



# Dynamism of Islamic Financing on Economic Growth

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**Abstract:** Islamic finance is getting much attention in the flourishing sector of banking industry due to its characteristics and prominence. Now Islamic financial industry has reached to more than \$1 trillion US dollar and is growing about 20 percent annually. Its growth is not restricted to the Muslim societies but Islamic financial products are also gaining popularity among non-Muslim countries. This paper explores empirically the dynamic relationship between the development of Islamic banking and economic growth in a sample of low and middle income countries. The results show that, notwithstanding its relatively small size compared to the economy and the overall size of the financial system, Islamic banking is positively associated with economic growth even after controlling various variables, including the variable of level of financial depth. The results are robust across different specifications, sample composition and time periods. It implies that the development of Islamic banking is one of the policies, which should be considered by the government to improve their economic growth.

**Keywords:** Islamic Financing, Economic Growth, Panel Data, Low Income Countries, Middle Income Countries.

**JEL Codes:** G0, G21, O10

## Introduction

Islamic financing abides by Shariah principles in all of its activities through an Islamic intermediary between savers and investors, provides banking services within the framework of legitimate contracts; and achieves a balance between economic and social return. The beginning of Islamic financing in form of banks, in its wider sense, dates back to the early days of Islam and the rise of the Islamic countries. The boom in internal and external trade in the dawn of Islam led to the creation of Islamic financial tools such as deposits, money transfers, checks, bills of exchange, and so forth to cope with these commercial developments. Later, the Europeans adopted these Muslim practices and continued to evolve them up until modern days. In Islamic countries, Islamic financial practices withered gradually

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due to the weakening of the Islamic empire, until these practices were replaced by the Western financial model in the early 20th century. However, Islamic financial practices emerged again in the middle of the same century. Islamic banking and finance is a creation of the modern age. Capitalism argues, capital is one of the key factors of production, deserves a fixed return, whereas the entrepreneurs have to bear all the risks. The conflict of opinions with Islamic values starts from this very basic point. As the conventional banking systems follows the philosophy of capitalism and interest which is forbidden according to the Islamic Shariah, Muslims made the first move towards an Islamic financial system in the second half of 20th century when the Muslim world was liberated from colonial powers (Hanif, 2011). The Conference of Foreign Ministers of Muslim countries (1973) can be marked as a landmark moment for the growth and popularity of Islamic Financial Institutions (IFIs). In 1974, the finance ministers of all Islamic countries held a convention on the establishment of the Islamic Development Bank (IDB). The IDB was considered to be the first international Islamic bank that was established by members of the Organization of Islamic Countries (OIC). The bank began operating in 1977, and since then it has played a pivotal role in the development of the Islamic banking and finance industry. The purpose of the bank is to foster economic development and social progress among member countries and Muslim communities individually as well as jointly in accordance with the principles of Shariah. As of June 1992, the bank's paid-up capital was two billion Islamic dinars (an IDB accounting unit that is equivalent to one special drawing right of the International Monetary Fund). From July 1992 to December 2000, the bank increased its capital to six billion Islamic dinars. In 2001 the bank increased its capital from six billion to 15 billion Islamic dinars (USD 20.55 billion).

During this phase, the number of Islamic banks around the world increased, and many of the banks which were established in the early 1970s and 1980s are still in operation today (Abdeen & Shook, 1984, p. 167). Many conventional banks have established Islamic windows, and still other conventional banks have fully converted to Islamic banking. Furthermore, several Islamic bodies were established to regulate and promote the Islamic finance industry. Finally, Iran and Sudan Islamized their entire financial systems.

In the last few decades the Islamic banking has developed very rapidly in many different economies and has been established in these economies as one of the most influential alternatives to the conventional banking system which is based on interest transactions (Ahmad & Haron, 2002). The major reason for people to

look for the banking alternatives is that the conventional system has some problems and may suddenly cause instability to the economy at some point in time. The financial crisis that started in the United States in early 2008 and continued till 2010 has prompted Islamic banking proponents to re-assert their claim that Islamic banking is superior to conventional banking as it is not prone to economic depression (Loo, 2010). The most basic flaw attached to interest based banking is that the crisis is embedded in the conventional banking system and as long as the economies are dependent on the conventional banking system especially its interest based banking then the economies may delve into an even bigger crisis at some point in time (Almossawi, 2001). However, the Islamic banking that is based on Shariah laws that prohibits interest in the transactions will not depend on interest and will not cause the probable crisis in the economy.

With this issue, many conventional banks started to offer Islamic banking services to capture the demands and needs of Muslim as well as Non-Muslim customers. The consequence of this is that Islamic banks operating in Islamic countries are faced with strong competition not only from Islamic banks but also from non-conventional rivals (Naser & Moutinho, 1997).

A well developed financial sector helps to mobilize savings, facilitate the allocation of capital where returns are expected to be highest, it also helps to monitor the use of capital once invested, and allows for diversification of risk. However, as Islamic banking becomes more acceptable to a large swath of the population, it could expand faster, as it would not necessarily be a substitute for conventional banking, but it would provide financial products to a part of the population that otherwise would not use the financial system, potentially leading to higher financial inclusion and an acceleration of economic growth in these countries. This paper aims to clarify whether Islamic banking is effective in raising growth and intends to establish an empirical relationship between Islamic banking and economic growth in a sample of many low and middle income countries. The results of this research will help decision makers and finance scholars to understand the advantages of Islamic finance for enhancing economic growth in any country and to develop sound policies.

The layout of this paper is organized as; section one gives a general introduction, section two presents the overview of historical development of Islamic finance in different regions of world. Section three includes the literature review, section four illustrates the methodology, data sources and section five presents an estimation of the research. Section six gives the conclusion of the study.

## Historical Development of Islamic Banks

The notion of the origin of traditional banks can be found if we study the financial history of the world. Actually traditional banking operations were practiced by most of the well-known early civilizations long before 12th century AD in Italy (Chachi, 2005). On the other hand, the Islamic banking system originated and was practiced on a scale which surpassed anything known before. Banking operations had been practiced in earlier civilizations such as the Islamic, Roman, Greek, Egyptian, the Babylonian and the Sumerian civilizations. According to Chachi (2005), there is available historical evidence on the practice of banking and finance which dates back as early as 34 century BC (i.e. 5,400 year ago). History shows that a very advanced banking system was carried out by the religious temples, which took deposits and gave loan to needy people and operated just like a banking system.

According to Chachi (2005), the origin of Islamic finance dates back to the dawn of Islam 1,400 years ago. Historical books written during the early years of Islam indicated that during the 1<sup>st</sup> century of Islam (AD 600), some forms of banking activities existed that were similar to modern banking transactions. Furthermore, these ancient books revealed that Al-Zubair bin Al-Awam, one of the most famous characters in Islam, was accepting deposits from people as loans and investing that money. At the time of his death, his debt had reached 2,200,000 dinar, as counted by his son Abdullah. Also, he had several branches in different parts of the Islamic Empire to return deposits to their owners. Furthermore, there were bankers called *sarraffeen* or *sayarifah* (singular *sarraf*) or *jahabidhah* (banks called *dawawin al-jahabidhah*) in the Islamic Empire. During the Abbasid-caliphs period (from the 8th century) the term *sarraffeen* was used to refer to financial clerks, experts in matters of coins, skilled money examiners, treasury receivers, government cashiers, money changers, or collectors to designate the well-known, licensed merchant bankers in those times. In addition, the first cheque in history was drawn by a *sarraf* in Baghdad in the 4th century AH (10th century AD), and it was cashed by the prince of Aleppo, Saif Al-Dawla. Indeed, the historical records indicate that there were banks in those days. The *suftaja* always and the *hawala* usually occurred as a written obligation, and were thus the first and most important forms of commercial credit papers in the Medieval Near East. Beginning with the decline of the Islamic Empire from about the 12th Century BC, the rule of the *sarraffeen* began to weaken. Their loss of power within society can be attributed to several internal and external factors. This allowed Western influence to increase throughout Islamic countries, especially through colonization. Under European influence, many Islamic countries began to adopt a Western banking model in the 19th century. This started by

opening branches of foreign banks or by establishing banks within countries. For instance, in Egypt, the first conventional bank opened its doors in 1856 under the name Bank of Egypt. This bank was a branch of an English bank but was closed in 1911. The National Bank of Egypt was established in 1898 by Ralph Suarez and Constantine Salvages (Jewish businessmen) with an English partner; the bank is still in operation today (Nasser, 1996).

Now there is a brief description of the development of the Islamic banking industry in the Asian-Pacific region, Africa, the Middle East and Turkey region, and North America. The Asian-Pacific region has established itself as a strong hold for Islamic finance. The industry is growing rapidly in many parts of this region, and this growth has been supported by a Muslim population that now makes up 62% of the region's total population. Even some of the Asian-Pacific nations with small Muslim populations, such as Australia and Singapore, have begun to engage in Islamic finance. The early efforts to establish an Islamic financing institution not in the region but in the world began in this area, specifically in southern India. However, laws in India did not allow the Islamic financial industry to flourish, and the institutions there remained small and did not satisfy the needs of Indian Muslims. However, the opposite took place in Pakistan; it started to Islamize its financial system in the late 1970s and Islamic financial industry in the country began to boom. Going to Malaysia which is considered a hub of the Islamic finance industry, the first Islamic financial institute in the country was Tabugn Haji (August 1962) a pioneering effort to give Muslims the opportunity to invest their money in interest-free bank accounts. Currently, Islamic financial institutions operate alongside conventional financial institutions in the country, but the country has separate legislation and regulations for each. Indonesia engaged in the Islamic finance industry in 1992, laws were issued to promote the Islamic finance industry and ever since then the industry has been flourishing.

In another Asian country, Bangladesh, the Islamic Economics Research Bureau, the Bangladesh Islamic Bankers Association (BIBA) and the Muslim Businessman Society (MBS) played a pivotal role in implementing Islamic banking in the country. The government also supported the movement toward Islamic banking. The first Islamic bank in the country Islamic Bank Bangladesh was inaugurated on March 14, 1983. Regarding other non-Islamic countries in the region such as Maldives, Philippines, Sri Lanka, Singapore, and Thailand all have Islamic financial institutions operating and have issued laws governing the Islamic financial industry to allow it to operate efficiently.

## Literature Review

Different literature reviews show that there are many factors that influence customers to use Islamic banking services such as products and services, reliability, availability of enough outlets throughout the country for Muslims and so forth. However, for non-Muslims products and services are the most important factors; other important factors to them are reliability, availability of outlets and religion. Hence, some Islamic scholars say that it is not the Islamic branding only that influences customers to obtain Islamic banking services. From the data analysis it has been found that the non-Muslims take Islamic services not only due to Islamic branding but some other factors such as perception of services, convenience of services, ethical organization etc.

A significant level of development has been observed in Islamic banking research over the last decade. The western analysts and economists have demonstrated their emphasis on the interest-free business transactions. These western economists discovered the connection between the interest rates and some key macroeconomic instabilities like- unemployment, inflation or negative growth (Fisher, 1933; Greenwald & Stiglitz, 1988; Hayek, 1933; Minsky, 1977; Smith, 1904; Wicksell, 1935).

In different parts of the world, Islamic banking research has been mostly conducted by Muslims and only a small portion by non Muslims. The works of Erol and El-Bdour (1989) and Erol et al. (1990) revealed three key selection criteria for Islamic banks: fast and efficient services, reputation and confidentiality. According to their findings, religious motivation was not a prime criterion. On the contrary, Metawa and Almosawi (1998) and Naser et al. (1999) found loyalty to Islamic belief the primary criterion for selecting Islamic banks in countries like Bahrain and Jordan.

Similarly, some other scholars discovered the same findings in their studies for Indonesia, Kuwait and Malaysia (Kader 1993, 1995; Othman & Owen, 2001, 2002). A study on a large number of respondents carried out by Dusuki and Abdullah (2006) discovered that Islamic bankers should not only rely on promoting the Islamic factors but also the service quality. The three most important factors found in their study were competence, friendliness and customer service quality.

Hassan (2006) investigated the relative efficiency of the Islamic banking industry in world by evaluating a panel of banks covering the period of 1995-2001. The nonparametric (data envelopment analysis) and parametric (cost and profit efficiency) techniques were applied to determine the efficiency of Islamic banks.

Five efficiency measures such as cost, allocative, technical, pure technical and scale efficiency scores were calculated and then correlated with conventional accounting measures of performance. The results of study indicated that the Islamic banking industry is relatively less efficient compared to their conventional banking in other parts of the world. The results also highlight that these efficiency measures can be used concurrently with conventional accounting ratios in determining Islamic bank performance.

Khan, et al. (2008) studied the banking behavior of Islamic bank customers in Bangladesh. The primary data of hundred customers was collected for a comprehensive analysis and a number of key findings pertaining to the behavior of Islamic bank customers in Bangladesh were found. It was observed that Islamic bank customers who fall the age category of 25-35 years and are highly educated form loyal relationships with their banks. Second, high customer awareness and usage exist for various deposit mobilization instruments but there is not high awareness and usage of any individual financing facilities of Islamic banks. Third, the income category and education have a significant role in customers' usage of various Islamic bank products/services. Fourth, customers seem to be satisfied with a number of products/services of Islamic banks. Fifth, among the service delivery elements, 'employees' deserve immediate recognition for improving customer satisfaction. Finally, 'religious principles' is the key bank selection criterion of Islamic bank customers, while the customers' demography plays some role in determining which selection criteria matters more than others.

Ahmad and Harun (2002) conducted a study to examine the perceptions of corporate customers towards Islamic banking in Malaysia. They examined factors such as the usage of banking facilities, respondents' understanding of Islamic banking concepts and practices, and personal opinions towards Islamic banking. They found that the cost of the products and services is the most important factor perceived by corporate customers in selecting their banks. Similarly, Rustam et al. (2011) discussed three main parameters to determine the perception of corporate customers towards Islamic banking in Pakistan. They examined factors such as the usage of conventional and Islamic banking facilities, respondents' understanding of the Islamic banking system and their personal opinion on various aspects of Islamic banking products like economic and religious views. They found that the Islamic banking industry has a good potential within the Pakistani corporate sector.

There is no secondary market for Islamic fixed-income products, forcing Islamic banks to have large liquidity buffers, putting them at a disadvantage relative to conventional banks (Moody's, 2009). This is because Islamic banks are prohibited

from engaging in activities that include interest, but the way central banks function is through a repo that includes interest bearing assets. The establishment in 2010 of the “International Islamic Liquidity Management Corporation” (IILM), whose objective is to issue Shariah-compliant financial instruments that facilitate more efficient and effective liquidity management solutions for institutions offering Islamic financial services should help address this problem. However, this is still a work in progress.

Beck et al. (2010) found few significant differences in business orientation, efficiency, asset quality, or stability. While Islamic banks seem more cost-effective than conventional banks in a broad cross-country sample, this finding reveals the reverse in a sample of countries with both Islamic and conventional banks. However, conventional banks that operate in countries with a higher market share of Islamic banks are more cost-effective but less stable.

Hanif and Iqbal (2010) categorized Islamic modes of financing objectively in two heads; Sharia compliant and Sharia based. Later, Hanif (2011) discussed these terms used for modes of financing briefly. He explained Sharia compliant products as the modes of financing where return of financier is predetermined and fixed but within Sharia constraints. The tools which are relatively harmonizing the operations of Islamic finance with conventional banking include Murabaha (cost plus profit sale), Ijara (a rental arrangement), Bai Salam (spot payment for future delivery), Bai Muajjal (sale on deferred payment), Istasna (order to manufacture) and Diminishing Musharaka (house financing). These are all Sharia compliant products. Sharia based transactions means the financing modes adopted by IFIs on a profit and loss sharing basis including Musharaka (partnership in capital) and Mudaraba (partnership of capital and skill). Under Sharia based modes of financing the returns of the financier are not fixed in advance rather they depend on the outcome of the project. Whereas loss is to be shared according to the capital contribution. Following the rule of substance over form one can conclude that the major difference between conventional and Islamic financing is Sharia based modes of financing.

Mahal and Rahman (2013) made a comparative analysis between conventional and Islamic banks of Bangladesh. They discussed the distinctions of product or service and the distinctions in terms of business efficiency between Islamic Banks and Conventional Banks. Their key findings on the product or service differences are about the principles of business, variation in goals, variations in deposit etc.

Thus, Islamic banks have features that can promote growth, but at the same time are disadvantaged by the lack of economies of scale and liquid instruments—though work is ongoing to address these shortcomings. This suggests that the an-

swer to the question as to whether Islamic banking promotes growth lies in the empirical evidence. While there is no consensus of empirical studies on the impact of Islamic financial development on growth, a void this paper attempts to fill. There are hardly any studies that explore the above mentioned relationship using huge samples of countries with such variables.

## Methodology

### ***The Data and Model***

In this section, it is empirically attempted to assess the impact of Islamic banking on growth constructing a panel of 63 developing economies, with data spanning the period of 1990-2010, and averaged over 3-year intervals. The sample size is constrained by data availability, in particular on variables capturing Islamic banking expansion and the quality of the institutional environment. In addition, the sample is restricted to low and middle income countries as the macroeconomic variables included in the growth model are more relevant to them, and also because this helps reduce sample heterogeneity. With regard to the length of the time period, the 3-year average represents a good balance between the need to smooth business cycle fluctuations and that of ensuring an adequate number of observations for the regressions.

This study relies on a standard growth model, with a set of variables of interest measuring broad financial development and Islamic banking development, and control variables conventionally utilized in the growth literature. The data sources for the variables are World Development Indicators, World Bank Governance Indicators, Bank scope Database, Global Development Finance, International Country Risk Guide, Islamic Banks and Financial Institutions Information. The variables of interest consist of:

*Development of Islamic banking:* Islamic banking development is measured by the amount of loans extended by these banks to the private sector divided by nominal GDP. While this indicator gives an idea of the size of the Islamic banking sector, it may not accurately measure the indirect channels through which Islamic banks could ignite growth (facilitate risk sharing, enhance financial stability, and mobilize savings). Two alternative indicators of Islamic banking development are also used: the ratio of Islamic banking assets to GDP and the ratio of deposits in Islamic banks to GDP, the latter being a useful indicator to gauge the ability of Islamic banks to mobilize savings.

*Development of the overall banking system:* There is a general acceptance in the economic literature that financial deepening stimulates growth. As a result, this study includes in the model the ratio of private sector credit by commercial banks in percent of GDP as a measure of the development of the banking sector. Since both conventional and Islamic banking coexist in many countries and evolve together, it is important to control growth for the overall size of the banking system in order to properly isolate the growth impact of Islamic banking. Alternative measures of financial development considered include the ratio of private sector credit by bank and nonbank financial institutions in percent of GDP, the total assets of financial institutions as a ratio of GDP and finally the total financial system deposits as a ratio to GDP.

The control variables include: Real GDP per capita, Inflation and Quality of Institutions.

*Initial real GDP per capita:* This variable is intended to control for growth convergence as the neoclassical model points out that lower income countries, with lower initial levels of technology and capital, will tend to grow faster than more advanced countries.

*Inflation:* It has long been argued that inflation uncertainty lowers real output growth. Inflation uncertainty increases the variability of prices, which distorts the price signals and thereby harms economic efficiency and productivity. In addition, high inflation is likely to be associated with weaker growth as it is often a reflection of low quality and unsustainable macroeconomic policies.

*Quality of Institutions:* Institutional quality matters for long-term growth, as it determines the incentives of and the constraints on economic actors, fosters better policy choices, and shapes economic outcomes (Acemoglu, Johnson & Robinson, 2004). However, measuring accurately institutional development remains a challenge. While, no perfect or comprehensive indicator exists, we opted for the indicator of the rule of law as a proxy for the quality of institutions, as compiled by the International Risk Country Guide (ICRG), which is widely used in the literature.

The baseline regression looks as follows:

$$G_{it} = \alpha + \beta IB_{it} + \gamma FD_{it} + \delta X_{it} + u_i + \varepsilon_{it} + v_t$$

where: G is the growth rate of real GDP per capita; IB is the indicator of Islamic banking development (ratio of loans, assets, or deposits in Islamic banks to GDP); FD is the measure of overall financial development (ratio of private sector credit by commercial banks to GDP); X is the set of control variables described above; u is the country-specific effect,  $\varepsilon$  the error term and v is the time-specific effect.

### **Estimation**

Estimating the growth impact of Islamic banking poses several econometric challenges. First, while Islamic banking is fast growing, the size of Islamic banking development in relation to GDP or banking assets is often zero, or very small in the majority of countries, including Islamic ones. This makes it challenging to identify any statistically significant impact. Secondly, like conventional banking, there may be a reverse causality from growth to Islamic finance, raising an endogeneity issue that needs to be addressed in the regressions. Thirdly, the indicators of Islamic bank development are subject to measurement errors as only pure Islamic banks are covered by statistics while Islamic windows (of conventional banks) are not included, due to lack of data. This is because conventional banks often do not separate in their balance sheets and financial reports activities related to Islamic finance from those of conventional banking. The underestimation of Islamic banking development would lead to a downward bias of the estimated coefficient.

In light of the challenges outlined above, many econometric techniques are used which include pooling and fixed effects estimator to control country-specific effects, and the System GMM estimator to control endogeneity bias.

## **Main Results**

### ***Pooling and Fixed-Effects***

Table 1 presents the results from the estimations using a pooling and fixed-effect estimator. The pooling estimator runs ordinary least squares (OLS) with the panel data, without regard to which countries they belong. Unlike the pooling estimator, a fixed-effect estimator allows to control for unobservable country-specific effects invariant over time, and which affect a country's economic growth. The results from the pooling estimation are presented in columns 1 to 6, while those of the fixed-effect estimator are shown in columns 7 to 12. For each series of regressions, the first specification runs the baseline model only with the control variables (columns 1 and 7), while the second specification controls for overall financial development (columns 2 and 8). Subsequent specifications (column 3 to 6, 9 to 12) add in turn the 3 indicators of Islamic banking development.

**Table 1**

Growth and Islamic Banking		Fixed Effects											
		Pooling Effects											
Variables	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	
Constant	-0.021 (0.028)	0.041 (0.029)	0.052 (0.023)	0.041 (0.025)	0.051 (0.025)	0.054 (0.025)	0.165 (0.301)	0.482 (0.322)	0.583 (0.301)	0.611 (0.322)	0.622 (0.318)	0.681 (0.322)	
GDP per capita	-0.011 (0.00)	-0.023 (0.06)*	-0.031 (0.06)**	-0.044 (0.00)**	-0.042 (0.06)**	-0.041 (0.06)**	-0.031 (0.03)	-0.014 (0.02)***	-0.111 (0.03)***	-0.102 (0.01)***	-0.114 (0.03)***	-0.113 (0.03)***	
Inflation	-0.072 (0.01)***	-0.061 (0.01)**	-0.061 (0.02)	-0.073 (0.02)**	-0.073 (0.07)***	-0.069 (-0.01)**	-0.078 (0.07)**	-0.079 (0.08)***	-0.089 (0.07)***	-0.078 (0.08)**	-0.080 (0.07)**	-0.079 (0.08)***	
Quality of Institutions	0.026 (0.04)***	0.021 (0.04)***	0.020 (0.04)***	0.021 (0.04)***	0.022 (0.04)***	0.021 (0.04)***	0.012 (0.06)**	0.071 (0.05)*	0.082 (0.06)	0.073 (0.06)	0.081 (0.05)	0.072 (0.06)	
Financial Development	0.002 (0.00)***	0.002 (0.00)***	0.002 (0.00)***	0.002 (0.00)***	0.002 (0.00)***	0.002 (0.00)***	0.001 (0.00)**	0.001 (0.00)**	0.002 (0.00)*	0.001 (0.00)***	0.001 (0.00)**	0.001 (0.00)***	
Loans by Islamic Banks/ GDP			0.783 (0.366)**						4.369 (3.261)**				
Deposits of Islamic Banks/ GDP					1.278 (0.324)**						0.724 (0.336)***		
Assets of Islamic Banks/ GDP				0.573 (0.231)***						0.622 (0.352)**			
Observations	253	234	263	263	263	263	284	263	263	263	263	263	
Number of Countries	63	50	50	50	50	50	63	50	50	50	50	50	
Adjusted R <sup>2</sup>	0.33	0.32	0.32	0.33	0.33	0.33	0.31	0.35	0.35	0.37	0.34	0.35	

Note: Robust standard errors in brackets; \* significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%.

The findings confirm the well-known result found in economic literature that financial deepening matters for the economic growth of these countries. The coefficient is positive and significant in all specifications at least at the 5 percent significance level. More interestingly, for a given level of financial development, Islamic banking is found to stimulate growth. The coefficients for all the indicators of Islamic banking development, including the composite index, are positive and enter the regressions in a statistically significant way, confirming the theoretical predictions, despite the fact that Islamic banking is small compared to GDP. This result suggests that Islamic banking responds to the specific needs of households and firms, which would have been otherwise unmet and the associated incremental growth would have been forgone. This result also provides evidence that Islamic banking does not appear to crowd out traditional finance—it complements, rather than substitutes for conventional banking—as for a given level of financial development, more Islamic banking raises economic growth.

Regarding the control variables, countries with sound macro-economic policies, characterized by low inflation and subdued government current spending, tend to grow faster. This also seems to be the case for countries with good institutional quality. Further, the hypothesis of economic convergence is supported by the negative and significant sign of the variable initial GDP per capita. Overall, the model helps explain 32 to 37 percent of the variability in economic growth rates.

Although the pooling and fixed effect estimators provide interesting results, the coefficients may be biased in the presence of the endogeneity of the right-hand side variables, particularly with regard to the financial sector indicators. This is especially relevant for Islamic banking indicators, as their potential endogeneity does not only result from the reverse causality to growth, but also from measurement errors when the full size of Islamic banking development is not captured in the data.

### **System-GMM**

To address the endogeneity issue, not only for the banking indicators, but also for some other explanatory variables, this study relies on the System-GMM estimator (dynamic panel Generalized Method-of-Moment) developed by Blundell and Bond (1998). They show that the System-GMM estimator, which simultaneously uses both the difference in the panel data and the data from the original levels specification, produces dramatic increases in both consistency and efficiency relative to the first-differenced GMM developed by Arellano and Bond (1991). The one-step System GMM estimator is used while controlling sample heterogeneity. Further, to minimize over-fitting of the model, careful attention is paid to the selection of the instruments. For variables considered as predetermined or endogenous, only the first relevant lag is used. To test the validity of the lagged variables as instruments, the standard Hansen test of over-identifying restrictions is used, where the null

hypothesis is that the instrumental variables are not correlated with the residual, and the serial correlation test, where the null hypothesis is that the errors exhibit no second-order serial correlation.

The results from the System GMM estimator presented in table 2 are comparable to those from the fixed-effect estimator.

**Table 2**  
Islamic Banking and Growth: Dynamic Panel System GMM estimations

	(1)	(2)	(3)	(4)	(5)	(6)
Constant	0.021 (0.061)	0.172 (0.051)***	0.172 (0.531)***	0.132 (0.049)**	0.217 (0.048)*	0.271 (0.042)**
Initial GDP/capita	0.124 (0.013)***	-0.010 (0.022)***	-0.013 (0.022)***	-0.016 (0.022)***	-0.012 (0.022)***	-0.016 (0.022)***
Inflation	-0.142 (0.111)**	-0.152 (0.101)*	-0.171 (0.181)*	-0.192 (0.141)**	-0.163 (0.192)*	-0.194 (0.152)**
Quality of Institutions	0.018 (0.004)***	0.016 (0.002)**	0.019 (0.001)***	0.017 (0.003)**	0.019 (0.003)***	0.018 (0.005)***
Financial Development		0.001 (0.000)***	0.001 (0.000)***	0.001 (0.000)***	0.001 (0.000)***	0.001 (0.000)***
Loans by Islamic Banks/GDP			1.253 (0.482)***			
Assets of Islamic Banks/GDP				0.849 (0.438)***		
Deposits of Islamic Banks/GDP					1.520 (0.492)**	
Observations	284	263	263	263	263	263
No of Countries	63	50	50	50	50	50
AR2 test prob.	0.42	0.80	0.78	0.78	0.73	0.71
Hansen test prob.	0.06	0.42	0.59	0.64	0.67	0.72

Note: Robust standard errors in brackets; \* significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%.

AR (2): Arellano and Bond test of second order autocorrelation.

Once again, both overall financial system development and Islamic banking development appear to have a meaningful positive impact on economic growth. This evidence highlights the importance of Islamic banking for the economic growth of these economies. Growth promoting Islamic banking should be the focus of these

countries for their advancement and their prosperity. On the other hand, institutional quality is often ignored for the advancement of economic activities. The high institutional quality is a leading indicator to attract the investors which is a fruitful source for enhancing the economic growth and development. The coefficients on financial variables should be interpreted with caution, given the relatively small size of Islamic banking compared to the overall financial development, which makes them not directly comparable. One way to make the coefficients more informative is by taking into account the scale effect while estimating the coefficients for the standardized financial variables. It is also shown that inflation in these countries is harming their economic growth so there is a need to bring the inflation level at a threshold level of countries which may be determined from other scientific studies.

**Table 3**

Islamic Banking and Growth: Dynamic Panel System GMM estimations with Standardized Coefficients for the Financial Variables

	(1)	(2)	(3)	(4)
Constant	0.231 (0.052)***	0.152 (0.053)***	0.142 (0.048)***	0.163 (0.52)**
Initial GDP/capita	-0.015 (0.012)***	-0.013 (0.012)***	-0.012 (0.012)***	-0.016 (0.012)***
Inflation	-0.231 (0.101)*	-0.221 (0.111)*	-0.172 (0.121)**	-0.169 (0.079)*
Quality of Institutions	0.018 (0.005)**	0.017 (0.006)***	0.017 (0.006)***	0.017 (0.005)***
<b>Standardized Coefficients</b>				
Financial Development	0.037 (0.008)***	0.031 (0.007)***	0.031 (0.008)***	0.033 (0.007)
Loans by Islamic Banks/GDP	0.004 (0.001)***			
Assets of Islamic Banks/GDP		0.007 (0.002)***		
Deposits of Islamic Banks/GDP			0.007 (0.002)**	
Observations	263	263	263	263
No of Countries	50	50	50	50
AR2 test prob.	0.80	0.78	0.78	0.73
Hansen test prob.	0.42	0.59	0.64	0.67

Note: Robust standard errors in brackets; \* significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%.

AR (2): Arellano and Bond test of second order autocorrelation

The results suggest that a one standard deviation increase in the financial development would lead to about 3.7 percent increase in real GDP per capita growth. For a one standard deviation increase in the ratio of loans by Islamic banks to GDP, the impact on growth would be of 0.4 percent compared to about 0.7 percent for the ratios of assets and deposits of Islamic banks to GDP. However, even with the standardized variables, the regressions do not allow for reliable inference on the magnitude of the growth impact of Islamic banking, although they provide strong evidence on the positive effect of Islamic banking on growth. It can be suggested that to enhance the economic growth of these countries, Islamic banking may be promoted by highlighting the effectiveness of such type of banking and also meeting the modern requirements of the banking sector. Moreover, the institutional quality also plays an important role for the prosperity of these economies. It is a much less concentrated area for considerations of economic fruits. There is a dire need to improve the institutional quality for economic development and growth along with Islamic banking. From that perspective, the fixed effects and GMM System results are quite encouraging, especially considering that a significant number of countries in the sample are reported as not having Islamic banking activities (although they might have banks with Islamic finance windows), while in countries where Islamic banks are present, their relative importance in the economy or the banking system is still far from being significant.

## Conclusion

The objective of this paper was to assess the impact of Islamic banking on economic growth. This study comprehensively assesses this question using different empirical techniques. It is found that, by holding constant the level of financial development and other growth determinants, countries where Islamic banking is present and hence its impact on growth is measurable, experience faster economic growth than others. This is a powerful result, and robust to various specifications: by using different measures of Islamic banking development, econometric estimators (pooling, fixed effects and System GMM), and control for country and time-specific dummies. This finding is also encouraging as, despite its rapid growth, Islamic banking still represents a relatively small share of the economy and of the overall size of the financial system, and it has yet to reap the benefits from economies of scale. Although this study does not suggest that Islamic banking provides more “bang for the buck” compared to conventional banks; it does, however, establish a positive impact on growth. As indicated, there are uncertainties about the magnitude of the growth effect of Islamic banking, which call for further research as

Islamic banks diffuse further and become larger. Should future studies confirm this finding, the policy implications would be significant.

As the global crisis has illustrated, conventional banking has many weaknesses—its excessive dependence on leverage being one of them. However, Islamic banking, which is one of the fastest growing segments of global finance, has unique features that are highly appropriate for developing countries. In particular, it is based on risk-sharing, making its activities more closely related to the real economy than conventional finance; it is also more flexible against shocks and more inclusive with regards to growth. Not only does Islamic finance help to stimulate growth, but it also appears less prone to risks such as bubbles (Dridi and Maher, 2010).

This means that many countries that currently suffer from low growth—a feature often present in Muslim countries—may want to further develop this segment of finance. As an initial step, it is essential to develop proper legislation and regulation, as well as the supporting infrastructure, including the necessary skill set. Future areas of research include better measuring of Islamic banking development and assessing the impact of Islamic banking on inequality and social development.

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## Appendix

### Country Sample

Algeria	Guinea	Nigeria
Angola	Guinea-Bissau	Oman
Armenia	India	Papua New Guinea
Azerbaijan	Indonesia	Philippines
Bahrain	Islamic Republic of Iran	Qatar
Bangladesh	Islamic Republic of Pa-	Saudi Arabia
Bhutan	kistan	Senegal
Bolivia	Jordan	South Africa
Botswana	Kenya	Sri Lanka
Bulgaria	Lebanon	Sudan
Burkina Faso	Liberia	Syrian Arab Republic
Cameroon	Libya	Tanzania
China	Madagascar	Thailand
Colombia	Malawi	Togo
Congo	Malaysia	Tunisia
Côte d'Ivoire	Mali	Turkey
Egypt Arab Republic	Mongolia	Uganda
Ethiopia	Morocco	United Arab Emirates
Gabon	Mozambique	Vietnam
Gambia, The	Namibia	Yemen, Republic
Ghana	Niger	Zambia
		Zimbabwe