | Group *pp*-statistic | -2.31 (0.532) |
| Panel *pp*-statistic | -0.39 (0.01)*** | Group ADF-statistic | -4.25 (0.02)** |
| Panel ADF-statistic | 4.26 (0.00)*** | | |

*Note.* *** and ** denote the significance at the levels of 1% and 5% respectively.

Table 3 presents short-run results of Granger causality test. This test has been performed in two phases. Firstly, the equation $IBF = \alpha_{it} + \delta_i t + \gamma_{1t} EX_{it} + \gamma_{2i} GDP_{it} + \varepsilon_{it}$ has been estimated, and its residual has been used to estimate the coefficient of an error term. According to Equation (1), *IBF* has a positive effect on *GDP* and *EX* is the cause of *GDP*.

An examination of the sum of the lagged coefficient on the respective variables indicates that *EX* (3.28) has a greater impact on real *GDP* than *IBF* (2.41).

Table 3

*Panel Causality Test Results of Asia (Short-Run)*

| Dependent variable | Source of causation (independent variable) | | |
|---|---|---|---|
| | $\Delta GDP$ | $\Delta EX$ | $\Delta IBF$ |
| $\Delta GDP$ | --- | 3.28 (0.311) | 2.41 (0.199) |
| | | [0.00]*** [0.00]*** | [0.04]** [0.01]*** |
| $\Delta EX$ | 5.21 (0.51) | --- | 2.33 (67) |
| | [0.03]** [0.01]*** | [0.07]* [0.00]*** | |
| $\Delta IBF$ | 4.37 (0.311) | 5.32 (0.03) | --- |
| | [0.01]*** [0.01]*** | [0.60] [0.50] | |

*Notes.* (1) Values shown in brackets are *t*-statistics; (2) Values shown in the parentheses are *p*-values associated with the Wald test statistics; and (3) *, **, and *** indicate significance at the levels of 10%, 5%, and 1% respectively.

Again, in Equation (1), the *GDP* and *IBF* have affected *EX* and are the causes of it. In Equation (3), *EX* is not the cause of *IBF*. Instead, *GDP* is the cause of *IBF*. In general, it can be concluded that the causality relationship between *GDP* and *IBF* is bidirectional, while the causality relationship between *EX* and *IBF* is unidirectional and from *IBF* to *EX*.

## Conclusions

In this research, the authors try to study the relationship among Islamic banking, export, and economic growth. Having applied the unit root, IPS, and ADF-Fischer tests, it is found that the three variables *EX*, *GDP*,

and *IBF* are stationary at the first-order difference level. Hausman test shows that the authors have to apply the random-effect model. The cointegration test shows that there is not a long-run relationship among the three variables. Thus, the authors apply the Granger causality test for the short-term relationship among the three variables.

The authors have applied the Granger causality test for *IBF*, *GDP*, and *EX*. The study indicates a strong causality relationship among the three variables so that those abovementioned countries can focus on their *GDP*, in order to increase *IBF*, and since *GDP* is the cause of *IBF*, those countries may reinforce their *IBF* by increasing *GDP* and benefiting their advantages. In this zone, *EX* is not the cause of *IBF*, and there is no need to make a policy on the export for reinforcing *IBF*. Therefore, the Islamic banking and Islamic activities have a positive impact on the economic growth. Thus, the authors suggest that other countries should apply the Islamic banking and delete the interest rate. In general, it can be stated that these variables reinforce each other.

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