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Islamic banking and economic growth: the Indonesian experience

Islamic banking
and economic
growth

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Abstract

Purpose – The purpose of this paper is to examine the short-run and the long-run relationships between Islamic banking development and economic growth in the case of Indonesia.

Design/methodology/approach – Using quarterly data (2003:1-2010:2), this paper utilizes the bound testing approach of cointegration and error correction models, developed within an autoregressive distributed lag (ARDL) framework.

Findings – The results demonstrate a significant relationship in short-run and long-run periods between Islamic financial development and economic growth. The relationship, however, is neither Schumpeter's supply-leading nor Robinson's demand-following. It appears to be bi-directional relationship.

Originality/value – This paper uses empirical evidence to show the role of Islamic banks' financing towards economic performance of a country. To the best of the authors' knowledge, the study on the role of Islamic banking development towards economic growth is limited, particularly in the context of Indonesia.

Keywords Indonesia, Islam, Banking, Islamic banking, Islamic finance, Economic growth

Paper type Research paper

I. Introduction

I.1 Background

The nexus between, and the importance of financial development towards economic growth have received much attention in the literature of development economics. From the many research works carried out in this field, there are at least three types of causal relationships between financial development and economic growth that have been found:

- (1) supply-leading;
- (2) demand-following; and
- (3) bi-directional causal relationships.

Supply-leading relationship is:

[...] the creation of financial institutions and instruments in advance of demand for them in an effort to stimulate economic growth. This strategy seeks to make allocation of capital more efficient and to provide incentives for growth through the financial system (Patrick, 1966, p. 175).

Demand-following relationship, on the other hand, appears as a consequence of the development of the real sector. This implies a continuous widening of markets



and a growing product differentiation which makes necessary more efficient risk diversifications as well as better control of transaction cost (Hermes and Lensink, 1996, p. 17).

Out of the extensive research carried out in this field, there are no sufficient works conducted within the Islamic financial framework. The objective of this paper, therefore, is to narrow the gap in literature by examining the short-run and the long-run relationships between Islamic financial development and economic growth, particularly in the context of Indonesia, using the bound testing approach of cointegration and error correction models (ECMs), developed within an autoregressive distributed lag (ARDL) framework by Pesaran and Shin (1995), Pesaran *et al.* (1996) and Narayan (2004).

This paper consists of six sections. Section I discusses the introduction, in which the background and rationale of the study is outlined. Section II covers the review of literature, of the relationship between financial development and economic growth. It also captures the background of Islamic banking in Indonesia. Section III covers the detail of the data and research methodology employed in this study. Section IV reports the findings and discussion. Section V outlines the conclusion and last but not least, Section VI suggests directions for future research.

II. Literature review

II.1 Finance-growth nexus

Mishkin (2006) posits that indirect finance, which involves the activities of financial intermediaries, is many times more important than direct finance, in which businesses raise funds directly from lenders in financial markets, towards economic growth. For the period of 1970-1996, for example, sources of external funds of non-financial businesses in Japan were 85 percent from bank loans and 15 percent from financial markets while in Germany were almost 80 percent from bank loans and the rest from financial markets (Mishkin, 2006, p. 171).

Referring to the importance of financial development for a country, study on causal relationship between the development of financial intermediaries' activities and economic growth has been carried out extensively. Among the seminal works done in this field is a study by McKinnon (1973), Shaw (1973), King and Levine (1993), Demetriades and Hussein (1996), Levine *et al.* (2000), Beck *et al.* (2000), Beck and Levine (2004) and recently Shen and Lee (2006).

King and Levine (1993) for instance, studied this issue using data from 80 countries over the 1960-1989 periods. They constructed four indicators of the level of financial sector developments which is regressed with the real gross domestic product (GDP) per capita and its sources. First is "financial depth" which equals the ratio of liquid liabilities of the financial system to GDP. Second is the ratio of deposit money bank domestic assets to deposit money bank deposit assets plus central bank domestic assets to measure the relative importance of specific financial institutions. The third and fourth financial development indicators are designed to measure domestic asset distribution. The proportion of credit allocated to private enterprises by the financial system and the ratio of claims on the non-financial private sector to GDP are the third and fourth indicators, respectively. Their conclusion is consistent with Schumpeter's view that the financial development promotes economic growth. This conclusion is also supported by the works of De Gregorio and Guidotti (1995) and Calderón and Liu (2002).

Demetriades and Hussein (1996), however, reviewed previous studies in financial development and economic growth which combines many countries without classifying them into some appropriate groups. Demetriades and Hussein (1996) studied 16 countries from all around the world which has the following criteria; the country:

- must not be highly developed in 1960;
- has at least 27 continuous annual observations on the variables of interest; and
- its population must exceed one million in 1990.

In spite of the rather technical nature of their criteria, the data set contains countries with rich experiences in relation to both economic and financial development. All of these countries, however, displayed some evidence of reverse causation so that the relationship between financial development and growth appears to be bi-directional. Again, Deidda and Fattouh (2002) and Rioja and Valev (2002) posit that there is no significant relationship between financial depth and economic growth in countries with low income per capita. The significant relationship only appears in the high income countries.

Some studies have taken a more microeconomic approach and some used stock markets as the proxy for financial development. For example, Fisman and Love (2003) revisited an earlier paper by Rajan and Zingales (1998) by re-examining their assumptions, and the robustness of their results to alternative theories and interpretations. The result is supporting the hypothesis that financial development helps industries with good growth opportunities. It also reinforces their hypothesis that the role of financial development is to reallocate resources to industries that have good growth opportunities and not to industries with “technological dependence” on external finance.

Another study by Beck and Levine (2004) investigates the impact of stock markets and banks on economic growth using a panel data set for the period 1976-1998. The results strongly reject the notion that overall financial development is unimportant or harmful for economic growth. Therefore, they argue that stock markets and banks positively influence economic growth.

With regard to the role of Islamic financial development in economic growth, Furqani and Mulyany (2009) and Majid and Kassim (2010) are among the limited articles in this area. However, using not-so-different time span of quarterly data, their findings are different in terms of the direction of the relationship. Furqani and Mulyany (2009), on the one hand, posit that the relationship between Islamic financial development and economic growth is following the view of “demand-following” which means that economic growth causes Islamic banking institutions to change and develop. Conversely, finding from Majid and Kassim (2010) is in favor of the supply-leading view.

This study is guided by the following research questions:

- RQ1.* What is the nature of the relationship between Islamic financial development and economic growth in Indonesia?
- RQ2.* Does Islamic financial development have significant relationship with Indonesian economic growth in the short-run and the long-run?

II.2 Indonesian Islamic banking

Islamic banking and finance is experiencing a rapid growth worldwide. The International Monetary Fund (IMF) released a report which stated that Islamic banking is one of the fastest growing segments in the financial industry with a tracking

of 10-15 percent growth over the past decade, and globally, Islamic banking assets are estimated to grow around 15 percent a year of \$1 trillion by 2016[1].

In Indonesia, Islamic banking industry started 17 years ago, in 1992 with the establishment of the first Islamic bank in Jakarta, namely Bank Muamalat Indonesia. It remained the only Islamic commercial banking (BUS) until the financial crisis 1997, which caused massive destruction to the Indonesian financial system (Bank Muamalat Indonesia, 2002). In 1999, as the impact of 1997-1998 financial and multi-dimensional crises in Indonesia, four big banks under the auspices of the government were merged and become PT. Bank Mandiri (BM). These four banks were PT. Bank Dagang Negara, PT. Bank Bumi Daya, PT. Bank Exim and PT. Bapindo. BM later on bought PT. Bank Susila Bakti (BSB) which has affected by financial crises as well with condition that BSB will operate again as an Islamic bank under name of PT. Bank Syariah Mandiri (BSM). Hence, on 1 November 1999, the number of Islamic bank grows to two BUS, one Islamic window and 78 Islamic rural banks.

To date, there are ten Islamic commercial banks (i.e. BSM, Bank Muamalat Indonesia, Bank Syariah Mega Indonesia, BRI Syariah, BUKOPIN Syariah and PANIN Syariah) with 1,113 branches and 23 Islamic windows of the conventional banks with 251 branches. The total number of Islamic rural banks also increased significantly from 105 in 2006 to 146 in July 2010. Currently, there are 1,640 branches of Islamic banks spreading in the country (Table I). This rapid development is the result from government strategies through *The Blueprint of Islamic Banking Development in Indonesia*, released by Islamic banking central bank (BI) in year 2002. The blueprint mentions phases in developing Islamic banking in Indonesia and its parameter of success like:

- placing strong base for sustainable development;
- strengthening industrial structure; and
- complying with international standards for financial products and services[2].

Finally, after the Islamic Banking Act No. 21 Year 2008 concerning Islamic banking legal foundations was passed by the House of Representatives of Indonesia, many conventional banks spin-off their Islamic windows to full-fledged Islamic bank and conversion of rural banks to Islamic rural banks which base their operation within the Islamic tenets. On the other hand, demand from Muslim customers in Indonesia is also pushing the industry to fulfill their needs in terms of banking transaction under shariah principles. Both sides of government regulation and demand from customers have encouraged Islamic banking in Indonesia to grow faster.

	Year				
Islamic banks	1992	1999	2002	2006	2010 ^a
Islamic commercial banks	1	2	2	3	10
Islamic windows	0	1	6	20	23
Islamic rural banks	9	78	83	105	146
Number of branches	1	40	127	637	1,640

Note: ^aUntil July 2010

Source: Various issues of Bank Indonesia monthly statistics

Table I.
Indonesian Islamic
banking networks

The growth achieved, however, not only in terms of the number of banks and branches, Table II depicts further information related to financing to deposit ratio (FDR) and non performing financing (NPF) after total assets, total financing and total deposits. The total assets were estimated Rp80.59 trillion in July 2010 while total financing and deposits were Rp59.56 trillion and Rp61.88 trillion, respectively. All of them have been increasing by more than 40 percent on average in every year. Meanwhile, FDR has been lying between 90 and 105 percent annually since 2001 compared to the conventional banks which is around 60 percent. NPF is between 2 and 4 percent while in the conventional banking records of 6-8 percent non performing loan. In addition to this, the number of workers employed by the industry also increases throughout the years.

With regard to economic growth, Indonesia is still experiencing a positive growth of 6 percent in 2008 and 4.5 percent in 2009. While in the first half of 2010 the growth is higher than previously estimated of 5.7 percent, which is 6 percent. The Indonesian economy is expected to grow at 6 percent at the end of 2010 and slightly higher in 2011 and 2012 (Mulya, 2010). After the “1998 multi-dimensional crisis”, Indonesia is now transformed into one of the largest democratic and structurally different with what it was a decade ago. The extensive transformation in many aspects, including the rapid development of Islamic banking, has provided a more resilience foundation into the Indonesian economic development today. Focusing on the rapid development of Islamic banking in Indonesia, this paper is, therefore, aimed at providing an empirical evidence of the contribution of Islamic banking towards Indonesian economy.

III. Data and research methodology

III.1 Data

In this study, we use quarterly time series data for the variable of Islamic banks’ total financing [$\ln(fin)$] as a represent of Islamic financial sector and two variables representing real economic sector namely GDP [$\ln(gdp)$] and gross fixed capital formation [$gfcf$]. The time series data is from Q1:2003 to Q2:2010 and gathered from International Financial Statistics of IMF’s and monthly Islamic banking statistic report of Bank Indonesia.

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

Banking indicators	Years					
	2005	2006	2007	2008	2009	2010 ^a
Total assets ^b	21,465	27,618	37,753	51,248	68,213	80,586
Total financing ^b	15,649	21,060	28,834	39,451	48,472	59,559
Total deposits ^b	15,918	21,193	28,729	37,827	53,521	61,881
FDR (%)	97.75	98.90	99.76	103.65	89.70	95.32
NPF (%)	2.82	4.75	4.05	1.42	4.01	4.14
Number of workers	5,996	7,376	8,685	11,752	15,443	18,350

Notes: ^aUntil July 2010; ^bin billion Rupiah

Source: Various issues of Bank Indonesia monthly statistics

Table II.
Selected Islamic banking
indicators in Indonesia

of business activity that measure net new investment by enterprise in the domestic economy in fixed capital assets during an accounting period.

After collecting all data required, the unit root test for all variables is carried out using Augmented Dickey-Fuller (ADF) and Phillips-Perron (P-P) (Table III). Even though the ARDL framework does not involve pre-testing variables to be done, the unit root test could convince as to whether or not the ARDL model should be used. Table III shows the summary of unit root test which lead to the mixture of I(0) and I(1) of underlying regressors and therefore, the ARDL testing could be proceeded.

III.2 ARDL and ECM

The ARDL models are models formed by an autoregressive part plus a regression with distributed lags over a set of other variables. Put differently, an ARDL model regresses a variable over its own past plus the present and past values of a number of exogenous variables (Fabozzi *et al.*, 2006). The ARDL method does not involve pre-testing variables, which is particularly problematic in the unit root-cointegration literatures where the power of the unit root tests is typically very low and there is a switch in the distribution function of the test statistics, therefore, obviating uncertainty (Narayan, 2004). In other words, the ARDL approach to testing for the existence of a relationship between variables in levels is applicable regardless the underlying regressors are purely I(0), purely I(1), or mixed.

Without having any prior information about the direction of the long-run relationship among the variables, the ARDL approach to cointegration involves estimating the conditional error correction (EC) version of the ARDL and its model in this study is divided into three models:

$$\Delta \ln gdp_t = \alpha_0 + \sum_{i=1}^p \Psi_i \Delta \ln gdp_{t-i} + \sum_{i=0}^p \Phi_i \Delta \ln \bar{fin}_{t-i} + \delta_1 \ln gdp_{t-i} + \delta_2 \ln \bar{fin}_{t-i} + v_t \quad (1)$$

$$\Delta \ln \bar{fin}_t = \alpha_0 + \sum_{i=1}^p \omega_i \Delta \ln \bar{fin}_{t-i} + \sum_{i=0}^q \phi \Delta \ln gdp_{t-i} + \delta_1 \ln \bar{fin}_{t-i} + \delta_2 \ln gdp_{t-i} + v_t \quad (2)$$

$$\Delta gfcf_t = \alpha_0 + \sum_{i=1}^p \Theta_i \Delta gfcf_{t-i} + \sum_{i=0}^p \Omega_i \Delta \ln \bar{fin}_{t-i} + \delta_1 gfcf_{t-i} + \delta_2 \ln \bar{fin}_{t-i} + v_t \quad (3)$$

Variable	ADF		P-P	
	I (0)	I (1)	I (0)	I (1)
Total financing [ln(fin)]	-3.73 ***	-2.65 *	-3.22 **	-2.51
Income [ln(gdp)]	0.07	-5.61 ***	0.603	-8.88 ***
Gross fixed capital formation (gfcf)	2.78	-1.73	2.89	-3.17 **

Table III.
Unit root test

Note: Significant at: *10, **5 and ***1 percent levels

where:

$\ln gdp$: natural logarithm of real gdp.

$\ln fin$: natural logarithm of Islamic banks' total financing.

$gfcf$: gross fixed capital formation.

The F -statistic is the underlying statistic for testing the existence of the long-run relationship. When long-run relationship (cointegration) exists, F -statistic test indicates which variable should be normalized. This F -statistic is in a generalized Dickey-Fuller regression, which is used to test the significance of lagged levels of the variables in a conditional unrestricted equilibrium correction model (Pesaran *et al.*, 2001).

Having found a long-run relationship (cointegration), equations (1)-(3) are estimated using the following ARDL (p, q) model:

$$\ln gdp_t = \alpha_0 + \sum_{i=1}^p \alpha_1 \ln gdp_{t-i} + \sum_{i=0}^q \alpha_2 \ln fin_{t-i} + \omega_t \quad (4)$$

$$\ln fin_t = \alpha_0 + \sum_{i=1}^p \alpha_1 \ln fin_{t-i} + \sum_{i=0}^q \alpha_2 \ln gdp_{t-i} + \omega_t \quad (5)$$

$$gfcf_t = \alpha_0 + \sum_{i=1}^p \alpha_1 gfcf_{t-i} + \sum_{i=0}^q \alpha_2 \ln fin_{t-i} + \omega_t \quad (6)$$

The orders of the lags in the ARDL model are selected by the Akaike information criterion (AIC) and the Schwarz Bayesian criterion (SBC) before the selected model is estimated by ordinary least squares (OLS). After that, we reconfirm the lag by checking lag-length criteria and the correlogram of residuals from unrestricted VAR using the selected lag. Lag length which minimizes AIC-SBC and showed by the lag-length criteria as well as insignificant residual's correlogram probability of unrestricted VAR is selected. Narayan (2004) argues that the estimates obtained from the ARDL approach to cointegration are unbiased and efficient given the fact that:

- it can be applied to studies that have a small sample, such as the present study;
- it estimates the long-run and short-run components of the model simultaneously, removing problems associated with omitted variables and autocorrelation; and
- the ARDL method can distinguish between dependent and independent variables.

In the presence of cointegration for ARDL equations (1)-(3), short-run elasticity can also be derived by constructing an ECM of the following forms:

$$\Delta \ln gdp_t = \beta_0 + \sum_{i=1}^p \beta_1 \Delta \ln gdp_{t-i} + \sum_{i=0}^p \beta_2 \Delta \ln fin_{t-i} + \psi ECT_{t-1} + \vartheta_t \quad (7)$$

$$\Delta \ln fin_t = \beta_0 + \sum_{i=1}^p \beta_1 \Delta \ln fin_{t-i} + \sum_{i=0}^q \beta_2 \Delta \ln gdp_{t-i} + \psi ECT_{t-1} + \vartheta_t \quad (8)$$

$$\Delta gfcf_t = \beta_0 + \sum_{i=1}^p \beta_1 \Delta gfcf_{t-i} + \sum_{i=0}^p \beta_2 \Delta \ln fin_{t-i} + \psi ECT_{t-1} + \vartheta_t \quad (9)$$

where:

Δ : the first difference of the operator.
 β 's : coefficients relating to the short-run dynamics of the model's convergence to equilibrium.
 ψ : measures the speed of adjustment.

Error term with lagged parameter (ECT) is an adaptive parameter measuring the short-term dispersal from long-term equilibrium. In short-run, the variables may disperse from one to another which will cause system in equilibrium. Hence, the statistical significance of the coefficient associated with ECT provides us with evidence for an EC mechanism that drives the variables back to their long-term relationship.

III.3 Variance decomposition

Variance decomposition (VDC) serves as a tool for evaluating the dynamic interactions and strength of causal relations among variables in the system. The VDC indicates the percentages of a variable's forecast error variance attributable to its own innovations and innovations in other variables. Thus, from the VDC, we can measure the relative importance of Islamic financial development in accounting for fluctuation in growth and business activity variables.

IV. Results and discussion

Before testing the long-run relationship between Islamic banks' financing and the proposed variables, we run the Granger causality test among those variables and the result is reported in Table IV. From this test, we found an indication of "supply-leading" view between Islamic banks' financing and growth (GDP). However, as displayed in equations (1) and (2), we are still encouraged to run both direction of relationship between Islamic banks' financing and growth.

The next step is estimating the long-run relationship in equations (1)-(3). The combination of the smallest value of AIC-SBC, lag-length criteria technique and observation towards insignificant correlogram of residuals from unrestricted VAR are used to determine the optimal number of lags to be included in the model. The lag length chosen is 1 for all equations. The calculated *F*-statistic of Wald-test and the bound critical values suggested by Narayan (2004) are displayed in Table V. The calculated *F*-statistic for equations (1)-(3) are 4.01, 10.401 and 4.664, respectively. Equations (1) and (3) are higher than upper bound critical value at 10 percent (3.797) and 5 percent (4.663) using restricted intercept and do trend. While for equation (2), the calculated *F*-statistic is higher than upper bound critical value at 1 percent using restricted intercept and trend. The overall *F*-statistic shows that the null hypothesis of no cointegration between Islamic banks' financing and the two variables tested is rejected in various level of significant

Null hypothesis	<i>F</i> -statistic	Probability
LNGDP does not Granger Cause LNFN	0.549	0.4651
LNFN does not Granger Cause LNGDP	5.614	0.0255 **
GFCF does not Granger Cause LNFN	1.502	0.2313
LNFN does not Granger Cause GFCF	2.131	0.1563

Table IV.
Granger causality test

Note: Significant at: *10, **5 and ***1 percent levels

Equation	Lag	F-statistic	Sig. level (%)	Bound critical values ^a			
				Restricted intercept and no trend		Restricted intercept and trend	
				I (0)	I (1)	I (0)	I (1)
(1)	1	4.01	1	6.027	6.760	8.170	9.285
			5	4.090	4.663	5.395	6.350
			10	3.303	3.797	4.290	5.080
(2)	1	10.401	1	6.027	6.760	8.170	9.285
			5	4.090	4.663	5.395	6.350
			10	3.303	3.797	4.290	5.080
(3)	1	4.664	1	6.027	6.760	8.170	9.285
			5	4.090	4.663	5.395	6.350
			10	3.303	3.797	4.290	5.080

Table V.
F-statistic of
cointegration relationship
and bound critical values

Note: ^aBased on Narayan (2004), the number of regressor, k = 1

and therefore, there is evidence of the long-run relationship between Islamic financial development and economic performance of Indonesia.

The variable of Islamic financing appears to be significant in equations (1) and (3) and its sign is consistent in all equations. It is consistent because if Islamic financial development contributes significantly towards economic growth and business activity then the sign should be positive (Table VI). Positive relationship means the more developed the Islamic financial system, the better the growth of the economy. The financial system can thus support and sustain the leading sectors in the process of growth. However, we find evidence that economic growth also important for the development of Islamic financial system. Therefore, the relationship between Islamic financial development and growth appears to be bi-directional in Indonesia.

Given the results from the cointegration tests, ECM based causality test is conducted for all equations and the ECM results are presented in Table VII. The EC coefficients for all equations tested are significant and negatively correlated. This shows the evidence of causality in at least one direction. The overall EC coefficients indicate low rate of convergence to equilibrium. The positive significance of Islamic financial depth coefficients in equations (1) and (3) support the view that Islamic financial development could positively affect the economic growth and business activity. Later, from the ECM of equation (3), growth also positively affects the development of Islamic banking.

In order to satisfy the classical assumption of OLS model, a number of diagnostic tests to the ECM is applied. It is found that there is no evidence of serial correlation, heteroskedasticity and autoregressive conditional heteroskedasticity (ARCH) effect

	lngdp	Dependent variable gfcf	lnfin
Coefficient of lnfin	0.112 (2.83)***	15,270 (2.263)**	–
Coefficient of lngdp	–	–	0.254 (2.139)**

Note: Significant at: *10, **5 and ***1 percent levels

Table VI.
Long-run model

IMEFM
5,1

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	$\Delta \ln gdp$	$\Delta gfcf$	$\Delta \ln fin$
ECT_{t-1}	-0.184 (-2.816)***	-0.048 (-3.77)***	-0.160 (-3.77)***
Coefficient of $\Delta \ln fin$	0.331 (2.475)**	101,088.2 (2.59)**	-
Coefficient of $\Delta \ln gdp$	-	-	0.634 (2.475)**
Diagnostic tests			
F-serial LM	3.193*	0.0295	0.552
F-ARCH test	1.173	3.3027*	0.639
F-White Het.	2.179	1.0589	2.39
JB normal	1.740	0.7074	3.796

Table VII.

Error correction model

Note: Significant at: *10, **5 and ***1 percent levels

in the disturbances in 5 and 1 percent level of significance. The entire models also pass the Jarque-Bera normality test which suggests that errors are normally distributed (Table VII).

The result of VDC is displayed in Table VIII. From Table VIII, VDC substantiate the significant role played by Islamic financing depth in accounting for fluctuations in Indonesian economic growth and investment. After 2.5 years horizon, while the fraction of Islamic financing forecast error variance attributable to variations in growth is 2.33 percent, the fraction of income and investment forecast error variance attributable to variations in the Islamic financial deepening are 15.59 and 2.11 percent, respectively.

V. Conclusion

Many studies had been conducted to see the link and impact of financial development upon economic growth. In term of the role of financial deepening towards economic growth, studies had found that at least three direction appeared:

Horizon	Percentage of forecast variance explained by innovations in Islamic financing on		Percentage of forecast variance explained by innovations in growth on Islamic financial development
	Growth	Investment	
1	0.00000	0.00000	0.00000
2	0.63953	0.066498	0.104331
3	1.920608	0.204706	0.304226
4	3.634281	0.398234	0.563560
5	5.602195	0.6335	0.855894
6	7.685181	0.899342	1.162429
7	9.782373	1.186661	1.470201
8	11.82553	1.488097	1.770596
9	13.7719	1.797744	2.058161
10	15.59742	2.110904	2.329707

Table VIII.

Variance decomposition

-
- (1) finance drives growth or “supply-leading” view;
 - (2) growth drives finance or “demand-following” view; and
 - (3) bi-directional.

However, despite the extensive studies done in direct relationship between financial deepening and economic growth within the conventional financing framework, studies conducted within the Islamic financial framework are limited.

This paper finds evidence that in the long-run, Islamic financial development is positively and significantly correlated with economic growth and capital accumulation. In this regard, domestic financing provided by Islamic banking sector has been found to contribute to the growth of the Indonesian economy. In other words, Islamic banking has shown to be effective as financial intermediaries that facilitate the transmission of funds from surplus households to deficit households. However, unlike earlier studies, the relationship between Islamic financing and growth in Indonesia is bi-directional indicating the development in Islamic banking stimulates growth and at the same time, growth propels Islamic banking development in Indonesia.

This interesting finding provides a number of implications. First, the Indonesian Government should continue to promote Islamic banking as it has shown to benefit the economy. This can be done by setting a target ratio of Islamic banking assets to total banking assets to be achieved by a certain year as was done in Malaysia. Currently the ratio is 2.8 percent and it should be set at a reasonably high percentage in order to make Islamic banking more impactful to the economy. As a corollary to this, the government needs to encourage and promote the establishment of more Islamic commercial banks, Islamic windows, and Islamic rural banks whilst at the same time encourage existing Islamic banks to establish more branches. In addition, allowing foreign Islamic banks to operate in Indonesia can also help to foster more innovation in the domestic Islamic banking industry. Second, as the number of Islamic banks and Islamic financial institutions increases, there is also a need to have sufficient skill manpower to manage these institutions. The country also needs competent Shariah personnel and advisers apart from trained Islamic bankers. In this regard, more universities and specialized training institutes will be required to produce the required manpower.

Although Islamic banking in Indonesia started 17 years ago, regulation to support it has not shown a corresponding growth. There is a need to relook at the current regulations and guidelines in order to bring it at par with the development of Islamic banking worldwide. For example, the judiciary must have a dedicated unit to handle Islamic banking legal cases should it go to the court for adjudication. Finally, as the relationship is found to be bi-directional, Islamic banking will not be able to contribute fully to economic growth if the economy is not growing well, hence a positive economic growth will help spur Islamic banking growth further.

VI. Limitations and direction for future research

This paper has at least two limitations. First, this study is only for Indonesian experience and second, it adopts direct method of relationship without involving other variable in the equations.

In order to improve this study in the future, following are some directions for further researches:

- combining some countries which have implemented Islamic financial system for a reasonable time so that adequate number of data can be collected;
- use different method of analysis in order to find the robustness of the results; and
- comparative analysis towards countries with fully Islamic financial system and dual-banking system to find the consistency of the results.

Notes

1. www.thestreet.com/story/10863639/islamic-banks-attract-more-global-clients.html (accessed 18 September 2010).
2. For detail discussion on this please read *The Blueprint of Islamic Banking Development in Indonesia* by Bank Indonesia (2002).

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