



Do Islamic Banks Contribute to Economic Growth? Evidence from the GCC Countries

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ABSTRACT

The purpose of this study is to examine the existing relationship between Islamic banks' performance and economic growth in GCC countries. In this quest, this paper attempts to examine whether Islamic banks contribute to the economic growth. We develop a structural equation model to attest these links based on the evidence that Islamic finance contributes to higher levels of economic growth. As a measure of profitability, we include several determinants that are usually ignored in the literature; namely, size, liquidity, capital adequacy, credit risk, and expense management. The study covers Islamic banks operating in Bahrain, UAE, Kuwait, Oman, Qatar and Saudi Arabia over the period 2010-2017. We show a positive relationship between Islamic banks and economic growth, especially for the years immediately after the global financial crisis. In other words, Islamic banks performance have contributed to economic growth mainly during the period right after the financial crisis. Our findings represent a significant contribution to explaining how Islamic financial institutions' activities induce economic growth. Our findings could grant the managers of the Islamic banks a better understanding on how their institutions could improve economic performance as it reduces the severity of the financial crisis by avoiding major weaknesses of the conventional banking system.

Keywords: GCC Countries, Islamic Banks, Economic Growth, Structural Equation

JEL Classifications: G20, O11

1. INTRODUCTION

The first private commercial Islamic bank has seen light in 1975 in "Dubai Islamic Bank". Since then, the liberalization of Islamic financial systems, the Islamic banks expanded worldwide and have been developed in many ways. In their 2008 Islamic Finance Development Report, Thomson Reuters stated that Islamic banking has become the largest sector in the Islamic finance industry having total assets of USD 1.72 trillion, which represents 71% of the industry's assets. In fact, the higher than unexpected development and growth rate has raised many questions for the emergence of Islamic banking. These observations motivated many scholars to examine the relation between Islamic financial system and the economic growth and development. For instance,

following the seminal work and subsequent studies by Schumpeter (2003), Goldsmith (1970), Shaw (1974), extensive research in the financial economic field have put attention to the Islamic banking and economic growth nexus.

Globally, banks are central to the economic growth of the country. Deidda and Fattouh (2005) show that the level of concentration in the banking industry contributes to the economic growth. Moreover, the economic growth is affected differently by the type of banks – the conventional banks or Islamic banks – as certain principals and laws makes their impact different. Islamic banks have been shown to have a positive impact on the economic growth in the long run and in the short run for the GCC and East Asian countries (Yusof and Bahlous, 2013; Isik, 2018).

Similarly, El-Galfy and Khiyar (2012) show that the Islamic bank policy contributes to the macroeconomic stability for developed and developing countries; they mention that the Islamic banks represent a major source of the economic growth. Rabaa and Boujelbine (2016) find that the Islamic banks affect the economic growth positively in terms of the financial liberalization.

2. LITERATURE REVIEW

Financial institutions ease the flow of funds to allow profitable activities and therefore encourage investment. They work as an intermediary between investors and debtholders. To build a sustainable economic growth, financial services are undoubtedly one of the key foundations to account for (Beck and Demirguc-Kunt, 2006). Schumpeter (2003) documents a positive relationship between the economic growth and the banking industry since financial institutions operations' rely on people's saving and efficient resources allocation. In their research, Levine et al. (2000) show that components of financial intermediary are positively associated to economic growth; however, they suggest that strengthening creditor's rights, contract enforcement and accounting practices advance financial development and leads to faster economic growth. Since Islamic financial system protects creditor's right, we have an insight of the impact of Islamic banking on economic development. The latter is approved by Kpodar and Imam (2010), who reveal a positive association between Islamic banking and economic growth while still controlling for several other determinants of growth. They further argue that non-Islamic countries may want to adopt some practices of Islamic banking to their banking systems to help spur their economic growth. Beck and Levine (2004) provide further support to these studies by showing the positive impact of stock market and bank development on economic growth. They argue that markets and financial institutions are important for economic growth. Imam and Kpodar (2016), using a data for 52 countries, show that the growth is faster in economies when Islamic banking is booming. Similarly, Bist (2018) shows a positive impact of financial development on economic growth in most under developed African and Non-African countries.

However, Naceur and Ghazouani (2007), Andersen and Tarp (2003), and Favara (2003) advocate that it's not a general rule. The notion of having a relationship between financial development and economic growth has raised many questions either in an explicit or implicit way. The logic tends to make us believe that a good financial or banking system will systematically result in a great economic growth. On the one hand, (Robinson, 1979) shows that finance does not contribute to any causal impact on growth. On the other hand, Benhabib and Spiegel (2000) show a positive influence of financial development on investment and total factor productivity which also positively impacts GDP. Furqani and Mulyany (2009) also shows an evidence of bidirectional causality between finance and economic growth. Similarly, Neusser and Kugler (1998), and Rousseau and Wachtel (1998) empirically show the positive relationship between financial systems and growth. Barajas et al. (2013) reveal the favorable impact of financial systems on economic growth; however, the impact is smaller in oil exporting countries such as the MENA.

Based upon the above studies, we argue that there is no consensus in the literature stating the directional relationship between financial system and economic growth, and not all scholars seem to be convinced about the importance of financial systems in the growth process. For instance, Lucas (1988) studies the mechanics of economic development, but has in no way included financial systems as a factor of economic development. Similarly, Mauro (1995) examines the effect of corruption on economic growth; however, ignores financial systems. In this study, we examine why Islamic banking is considered as a way to improve economic performance. Most studies use GDP per capita as a proxy for economic growth; however, we believe that the GDP per capita is not a comprehensive determinant for growth. Education and health are the other main indicators of economic growth used in this paper. In particular, we use a structural equation model to capture a more comprehensive picture of the economic growth.

Conventional banking has many weaknesses that were overcome by Islamic banking¹; therefore, it can minimize the severity of financial crisis (Chapra, 2011). Conventional banks transmit the potential risk of misinformation to borrowers through higher interest rate, resulting in an adverse selection effect; only borrowers pursuing riskier projects will take on higher interest rate for they have a lower probability of actually paying back (Stiglitz and Weiss, 1981). On the other hand, Islamic banking transfer risks to lenders, thus preventing the adverse selection and ending up with more successful projects. For that reason, Siddiqi and Islamic Foundation (Nairobi, 1985) reports that Islamic banks choose solely successful projects. As a result, during crisis, conventional banks' credit and asset growth was almost half compared to Islamic banks'. Therefore, due to a higher solvency, Islamic banks were easily able to meet the robust demand they were facing, and were also able to maintain stable external ratings (Hasan and Dridi, 2010). They also highlight the importance of liquidity risks as well as the need for a more efficient bank resolution. Therefore, one key priority is to build a well-functioning liquidity management infrastructure. When applied into financial activities and transactions, many of the Shariah principles are found to be beneficial. Obaidullah (1999) suggest that infrastructure programs are successful only if the risk and rewards are shared which one of the key principles of Islamic is banking.

This paper identifies the relationship between Islamic banks and economic growth which will be a key in enhancing other governments in developing this industry. Also, it will be an opportunity to discover the factors in the Islamic banks that lead to economic growth and the indicators that can have a negative effect on economic growth in the long-run. We evaluate the link between the Islamic bank and economic growth using the structural equation model (SEM) based on partial least square. The Islamic bank performance was measured by variables such as: return on

1 The Islamic financial systems follow the Shariah as its legal law. It aspires to convey a vision of fairness, transparency and justice. Islamic finance has been put forward to promote the Islamic ethical spirit in the principles from the various sources towards the Divine revelation, in the Sunnah and in the various practices put in place at the time of the prophet Mohammed, especially the financial and economic practices. It is also a law that protects property rights and contract law.

asset, capital adequacy, credit risk, size, liquidity, and expenses management whereas the economic growth was measured by GDP per capita, education, and health. We extracted information from 27 Islamic banks from the GCC countries during the period 2010-2017. The results show that there is a positive relationship between Islamic banks and economic growth especially a strong connection between these two mechanisms from 2010 to 2015. Islamic banks were not significantly impacted by the crisis, thus, they were able to sustain operations even during the hard times, and the latter could be an implication for investors or for conventional banks that may want to adopt some practices of Islamic banks in order to reduce the unfavorable impact of financial crisis.

3. DATA AND ESTIMATION TECHNIQUES

3.1. Data

The study covers Islamic banks operating in Bahrain, UAE, Kuwait, Oman, Qatar and Saudi Arabia countries banking sectors over the period of 2010-2017. We include 27 banks over an 8 years period, on a quarterly basis extracted from Bank Scope database. Concerning the macroeconomic variables, we have used the IMF-IFS (financial statistics) and the WDI (World Bank world development indicator) databases as our main source, in addition to the annual reports and the financial statements of the selected Islamic banks.

3.2. Model Specification

This study focuses on the good performance of Islamic banks and its impact on the economic growth. We opted to develop an SEM to attest these links based on the evidence that Islamic finance contributes to higher levels of economic growth. Most of the studies would use GDP per capita as the indicator for economic growth; however, we believe that GDP is only one of the many factors that contribute to a nation's growth. A structural equation model was used to find out the main determinants of economic development. Developed nations are not wealthy nations, but they are economies with high human capital (Satt et al., 2020). Education and health are the other main indicators of economic growth. Latent variables need to be characterized by their indicators, having a strong correlation as it is emphasized by the

SEM principles. GDP per capita as the main indicator for economic development, the quality of health and education systems are the other ones.

Concerning banks' performance, traditional literature has used ROA as a proxy; however, we believe that for banks in general and Islamic banks in specific, there are several determinants of performance besides profitability (ROA), as explained below.

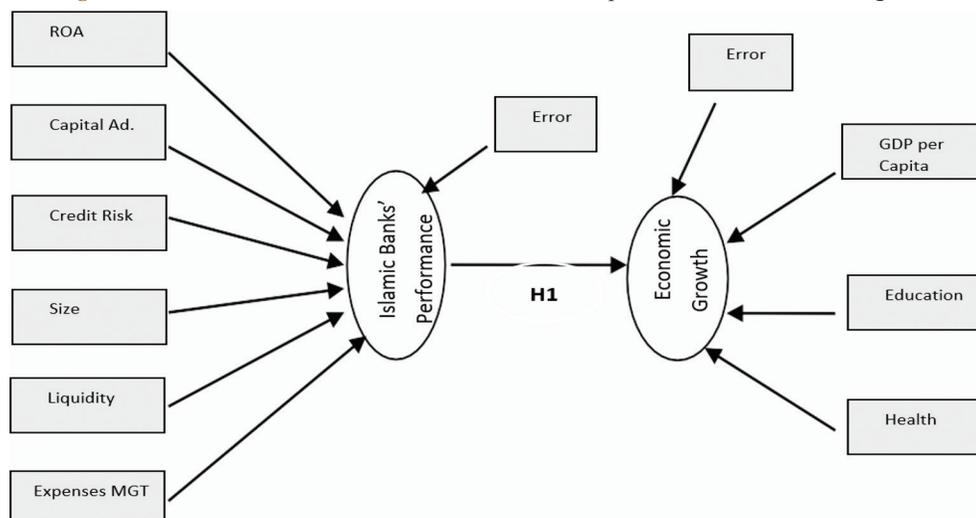
3.2.1. Bank profitability

To maintain the stability of banking systems, it is vital to have a sustainable and healthy profitability. In most studies on bank profitability, linear models are used to assess the impact of several factors that might be relevant in justifying profits. However, most researchers focus solely on bank and industry level factors as determinants of bank profitability which lack internal consistency. There is no deep investigation of the macroeconomic environment effect which is mainly due to the limited time dimension of the panels used. Also, some results obtained in the literature might be biased due to not sufficiently describing the econometric methodology or ignoring some important factors of bank profits. In this paper we follow Athanasoglou et al. (2008) and focus on the determinants of bank profitability. They reveal that capital, credit risk, size, liquidity and expense management are valuable in explaining bank profitability. Joh (2003) links bank profitability to corporate governance and shows that firms with low ownership concentration have low profitability. Papadogonas (2006) indicates that size, managerial efficiency, debt structure, investment in fixed assets and sales growth significantly affect firm profitability in a sample of firms in Greece. In addition, Ahmed and Khababa (1999) show that risk and size explain banks' profitability measured by the return on assets (ROA) and return on equity (ROE) in Saudi Arabia (Figure 1).

3.2.2. Capital adequacy

In order to support their operations, banks' capital is used to measure the ability of a bank to repay its debt. It is expected to positively affect banks' profitability. Berger (1995) studies the relationship between bank capitalization and profitability for the US and European banking systems and shows that capital expands

Figure 1: Structural connections between Islamic Banks' performance and economic growth



production, improves sales, cash flows and the ability to generate profits. Short (1979) argues that in order to appear more profitable, larger banks are more likely to raise less expensive capital. Some evidence advocates that higher capital results in higher earnings due to reduced interest rate on uninsured purchased funds. It is argued that a bank with higher capital operates more effectively, especially in periods where unexpected losses are recorded, since they have more flexibility and time to cover from the losses; therefore, attaining increased profitability (Athanasoglou et al., 2008). Goddard et al. (2004) study the profitability of European banks in the 1990s and reveals a positive relationship between capital to asset ratio and profitability.

3.2.3. Credit risk

Risk management is another important determinant of profitability in the banking industry. Theoretically, one would expect that higher exposure to credit risk is associated with lower firm profitability. In other words, a negative relationship may exist between credit risk and bank profitability. In the banking sector, one important element to account for is risk management. The main reasons for bank failure are poor quality of assets and low liquidity levels. In order to hedge against risk in periods of uncertainty, banks tend to diversify their portfolios or raise their liquid assets. Miller and Noulas (1997) report a negative effect of credit risk on profitability. It can be explained by the fact that lending high risk loans raise the exposure of financial institutions to unpaid loans, resulting in lower returns for many commercial banks. Athanasoglou et al. (2008) reveal a negative and significant relationship between credit risk and banks' profitability in the Greece banking system where managers follow risk averse strategies in order to maximize profitability.

3.2.4. Size

The impact of size on bank's profitability is argued to be non-linear. Athanasoglou et al. (2008) suggest that profits tend to increase at first with size but end up declining. Berger et al. (1993) show that large banks may face inefficiencies of scale. In contrast, some studies reveal a positive and significant size-profitability relationship (Smirlock, 1985).

3.2.5. Liquidity

Bank's liquidity refers to the ease with which a bank is able to repay its financial obligations. Liquidity is one of the main factors for bank failure which is why in periods of uncertainty; banks' first action is to raise liquid assets. Liquid assets can be easily converted into cash but are also associated with lower returns; therefore, we can expect that the more liquid assets a bank holds, the less profitable it will be. Molyneux and Thornton (1992) show a negative relationship between liquidity and bank profitability. The authors suggest that since liquidity holdings represent a cost to the bank, there is a negative relationship between liquidity and profitability. In contrast, and against all odds, Kosmidou (2008) reveals that less liquid banks have lower return on average assets.

3.2.6. Expenses management

Poor expenses management is unsurprisingly one of the reasons leading to poor performance. The relationship between

expenses and profitability may look obvious, since one would associate higher expenditure with lower profits. However, higher expenses can, in contrast, be linked to higher volume activities; thus, higher revenues. The latter is not always the case since it is argued that efficient banks are supposed to operate at a lower cost. Therefore, banks should, as a pre requisite, be cost efficient in order to link higher expenditure with higher revenues. Kosmidou (2008) shows that higher return on average assets is associated with efficient expenses management. Echengreen and Gibson (2001) show a positive and significant relationship between expenses and profitability. Bourke (1989) show that better quality management is associated with profitability. Athanasoglou et al. (2008) find that expenses are negatively associated to performance and cost decisions of bank management are crucial in affecting bank profitability.

On the basis of the variables explained above, we next use structural equation modeling based on partial least square. First latent exogenous construct (Islamic Banks performance) can be measured in mathematical terms as:

$$\xi = \gamma_{x1}X_1 + \gamma_{x2}X_2 + \gamma_{x3}X_3 + \gamma_{x4}X_4 + \gamma_{x5}X_5 + \gamma_{x6}X_6 + \zeta$$

Second latent endogenous construct (Economic Growth) is measured as:

$$\eta = \gamma_{y6}Y_6 + \gamma_{y7}Y_7 + \gamma_{y8}Y_8 + \zeta$$

In this way, the hypothesis (H_1), impact of latent exogenous variables, Islamic banks performance measures (ξ) on latent endogenous variables, economic growth (η) would be measured as:

$$\eta = \beta\xi + \zeta$$

As far as the previously described literature is taken into consideration, it seems very interesting to double check the link between the financial sector performance and more precisely Islamic banks and the economic growth. Therefore, the hypothesis to be tested is as follows:

H_1 : All else being equal, economies with high Islamic banks performance tend to have high economic growth.

4. EMPIRICAL RESULTS

4.1. The Partial Least Squares Path Modeling

The need to test for complete theories and concept made the structural equation modeling very popular (Rigdon, 1998). The spread of SEM application can be mainly due to the fact that such a method is able to evaluate the measurement of latent variables and at the same time testing their interrelationship (Babin et al., 2008). Though, the covariance-based approach (CB-SEM) was adopted by many researchers, still many have opted for a variance-based least squares technique (PLS-SEM). Wold (1974; 1980) has originally developed the methodology. The partial least squares technique is a structural equation modeling based on the approach of maximizing the explained variance of endogenous constructs

(Fornell and Bookstein, 1982). PLS-SEM runs in a manner very similar to a multiple regression analysis, and very different from the CB-SEM that opts to confirm theories by the models accuracy in estimating a covariance matrix for the sample data (Hair et al., 2011). All in all, the stated above characteristics makes PLS-SEM very valuable for explanatory research, in our case, Islamic Banks' performance and economic growth. Multivariate normality need no assumptions to be made especially that smaller sample requirement is one of the advantageous features of the PLS-SEM.

4.2. KMO Measures of Sample Adequacy (MSA)

The computation of the Kaiser-Meyer-Olkin measure of sampling adequacy is vigorous for factor analysis method (Kaiser, 1970). The technique depends on extracting the factors based on KMO MSA rule and regress the extracted factors against dependent variables. KMO MSA value of 0.243 demonstrates that the data of indicators show a satisfactory outcome for performing factor analysis (Table 1).

4.3. Data and Analysis of the Measurement Model

The study covers Islamic banks operating in Bahrain, UAE, Kuwait, Oman, Qatar and Saudi Arabia countries banking sectors over the period of 2010 to 2017. We include 27 banks over an 8 years period, on a quarterly basis extracted from Bank Scope database. Concerning the macroeconomic variables, we have used the IMF-IFS (financial statistics) and the WDI (World Bank world development indicator) databases as our main source, in addition to the annual reports and the financial statements of the selected Islamic banks.

Using PLS Graph Version 3.0, we calculate weights via bootstrapping method in a way to confirm the validity of all latent variables that we have included in the SEM. It is an attempt to figure out how each indicator contributes toward its construct. For instance, taking Islamic Banks' performance (IBP) as the construct, ROA has a higher contribution towards capturing the IBP rather than any other indicator during the whole period of study.

When it comes to constructs' internal reliability and convergent validity, Table 2 summarizes all the findings. Fornell and Lacker

Table 1: KMO and Bartlett's test

Kaiser-Meyer-Olkin measure of sampling adequacy		0.243
Barlett's Test of Sphericity	Approx. Chi-Square	5.322E4
	Df	17
	Sig.	0.000

Source: SPSS output

Table 2: Results of measurement model

Constructs	Convergent validity		
	Loadings	Average	CR
ROA	0.899	0.501	0.601
Capital Ad.	1.000	0.544	1.000
Credit Risk	0.789	0.601	1.000
Size	0.788	1.000	0.722
Liquidity	0.651	0.921	0.712
Expenses MGT	1.000	0.591	1.000
GDP per Capita	0.699	1.000	1.000
Education	0.911	1.000	1.000
Health	1.000	1.000	1.000

(1981)'s model was used to assess convergent validity based on variance, composite reliability and factor loadings. Chin (1998) recommends a level of 0.5 as a threshold for factor loadings. All factor loadings have values above the threshold, where Capital Ad., Expenses MGT and Education have the maximum value of 1.0. The AVE (average variance extracted) for all constructs have estimates value above 0.5 level, ROA and Capital Ad. near the cutoff, while Size, GDP per Capita, Education and Health having the highest value of 1.0. Concerning the composite reliability (CR), Hair et al. (2010) have recommended a threshold of 0.7 level. Values vary between 0.601 and 1.00, ROA with the minimum value; an estimate of how well a construct is measured by the assigned indicators.

Table 3 shows the results for the discriminant validity of constructs. The discriminant validity is demonstrated by the measures of constructs that theoretically should not be highly related to each other. The same is evident in our results since the measures are not highly correlated.

We compare the correlation between the constructs and the square root of the variance extracted for a construct from Table 2. For adequate discriminant validity, correlations of every construct should be less than the square root of the AVE, which is the case for all our models' constructs. Overall, one can conclude that the measurement model has an adequate reliability, convergent validity and discriminant validity.

4.4. The Structural Model

After testing for the MSA, constructs' internal reliability and convergent and the discriminant validity of the constructs, the quality of the structural model is evaluated based on the significance of relations between β (latent constructs), R^2 (overall goodness of fit) and Q^2 (predictive power of the model). Bootstrapping techniques of 27 resamples replacements was applied at this stage to figure out the impact of Islamic banks' performance on economic growth from the year 2010 to 2017. Standardized path coefficients allow the fulfillment of the proposed hypotheses (Serrano-Cinca et al., 2009).

Table 4 illustrates β coefficient, t-values and their significance for all the 8 years under study (from 2010 to 2017). The link between Islamic banks' performance and economic growth was strong during years 2010, 2011, 2012 and 2015 (stronger link for the years 2010 and 2012). This strong relationship between Islamic banks' performance measure and economic growth is consistent with Furqani and Mulyany (2009), Kassim and Majid (2010) and Bourkhis and Nabi (2013) who studied the role of Islamic financial development in economic growth. Over all, the years 2010 till 2013 show positive coefficients, supporting the hypothesis that Islamic banks' performance have a positive impact on economic growth. In other words, Islamic banking performance has a significant impact on economic recovery especially that the years under discussion were the ones right after the world financial crisis, and the highest β coefficient was for the year 2010.

4.5. Results of Hypotheses Testing

From factor one variables the below Table 5 list of path coefficients (β), along with significance. Using PLS Graph Version 3.0,

Table 3: Discriminant validity of constructs

	ROA	Capital Ad.	Credit risk	Size	Liquidity	Expenses MGT
ROA	1.000					
Capital Ad.	0.112	1.000				
Credit risk	0.282	-0.165	1.000			
Size	-0.109	0.139	-0.100	1.000		
Liquidity	0.122	0.011	0.001	0.154	1.000	
Expenses MGT	0.021	0.091	0.188	0.059	-0.122	1.000
	GDP per capita	Education	Health			
GDP per capita	1.000					
Education	0.211	1.000				
Health	0.129	0.011	1.000			

Table 4: Path coefficients (2010-2017)

Path	Beta coefficient	t-value	Significance
IB_Per and Eco_Growth (2017)	-0.0011	0.0012	P>0.10
IB_Per and Eco_Growth (2016)	-0.2338	0.2111	P>0.10
IB_Per and Eco_Growth (2015)	0.4126*	1.7127	P<0.10
IB_Per and Eco_Growth (2014)	-0.0111	0.0122	P>0.10
IB_Per and Eco_Growth (2013)	0.2212	0.1544	P>0.10
IB_Per and Eco_Growth (2012)	0.6122*	1.7911	P<0.10
IB_Per and Eco_Growth (2011)	0.3211*	1.672	P<0.10
IB_Per and Eco_Growth (2010)	0.6341**	2.112	P<0.10

*Significance at 10% (1.645), **Significance at 5% (1.96), ***Significance at 1% (2.576)

Table 5: Hypothesis testing: All else being equal, economies with high Islamic banks performance tend to have high economic growth (2010-2017)

Year	Suggested effect	Path coefficient	Sig.	Confirmed
2017	+	-0.0011	P>0.10	No
2016	+	-0.2338	P>0.10	No
2015	+	0.4126**	P<0.10	Yes
2014	+	-0.0111	P>0.10	No
2013	+	0.2212	P>0.10	No
2012	+	0.6122**	P<0.10	Yes
2011	+	0.3211*	P<0.10	Yes
2010	+	0.6341***	P<0.10	Yes

*Significance at 10% (1.645), **Significance at 5% (1.96), ***Significance at 1% (2.576)

multiple path values were calculated to test the strength of path coefficient on which the main hypothesis was formulated. The path between exogenous latent constructs with the endogenous latent construct show a positive relationship and is statistically significant for early years only, thus we couldn't accept all the hypotheses proposed (2013, 2014, 2016 and 2017).

In other words, Islamic banks performance have contributed to economic growth or remedy mainly during the period right after the latest world financial crisis where a recovery was needed; however, Islamic banking had less contribution to economic growth in later years when the GCC economies were back to their ordinary functioning. The contribution of this study is twofold; First, Islamic banking is considered as the way to improve economic performance because it minimizes the severity and frequency of financial crisis by avoiding major weaknesses of the conventional banking system (Chapra, 2011; Ghafour, 2008). Second, Islamic banking was a remedy for the subprime crisis. Islamic banks were not significantly impacted by the crisis, thus,

they were able to sustain operations even during the hard times (Satt et al, 2020). Not only this, some findings did show that Islamic banks had a superior performance during the post crisis period (Hasan and Dridi, 2010).

Islamic banks are known by certain rules and principles that helped them resist the crisis and maintain their stability during that period (Nafla and Hammam, 2016). Besides, Islamic banks followed the Sharia 'a law which was a factor that leads to the minimization of the rigor of the financial crises. The usury law is one of the principles that is prohibited in Islam but instead replaced by sharing profit and loss between the entrepreneur and the bank. This type of contract is a key for the bank to decrease its risk and for the dealer to manage its funds. Debt-based contract is another type of contract in the Sharia's law that contains certain number of restrictions that lead the bank to manage its risks by evaluating their investment with the entrepreneur. Ethical practice of Islamic banks was a driver of their resistance during the crisis period in terms of transparency when it comes to the items and type of investment that are included in the contract. The Islamic financial organizations like the Accounting and Auditing Organization for Islamic Financial Institutions, Islamic Financial Services Board, and Sharia Supervisory Board that ensure that the Islamic banks are respecting the standards and avoiding any type of unethical practice were a factor that helped the banks during the crisis period. These reasons can be summarized in three factors that helped the Islamic banks to survive during the first period of the financial crisis which are "ethical practices, the prohibition of interest (Riba), and multi-level supervision mechanisms" (Boulanouar and Alqahtani, 2016). Besides, Islamic banks are more secure compared to the conventional banks because of their Islamic law and types of the products (Parashar and Venkatesh, 2010).

4.6. Robustness of Results

As a final check of the quality of the model, we have conducted the following descriptive statistics analysis. Panel A in Table 6 presents the ML (Classical accounts of maximum likelihood) and robust estimates that correspond to the basic MLM (the mean adjusted statistic) estimation and the other ML is with the scaling correction factor for possible non-normality in the data set. The same panel includes the P-value of the Chi-square, the value is modestly high, confirming a good quality of the model. In panel B, both Comparative Fit and Tucker-Lewis Indices have statistics higher than the 0.90 threshold, confirming that our model improves the independence model or the Baseline model (Hair et al., 2006).

Table 6: Model estimate statistics

Estimator	ML	Robust
Panel A: Main Chi-square statistics		
Minimum function test statistic	8.566	8.121
Degrees of freedom	6	6
P-value (Chi-square)	0.111	0.143
Scaling correction factor for the Satorra-Bentler correction	1.000	
Panel B: User model versus baseline model		
Comparative fit index (CFI)	0.999	0.999
Tucker-Lewis index (TLI)	0.999	0.999
Robust comparative fit index (CFI)	0.999	
Robust Tucker-Lewis index (TLI)	0.999	
Panel C: RMSEA		
Root mean square error of approximation	0.001	0.013
90% confidence interval	(0.000; 0.013)	(0.000; 0.010)
P-value RMSEA ≤ 0.05	0.911	0.922
Robust RMSEA	0.022	
90% confidence interval		(0.000; 0.046)

Panel C represents root mean square error of approximation (RMSEA), a value of 0.000 for the lower bound of the confidence interval (lower than 0.05), it does not reject the close-fit hypothesis; meanwhile, with a value lower of 0.013 which is lower than the threshold of 0.1 for the upper bound of the confidence interval, the Poor-Fit hypothesis is rejected (Steiger and Lind, 1980).

Looking at RMSEA is more important to understand the quality of the model. Based on the value of the lower bound of the confidence interval (lower than 0.05) it doesn't reject close-fit hypothesis. At the same time with the value of the upper bound of the confidence interval lower than 0.1 the poor-fit hypothesis is rejected. When it comes to endogeneity, moving variables back and forth between structural and measurement parts of the model, have revealed that endogeneity might exist but not to the extent of compromising the quality of the model.

5. CONCLUDING REMARKS

This study aims at revealing the existing relationship between Islamic banks and economic growth. Our sample focused on GCC countries; namely, Bahrain, UAE, Kuwait, Oman, Qatar and Saudi Arabia from 2010 to 2017. A structural equation model is developed to attest these associations based on the evidence that Islamic finance leads to a higher level of economic growth. Multiple studies were conducted to see the relationship and impact of banking development on economic growth. Three sets of literature have been developed, the first would say that banking drives growth or supply-leading view where it is argued that financial intermediaries are essential for growth (Schumpeter, 1911); the second would claim that growth drives finance or what is being referred to as demand-following view; finally, they would show a bi-directional relationship between banking development and economic growth. Rousseau and Wachtel (1998) show the positive relationship between financial systems and growth through pure time series. However, despite the literature and studies that were conducted on the relationship between banking performance and economic growth, most of it was on conventional banking; therefore, studies conducted within the Islamic banking

framework are very limited. Also, most scholars focused on solely bank and industry level factors as determinants of bank profitability in which they lack or ignore internal consistency. However, in this study, we made sure to include several determinants that are usually ignored in the literature; namely, size, liquidity, capital adequacy, credit risk, and expense management. We show a positive and statistically significant relationship between Islamic banks and economic growth for most years studied, especially right after the global financial crisis.

The research analyzes how the economic growth is affected by the various variables of the Islamic banks performance. The results were positive precisely during 2010-2015, which shows that Islamic Banks were adopting certain number of rules that were the key to the economic growth. In 1990, the GCC was known by a good banking system when it comes to the capital adequacy, asset quality, and profitability and which had an impact on the increase of the GDP per capita (Molyneux and Iqbal, 2004). Another external factor that was a cause for the economic growth is the size of the Islamic bank. The size is one of the leaders to the profitability of the banks and the Islamic banks have been growing within years. Similarly, the Islamic bank was managing their expenses and their credit risk based on the Sharia principles that oblige them to evaluate the type, quality, and the amount of the investment before the confirmation. Those principles were the factors that helped the Islamic Banks to resist during the severity of the crisis period. Based on the research, the Islamic banks helped in the development of the health, education sector and the GDP per capita in the GCC countries. These reasons can be explained that the Islamic banks contribute positively in the development of country's economy and can play a safer role during the crisis period. The Islamic bank principles are one of the factors that touch the health, education of the countries positively which can be a good sign on trying to develop these banks.

Overall, this paper provides evidence that Islamic banks performance is significantly and positively contributing to economic growth. In this regard, Islamic banks did help economies to recover from the subprime crisis. This study has primarily two

limitations. First, this study is only for Muslim Countries, one can wonder if the results can be adopted in non-Muslim economies and second, it makes no distinction between the economies where Islamic financing is common and economies where it is still a new way of financing. For future studies, it is recommended to have a wider scope where other Islamic financial institutions such as Islamic insurance (companies and determinant factors; years of operation, and different analytical methods to test for results' robustness, for example, can be taken into account). A comparative study between eastern and western economies to see where Islamic banks had a major role for economies to recover from the latest financial crisis could be undertaken.

Our findings represent a significant contribution to explaining how Islamic financial institutions' activities induce economic growth. In addition to that, the findings could grant Islamic banks' managers better understanding on how their institutions are considered as the way to improve economic performance because it minimizes the severity and frequency of financial crisis by avoiding major weaknesses of the conventional banking system. Finally, Islamic banks were not significantly impacted by the crisis, therefore, they were able to sustain operations even during the hard times, and the latter could be an implication for investors or for conventional banks that may want to adopt some practices of Islamic banks in order to reduce the unfavorable impact of financial crisis.

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