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Full Length Article

Ramifications of varying banking regulations on performance of Islamic Banks

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Abstract

Recent financial crises have highlighted the importance of banking regulations to hedge against the high risk accredited to imbalances in banks' balance sheets. Nonetheless, banking regulations may have adverse effects. On the one hand, they serve as prudential measures that alleviate the effects of crises on the stability of the banking system while on the other hand; they may increase the cost of intermediation and reduce banks' profitability. Implementation of non-suitable regulations such as Islamic banks adopting conventional banks regulations could also impair banks' performance. This paper analyses the linkages between bank regulatory and supervisory structures associated with Basel III's pillars has any significant impact on Islamic banks' performance in Asia and Gulf Cooperation Council (GCC) using two-step Generalized Methods of Moments (GMM) technique. Findings suggest that regulatory variables are positively significant with Islamic banks' performance in Asian region but not in the GCC.

JEL classification: G21; L5

1. Introduction

The recent global financial crisis (GFC) that originated from United States between the years of 2007–2008 was mainly caused by the inefficiency in regulating banking frameworks. Deteriorating lending standards led to an accelerated credit extension and leverage strategies by financial institutions. At the inception of the GFC, many financial institutions were highly leveraged, short on liquidity and possessed high exposures in off balance sheet items. (Claessens & Kodres, 2014). The relaxation in regulations encouraged financial institutions to create highly complex instruments such as Collateralized Debt Instruments (CDOs) and Special Purpose Vehicles (SPVs) that are off balance sheet items which regulatory authorities failed to administer effectively (Krugman, 2009). From a theoretical point of view, these defects would not have occurred in an Islamic banking system because one of the major culprits of these shortcomings interest rate *(riba)* is prohibited under Sharia. The main theoretical background of Islamic finance is to ensure risk-sharing between two parties in a contract, therefore ensuring that risks undertaken are towards economically value-adding projects (Ejaz & Khan, 2014), and not towards creating artificial money in the market by charging interest *(riba)* to borrowers.

The dilemma is, if Islamic banking is already self-insulated from the flaws arising from conventional banking through implementation of Sharia law, why do Islamic banks still need regulatory frameworks? As stated above, the essence of Islamic banking is that it is interest-free and risks in financial contracts between an Islamic bank and its customer is equitably distributed. These financial contracts are usually conducted using profit and loss sharing (PLS) contracts such as

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Mudarabah and *Musharakah*. However, in real life practices, Islamic banks do not utilize these PLS contracts extensively, instead they make use of cost-plus contracts such as *Murabahah*.[1] There are many possible reasons behind this choice of action. As discussed by Dar and Presley (2000), the general reason behind the lack of usage of PLS contracts is due to its susceptibility to agency problems. Entrepreneurs are more likely to put less effort in a project and report lesser profits than the actual figure in comparison to a self-funded entrepreneur. Islamic banks are also reluctant to use PLS contracts because it is mostly based on tangible assets like real estate and many of the Muslim countries that are operating Islamic banking systems do not have well founded rights on property management, which imposes additional risk to the contract (Dar & Presley, 2000).

The conventional approaches in mitigating risks are not suitable for usage by Islamic banks mainly due to Islamic banks' distinct way of operating. One of the unique risks faced by Islamic banks is displaced commercial risk, whereby Islamic banks may forego profits earned in order to provide a competitive and comparable rate of return to their customers to refrain from problems such as customers withdrawing their capital and depositing it into conventional banks. Islamic banks also face a major risk due to heavy asset-based financing. Asset based financing relies heavily on investments in commodities and real estates which gives rise to liquidity problems (Kammer et al., 2015, p. 38). Due to complex structures of Islamic financing contracts arising from strong reliance in real estate and commodities investment, Islamic banks are also exposed to severe market and operational risks that are difficult to mitigate especially because hedging instruments are not considered Sharia-compliant. Similarly, conventional banks may suffer from liquidity risk, market risk, credit risk and exchange rate risk as well, but Islamic banks' might encounter these risks more severely because secondary market trading for Islamic contracts are not very active. In other words, Islamic banking operations are riskier in nature when compared to conventional banking, which is why regulatory frameworks are of great importance.

It can be said that profitability of an Islamic bank reflects its level of performance. However, the present-day issue is that Islamic banks' profitability continues to lag their big conventional counterpart. As reported in the World Islamic Banking Competitiveness Report 2013–2014 by Ernst & Young, leading Islamic banks are reporting a Return on Equity (ROE) that is 19% lower in comparison to conventional banks. This is due to the fact that the Islamic financial industry is too focused on expanding the growth of Islamic banking. Another cause of lagging profitability in Islamic banks is that most of Islamic banks are either small in size or are operating within a highly concentrated market (Ernst & Young, 2014, p. 82).

It can be seen from above that the nature of Islamic banking operation demands an equally strong regulatory framework to control for its underperformance and bring it on level playing field of conventional banks. Therefore, in order to assess how established banking regulations as per BASEL guidelines and banking regulations specific to Islamic banks will affect Islamic banks' performance; this paper dwell into assessing the impact of regulations on Islamic banks in the two most Islamic banking developed region, namely Asia and the GCC.

It has been noted by the regulators and practitioners and evident from above discussion that one of the key issues in harmonizing the Islamic finance industry is the varying regulatory framework in many countries they operate. As per the authors' best knowledge, there is no empirical evidence on how the variable legislation can impact their performance in different jurisdictions. The uniqueness of the paper lies in that fact that the paper make use of both banking regulation and Shariah regulation variable and assess its impact on the Islamic banks' performance in different jurisdictions. The paper also contributes to the Islamic banking literature by showing how similar determinants of Islamic banks performances can vary as per the two important region of Islamic banking and finance namely Gulf Cooperation Council (GCC) and South/Southeast Asia (SSA). The findings of the paper are crucial for lawmakers to resolve the legal issues whether it is related to banking or Shariah regulation which are impediment for the growth of the Islamic finance industry.

The rest of the paper is structured as: Section 2 will discuss the existing literature related to theme of the paper and highlight the contribution of current paper to the existing literature. Section 3 will focus on the data and empirical model chosen to be used in this paper. Section 4 will discuss the empirical findings and policy recommendations while lastly; Section 5 concludes the paper.

2. Literature review

Regulatory frameworks and supervision are vital to ensure the performance of any financial institution, including its ability to enhance financial institutions' credibility, directly impacting depositors or investors' faith in the financial institution. The main purpose of having regulatory frameworks for banks is to alleviate excessive risks which will in turn increase a bank's performance or profitability. However, unlike conventional banks, Islamic banks bear unique risks that are complex to mitigate and since regulations applied to Islamic banks are mostly adopted from the conventional viewpoint; existing banking regulations are not effective to cater for Islamic banks' distinct risks.

Analysing the impact of regulatory frameworks on bank performance in isolation is inadequate. The new regulations underpinning Basel III aspires to make the global banking system safer by redressing many of the flaws that became

[1] The Mudarabah and Musharakah contracts are both based on partnership. Under the Mudarabah contract, the Rab Al Mal is the fund provider while the Mudarib is the person utilizing the funds for labour. In the event of a loss, only the Rab Al Mal endures the loss because the Mudarib had already contributed his labour efforts. The difference with a Musharakah contract is that both partners in a Musharakah contract, contributes capital and labour and profit and loss are shared between both parties. A Murabahah contract is a cost-plus contract whereby the rate of profit for the fund provider is pre-determined and agreed upon by both parties.

visible in the recent financial crisis. Improving the quality and depth of capital and renewing the focus on liquidity management is intended to spur banks to improve their underlying risk-management capabilities. This will raise the biggest challenge for banks; without compromising returns they need to incorporate a higher level of risk management in their strategies. With the onset of Basel III regulations it is imperative to determine if Islamic banking system is better equipped to withstand any future financial turmoil.

Although many have recognized the critical need of effective legal framework in governing banking activities, there is of yet uniform set of regulatory framework governing Islamic financial services industry (Mutalip, 2008; Alam, 2013). Most of jurisdictions with Islamic banking practices have been heavily relying on existing conventional banking regulations (Alam, 2013). Many of the recent debate are of criticism on the shortcomings of Basel III Accord which fail to address the risk issues specific to Islamic financing. Concern about this, Islamic Financial Services Board (IFSB) have adapted certain elements from the Basel standards and developed risk management guidelines particularly for Islamic financial service industry.[2] Nonetheless, the international acceptance of IFSB's standard for Islamic banking practice is yet to be seen (Alam, 2013).

Many studies have found that impact of regulatory frameworks on banks' performance vary under the influence of bank-specific, macroeconomic, and financial development; (Barth, Lin, et al. 2010), (Demirguc-Kunt, Laeven and Levine, Regulations, Market Structure, Institutions and The Cost of Financial Intermediation 2003) and (Flamini, McDonald, & Schumacher, 2009). Bank-specific factors like the size of a bank can be strongly related to the condition of a nation's regulatory framework. For instance, in a country that has only a few but substantially large-sized banks, it could resemble that the country is very restrictive on approving applications for new banks. This causes healthy competition to deteriorate and may allow existing banks to gain higher profits; banks could charge a high interest rate to borrowers while paying a lower rate to depositors because these banks are deemed to be safe by the customers (Demirguc-Kunt, Laeven and Levine, Regulations, Market Structure, Institutions and The Cost of Financial Intermediation 2003). Flamini et al. (2009) supports this idea through their finding that bank size is positively related to profitability, which they explained is due to large-sized banks' ability to exploit economies of scale.

One of the ways to measure the financial development of a nation is by looking into its development in stock market or development in the banking industry because this indicates whether the county's financial sector is competitive and operating efficiently. A developed stock market suggests that the country's market is performing better, leading to a more competitive environment and which imposes a downward pressure on banks' profitability; (Demirguc-Kunt, Laeven, & Levine, 2003, p. 63) and (Levine & Zervos, 1998). On the contrary, Ben Naceur and Goaied (2008) found that the stock market and banking industry are complements of each other, meaning that in order for banks to increase their profitability, the country should focus on encouraging the development and efficiency of stock market. Additionally, ownership structure of banks also play an important role on their performance. Based on traditional competition-fragility view, in competitive markets, banks earn lower profits due to not being able to earn monopoly rents (Fu, Lin, & Molyneux, 2014). Barth et al. (2010) asserted that banks owned by governments are actually dominated by politicians to gain on their political objectives such as providing jobs for their supporters or bailing out state-owned enterprises that are not performing well.

There are some recent studies which looked into the performance of Islamic banks from regional perspective. Al-Wesabi and Ahmad (2013) in their study on GCC's Islamic banks found that credit risk of Islamic banks was significantly affected by management quality, liquidity, risky assets and GDP. In similar context Alandejani and Asutay (2017) found that sectoral financing growth of Islamic banks increases the credit risk exposures of Islamic banks in the GCC compared to tehri conventional counterparts. In terms of bank failure, it was reported by Fakhfekh, Hachicha, Jawadi, Selmi, and Cheffou (2016) that GCC's Islamic banks are more resilient than conventional banks and especially in Saudi Arabia within the region. Alandejani, Kutan, and Samargandi (2017) also noted that Islamic banks in the GCC region have a higher incidence of failure and by improving regulatory qualities will reduces the hazard rate of survival time in the GCC's banking sector. A similar sentiment was echoed by Pappas, Ongena, Izzeldin, and Fuertes (2016) study which noted that hazard rate of Islamic bank are more prone to regional marcoeconomic conditions.

If we specifically look into Islamic banking regulation, it is bound to be more complex than its conventional counterpart given the basis of Sharia law which can be interpreted and implemented varyingly according to different jurisdictions. For instance, the regulations imposed will determine whether the banking industry in a specific country is allowed to operate Islamic windows. The reason behind allowing the sale of Islamic financial instruments through a window is highly related to increase the competitive banking in the given country. Through Islamic windows, competition can be enhanced resulting in a lower cost of financing for Sharia-compliant financial products (Mejia, Aljabrin, Awad, Norat, & Song, 2014), which could favourably affect the profitability of the Islamic bank. This notion is true for Bangladesh, whereby Islamic windows intensified the competition in the banking industry, forcing banks to manage their income and costs efficiently in order to be profitable in their operations (Miah & Sharmeen, 2015).

There is also a regulation issue related to Sharia-compliance, which can vary due to different schools of Islamic thought which are managed by the members of a Sharia

[2] The IFSB have issued several guidelines including: Guiding Principles on Liquidity Risk Management in Institutions Offering Islamic Financial Services (IIFS); Guidance Note on Quantitative Measures for Liquidity Risk Management in IIFS; Technical Note on Issues Strengthening Liquidity Management of IIFS: The Development of Islamic Money Market; Revised Capital Adequacy Standard for IIFS.

Supervisory Board (SSB) of Islamic banks. The SSB is responsible in ensuring that the financial products offered by Islamic banks are within the tenets of Sharia principles. However, since interpretation of Sharia varies according to different schools of thought *(Madhab),* the composition of the SSB plays an important role in regulating Islamic bank operation. Many of the countries that operate Islamic banking impose a regulation of minimum three appointed Sharia scholars to be in the SSB (Hasan, 2010).

Sharia is being interpreted in numerous jurisdictions differently due to contradicting explanations of Sharia law from four different schools of thought in Islam which are, *Maliki, Hanafi, Hanbali* and *Shafii* (Hamza, 2013). The distribution of countries following different schools of thought is summarized in Table 1.

Asia is home to most Muslims in this world, with Indonesia being a nation consisting of the largest Muslim population in a country followed by Pakistan, India and Bangladesh (Ernst & & Young, 2014, p. 82). The differences in implementation of Islamic banking regulations may rise due to Sharia law playing varying roles in different jurisdictions. In countries where Sharia law is the fundamental law of the land, like KSA and Pakistan, these countries tend to be stricter in terms of Islamic banking regulations (Song & Oosthuizen, 2014, p. 40). Another implication of differences in Islamic banking regulation is that some conventional banks are allowed to offer Islamic banking products and services through an Islamic window. Islamic windows are authorized to operate in countries such as Malaysia and KSA but banned from countries such as Kuwait and Qatar. Malaysia and KSA are two of the leading countries in development of Islamic banking; with KSA holding 19% and Malaysia holding 9.3% of the global Islamic banking assets (IFSB, 2016).

An additional consequence of having varying regulations implemented worldwide is that these banking operations are non-comparable which could adversely affect Islamic banks' credibility. Take for instance, the method for calculating capital adequacy ratio (CAR), in countries whereby there is only one integrated regulatory framework for all banks; Islamic banks are expected to follow the BASEL Accord to compute CAR. However, for countries like Malaysia, regulatory bodies like IFSB published an amended version of the CAR computation which addresses the need of Islamic banks different nature of encountering risks. Due to varying CAR computation methods, the CAR value computed by Islamic banks are not comparable on an international scale, making Islamic banks' reports not worthy of reliance or trust.

Looking into the regulatory differences for Islamic banking around the world, it is judicious to assume that the impact of regulatory frameworks on Islamic banks' performance cannot be assessed in isolation. There are many other variables that need to be controlled like monopolistic power, a nation's well-being, or banks' market concentration in the economy. This paper contributes to the literature by controlling for variables that will most likely affect the implementation of Islamic banking regulatory such as SHAREG (controls for whether a country implements Sharia law as its fundamental law), ISBANKREG (distinguishes if there is a separate act or regulatory framework applicable only to Islamic banks), SSB (looks into the composition or number of Sharia supervisory board members) and NATSSB (identifies whether each country has a national Sharia supervisory authority). These variables are taken into account for this research paper to further understand how these external variables could influence the effect of implementing regulatory frameworks in selected regions, which in turn will affect Islamic banks' performance.

3. Data and methodology

3.1. Data

Sample has been taken from two Islamic banking developed region, Asia and the GCC region. The countries representing the GCC region are Bahrain, Oman, Kuwait, Saudi Arabia, United Arab Emirates and Qatar. The countries representing South/Southeast Asian (SSA) region are Malaysia, Indonesia, Bangladesh and Pakistan. These countries are selected precisely due to their promising growth in the area of Islamic banking. All these ten contribute two-third of global Islamic banking industry. Banking data has been taken from Bankscope database over the period 2006–2015. Macroeconomic variables such as GDP growth and inflation were obtained from the World Development Indicators. The financial development indicators were obtained from the Global Financial Development Database provided by The World Bank. Banking regulation data were taken from World Bank's 2013 Regulation and Supervisory Database (Barth, Lin, Ma, Seade, & Song, 2013) to compute an indicator of supervisory oversight. Lastly, variables related to Islamic regulation were collected through various methods. The data for number of Sharia board members recruited (SSB), was obtained through annual reports of each bank. Data for the variable representing whether Sharia is the fundamental rule of law in the government (SHAREG) is obtained from the World Fact

Table 1
Geographical dispersion of Islamic schools of taught.

School of Taught	List of Countries
Maliki	Egypt, Sudan, Morocco, Algeria and Kuwait
Hanafi	Turkey, Afghanistan, Pakistan, India, China, Bangladesh, Iraq, Albania, Syria, Egypt and Jordan
Hanbali	Saudi Arabia, Qatar, Jordan, Syria, Egypt, and Iraq
Shafii	Jordan, Palestine, Lebanon, Syria, Yemen, Egypt, Indonesia, Brunei, Philippines, Malaysia, Singapore, Sri Lanka, Thailand and Maldives

Table 2
Distribution of sample of Islamic banks selected.

Country	Number of Islamic Banks	Percentage
Gulf Cooperation Council		
Bahrain	18	40%
Kuwait	8	18%
Qatar	5	11%
Oman	2	4%
Saudi Arabia	4	9%
United Arab Emirates	8	18%
Total	45	100%
Asia		
Bangladesh	7	16%
Indonesia	10	23%
Malaysia	18	42%
Pakistan	8	19%
Total	43	100%

The significance of the Islamic banking in the banking sector for both regions combined can be shown in Table 3 which represent the allocation of total assets of both banking concepts. The table shows there is a significant increase in size of Islamic banking industry between 2006 and 2015. Conventional banking industry however, has been decreased in size over the period, from 90.21 percent in 2006 to 84.48 percent in 2015. The growth rate of total assets of Islamic banking has increased significantly from 9.79 percent in 2006 to 15.52 percent in 2015.

book by the CIA. Data for variable NATSSB and ISBANKREG was obtained from discussions in Hasan (2010).

The sample for this research constitutes a number of 88 Islamic banks from both regions; 45 Islamic banks in the GCC region and 43 Islamic banks in the Asia region. The distribution for the sample selected is presented in Table 2 below.

For the respective jurisdictions under the study, we can see that Islamic banking assets has significant proportion out of total banking assets. From Table 4, it can be seen that share of Islamic banking in its total domestic banking sector for Saudi Arabia is around 49% share in 2015 followed by Kuwait at 38.9%. Qatar stand third at 26.1% trailed by Malaysia at 23.0%. Bangladesh comes next at 19.4% followed by the United Arab Emirates at 18.4%.

Source: IFSB, 2016

3.2. Empirical model

Poghosyan and Hesse (2009) claimed that studies on determinants of bank profitability can suffer from issues such as profit being highly persistent, omitted variables and endogeneity biasness. Due to these issues, this paper employs a dynamic panel technique to address these potential problems. The traditional Ordinary Least Square (OLS) estimator is

Table 4
Islamic banking share in total banking assets by jurisdiction.

Countries	2015 (%)	Countries	2015 (%)
Saudi Arabia	15.52	UAE	18.4
Kuwait	38.9	Bahrain	9
Qatar	26.1	Pakistan	8.2
Malaysia	23	Oman	4.8
Bangladesh	19.4	Indonesia	4.2

subject to many flaws such as autocorrelation, heteroscedasticity, and endogeneity. These problems arise especially because OLS regression holds strong assumptions about the residuals, which could be unrealistic. Indefinitely, these flaws have an adverse impact on statistical inferences. Another downside to OLS is that the OLS estimators are based on first difference, which means it causes fixed effects estimators to inconsistent especially when a small time period is used (Nickell, 1981).

The General Method of Moments (GMM) method is known to address these potential problems that can arise in regressions, especially in a dynamic setting. In simple terms, the GMM technique derives estimators from statements describing the data and parameters, commonly referred to as 'moment conditions'. One of the commonly used estimator for dynamic panel data models is introduced by Arellano and Bond (1991), commonly referred to as 'difference GMM', whereby they suggested that by including all lagged values of the dependent and independent variables as instruments, efficiency and consistency in results can be achieved. The benefit of using this technique is that it removes any potential source of bias that could arise from omitted variables (Arellano & Bond, 1995). However, the difference GMM was later condemned for its weaknesses in a paper written by Arellano and Bond (1995) and Blundell and Bond (1998). They found that when this estimator is applied to a panel with a small time frame, this condition causes the estimator to be inefficient because the instruments (lagged variables) being used to estimate are considered weak (Athanasoglou, Brissimis, & Delis, 2008). The weakness of the difference GMM estimator intensifies in the case of variables being closer to being a random walk (contains unit root) (Baum, 2006).

In order to avoid the complication mentioned above, this paper will use the two step 'system GMM' introduced by Arellano and Bond (1995) and Blundell and Bond (1998), specifically because this estimation is appropriate for small T and large N panel data. The system GMM not only includes the lagged levels, it also takes into account the lagged

Table 3
Distribution of total assets between conventional and Islamic banks.

	2006		2009		2011		2013		2015	
	Million (USD)	%	Million (USD)	%	Million (USD)	%	Million (USD)	%	Million (USD)	%
Conventional banks	1197910	90.21	1855779	86.25	2356262	85.90	2784361	85.04	3245259	84.48
Islamic banks	130061	9.79	295866	13.75	386738	14.10	489765	14.96	578676	15.52
Total	1327972		2151646		2742999		3274126		3823935	

Source: Bankscope database and author's own calculations.

Table 5
Classification of selected variables according to model.

Variables		Model Specifications															
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Bank-Specific	SIZE	✓	✓	✓	✓	✓	✓	✓	✓								
	CAP	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	CONC									✓	✓	✓	✓	✓	✓	✓	✓
Macro-economic	GDP	✓	✓	✓	✓					✓	✓	✓	✓				
	INF					✓	✓	✓	✓					✓	✓	✓	✓
	GFC	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Financial	BANKB	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Development	COMP	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Bank	SPOWER	✓				✓				✓				✓			
Regulation	CAPRQ		✓				✓				✓				✓		
	PRMONIT			✓				✓				✓				✓	
	ACTR				✓				✓				✓				✓
Islamic	SHAREG	✓				✓				✓				✓			
Regulatory	ISBANKREG		✓				✓				✓				✓		
Specific	SSB			✓				✓				✓				✓	
	NATSSB				✓				✓				✓				✓

differences and jointly estimates them. In addition, due to taking the first difference of the equation, the unobserved fixed effects are disposed (Ben Naceur & Omran, 2011). Due to these reasons, the system GMM produces a flexible variance-covariance structure under the moment conditions (Lee & Hsieh, 2013).

3.3. Methodology

The linear dynamic panel data equation is as follows:

$$Perf_{ik,t} = \beta_1 Perf_{itk-1} + \beta_2 BS_{ik,t} + \beta_3 M_{i,t} + \beta_4 GFC_{i,t} + \beta_5 FD_{i,t} + \beta_6 CONC_{i,t} + \beta_7 REG_{i,t} + \beta_8 IR_{i,t} + \beta_9 SSB_{ik,t} + \varepsilon_{i,t}$$

Where $Perf_{ik,t}$ is the measure for performance of bank k in country i for the time t, which is measured by two different proxies of the bank's profitability namely *Return on Assets (ROA)* and *Non-interest Net Revenue (NINR)*. $BS_{ik,t}$ is a vector for bank-specific variables namely *Bank Size (SIZE)* and *Capital (CAP)* for bank k in country i for the period of t. $M_{i,t}$ is a vector of macro factors and are included in the main regression to take account of broad banking system differences across the countries in the sample. The average annual growth rate of *gross domestic product per capita (ΔGDP)* is used to control for each country's economic performance. Another country-specific variable is average annual growth rate of consumer price index to account for *inflation (INF)*. $GFC_{i,t}$ is a dummy variable which takes a value of 1 for the period between the years of 2007–2008 to account for the impact of the global financial crises on country i for the time period t. $FD_{i,t}$ is a vector for variables related to financial development of country namely *Bank-based Market (BANKB)* and *Banking Industry Competition (COMP)*. $CONC_{i,t}$ is a measure of how concentrated the banking industry is in country i for the time period t.; $REG_{i,t}$ represents the level of banking regulation classified as supervisory power (SPOWER), capital requirements (CAPRQ), private monitoring (PRMONIT) and restrictions on bank activities (ACTR) in each country. Lastly, $IR_{i,t}$ is a vector for Islamic related regulations namely *Sharia Regulation (SHAREG)*, a dummy variable which indicate whether each country in the sample based their fundamental law on Sharia law or common law. The SHAREG dummy variable takes the value of 1 if the country uses Sharia law as its fundamental law and 0 if otherwise. *Islamic Regulatory Framework (ISBANKREG)* as a dummy variable shows whether each country has a separate regulatory framework specifically tailored for Islamic banks and/or distinguishes Islamic banks distinct operations within a single conventional regulatory framework. If so, the *ISBANKREG* dummy variable takes a value of 1 and if there is no distinction of Islamic banks in the banking regulatory framework at all, the dummy variable will take a value of 0. *National Sharia Supervisory Authority (NATSSB)* used as a dummy variable to indicate whether there is a Sharia supervisory authority that supervises Islamic Banks' Sharia-compliance on a national scale. while $SSB_{ik,t}$ measures the number of Sharia scholars in the Sharia supervisory board of bank k in country i for the time period t. The estimation or equation stated above will regress the determinants of Islamic banks' performance on all Islamic banks under both regions, the GCC and Asia using all two proxies for the dependent variable (performance) namely return on assets (ROA) as PERF1 and non-interest net revenue (NNIR) as PERF2. A outline of the different estimations for the analysis is presented in Table 5.

4. Empirical findings and policy recommendations

4.1. Descriptive statistics

Table 6 represents the summary statistics for all variables that are listed in both the samples. It can be seen that the standard deviation for the variables are quite large, these large values in standard deviations indicate that it is in fact important to control for bank-specific, macroeconomic and financial

Table 6
Summary statistics.

Summary Statistics for All Variables in GCC Sample					
Variable	N	Mean	Std. Dev.	Minimum	Maximum
PERF1	358	0.986049	0.08665293	−0.5909091	0.3825018
PERF2	355	45.00366	52.67317	−454.32	369.23
SIZE	349	7.823821	1.672519	3.490429	11.31516
CAPITAL	361	0.3640361	0.2992902	0.0634117	0.9977765
CONCENTRATION	315	73.93618	13.68141	44.0874	90.38332
GDP	440	5.49276	4.666167	−7.076103	26.1704
INLFATION	450	3.745213	3.401243	−4.863278	15.05015
GFC	450	0.2	0.4004452	0	1
BANKBASED	273	65.02213	30.70535	26.97095	133.3709
COMPETITION	315	0.424947	0.0926824	0.251681	0.624157
SHARIAREG	450	0.3777778	0.4853713	0	1
ISLAMBANKREG	450	0.6888889	0.4634634	0	1
SSB	426	3.539906	1.174054	0	6
NATSSB	450	0.3555556	0.4792141	0	1
Summary Statistics of All Variables in SSA Sample					
PERF1	266	0.0071463	0.0340028	−0.2577872	0.2103702
PERF2	262	24.57634	24.15933	−27.69	151.46
SIZE	261	6.697584	1.769628	2.117889	10.05604
CAPITAL	274	0.1496076	0.2104657	−0.7721086	1
CONCENTRATION	301	52.78677	13.2749	31.94732	76.21074
GDP	430	5.175295	1.853389	−1.513685	7.667304
INLFATION	430	6.060357	3.957934	0.5833084	20.28612
GFC	430	0.2	0.4004659	0	1
BANKBASED	301	58.85977	36.92127	18.04864	107.5882
COMPETITION	301	0.1996239	0.1258795	−0.012145	0.466163
SHARIAREG	430	0.1860465	0.3895975	0	1
ISLAMBANKREG	430	0.8372093	0.3696046	0	1
SSB	330	5.212121	2.629706	1	12
NATSSB	430	0.8372093	0.3696046	0	1

development variables in order to obtain a more accurate interpretation of the effects Islamic banking regulatory variables have on Islamic banks' performance.

Referring to, the mean for SIZE, GDP, and BANKB for both regions do not vary substantially. In other words, Islamic banks' size, both regions' GDP annual growth and the development of Islamic banking industry for both the GCC and SSA region are somewhat at the same level. However, looking at the mean for variable CAP, which resembles how well capitalized Islamic banks are, it is shown that Islamic banks in the GCC holds more excess capital in comparison to Islamic banks in the SSA region on average. In addition, GCC's bank concentration (CONC) is also shown to be much higher than SSA region, meaning that there is a smaller amount of Islamic banks in GCC but they are large in size. Table 6 also indicates that the development of banking industry (BANKB) is much higher in the GCC region. However, a lower value of BANKB for the SSA region indicates that SSA region has a much more developed stock market. Finally, the summary statistics showed that there are roughly four Sharia board members appointed in the GCC while roughly five are appointed in Islamic banks in SSA region.

In order to assess the model goodness of fit, Wald test was conducted. Significance of the Wald test indicates that the null hypothesis that the coefficients are simultaneously equal to zero is rejected. The Wald test is consistently significant for all panels in both categories, except Panel 2 (Determinants of Islamic Banks' Non-interest Net Revenue), which is why it will be excluded from being analysed. The Arellano-Bond tests for serial autocorrelation for the first (AR1) and second order (AR2) autocorrelation were also conducted. There is no presence of serial autocorrelation in all models estimated. The results for the Wald tests and Arellano-Bond tests conducted for each model are presented at the bottom of each model for all the panels. As for the over-identifying restrictions, Sargan & Hansen joint tests are applied and reported in the GMM estimation to indicate the validity of instrumental variables with the objective of making sure that they are not endogenous to the differences of the error term. A valid instruments is a high p-value of the Hansen J statistic of at least 0.25 (Roodman, 2009).

4.2. Empirical analysis on estimations under category A

4.2.1. Empirical analysis on determinants of Islamic Banks' performance in the Gulf Cooperation Council (GCC)

According to Table 7, the lagged dependent variable is consistently and highly significant at 1% throughout all the models. This suggests that the specification of this model is dynamic and that performance or profitability of Islamic banks

Table 7
Panel 1: Determinants of Islamic Banks' Return on Assets: System GMM two-step.

Variables	Model Specification															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L.PERF1	**0.61*** **	**0.60*** **	**0.58*** **	**0.58*** **	**0.61*** **	**0.60*** **	**0.60*** **	**0.58*** **	**.65*** **	**.64*** **	**.62*** **	**.62*** **	**0.65*** **	**0.65*** **	**0.63*** **	**0.61*** **
	(.09)	(.09)	(.09)	(.09)	(.09)	(.08)	(.09)	(.11)	(.10)	(.10)	(.11)	(.10)	(.11)	(.11)	(.11)	(.10)
SIZE	2.20	1.43	0.59	0.65	2.19	1.30	0.09	0.52	–	–	–	–	–	–	–	–
	(3.76)	(2.58)	(2.42)	(2.96)	(3.85)	(2.82)	(2.20)	(2.88)								
CAP	−9.25	−9.67	−1.56	−3.48	−11.04	−11.86	−6.70	−5.98	−9.74	−10.11	−4.01	−2.11	−10.40	−11.86	−5.44	−2.55
	(7.52)	(8.12)	(16.62)	(12.76)	(7.60)	(6.64)	(10.76)	(12.00)	(8.51)	(11.02)	(8.347)	(5.25)	(8.46)	(9.91)	(10.24)	(6.36)
CONC	–	–	–	–	–	–	–	–	−.21	−.18	−.10	−.10	−0.18	−0.14	−0.09	−0.13
									(.13)	(.16)	(.12)	(.10)	(.16)	(.15)	(.10)	(.14)
GDP	0.10	0.09	0.10	0.11	–	–	–	–	−.03	−.05	.03	.02	–	–	–	–
	(.11)	(.12)	(1.12)	(.16)					(.11)	(.11)	(.15)	(.18)				
INFL	–	–	–	–	−0.10	−0.11	−0.20	−0.21	–	–	–	–	−0.22	−0.20	−0.20	−0.29
					(.25)	(.25)	(.22)	(.19)					(.12)	(.18)	(.17)	(.20)
GFC	−1.45	−1.16	−0.59	−0.84	−1.06	−0.71	0.40	0.21	−.92	−.83	−.36	−.37	0.00	0.13	0.49	0.65
	(1.70)	(1.61)	(1.16)	(1.44)	(2.37)	(2.56)	(1.66)	(1.49)	(1.16)	(1.45)	(1.06)	(.92)	(1.47)	(1.71)	(1.36)	(1.10)
BANKB	**−0.08***	**−0.09***	−0.08	−0.08	**−0.09***	**−0.10** **	**−0.09*** **	**−0.08** **	**−.13*** **	**−.13*** **	**−.10***	**−.10**	**−0.11*** **	**−0.11*** **	**−0.10***	**−0.09***
	(.04)	(.050)	(.056)	(.06)	(.04)	(.044)	(.039)	(.042)	(.047)	(.044)	(.07)	(.06)	(.039)	(.04)	(.056)	(.051)
COMP	−2.22	2.75	4.36	3.28	−5.97	−1.69	1.75	−2.31	8.92	10.33	7.40	4.98	7.5	6.98	6.48	2.02
	(23.14)	(17.95)	(15.57)	(20.55)	(18.09)	(14.20)	(14.84)	(22.17)	(12.17)	(12.00)	(12.08)	(11.38)	(10.81)	(10.33)	(11.08)	(11.81)
SHAREG	−9.69	–	–	–	−10.29	–	–	–	−8.79	–	–	–	−8.08	–	–	–
	(14.21)				(12.40)				(5.13)				(6.01)			
ISBANKREG	–	10.80	–	–	–	10.58	–	–	–	11.63	–	–	–	10.90	–	–
		(14.99)				(11.46)				(11.84)				(11.31)		
SSB	–	–	1.38	–	–	–	0.84	–	–	–	−1.22	–	–	–	−1.45	–
			(5.15)				(3.85)				(3.74)				(4.54)	
NATSSB	–	–	–	0.36	–	–	–	2.36	–	–	–	2.07	–	–	–	3.72
				(4.76)				(6.57)				(3.68)				(5.17)
Wald test	16.65***	13.29***	21.92***	21.06***	14.68	14***	16.02***	15.46***	13.06***	16***	13.97***	16.97***	14***	18.9***	12.25***	13.86***
AR (1)	−1.58	−1.57	−1.48	−1.52	−1.58	−1.57	−1.48	−1.46	−1.88	−1.8867	−1.85	−1.84	−1.86	−1.86	−1.85	−1.81
AR (2)	0.45	0.45	0.45	0.45	0.457	0.44	0.43	0.42	0.49	0.47	0.35	0.32	0.54	0.53	0.43	0.40
Hansen J	0.27	0.35	0.26	0.35	0.34	0.28	0.27	0.32	0.45	0.51	0.38	0.27	0.61	0.29	0.28	0.27
No. of Observation	171	171	167	171	171	171	167	171	181	181	177	181	181	181	177	181
No. of Islamic Banks	40	40	39	40	40	40	39	40	41	41	40	41	41	41	40	41

*, **, *** significance at 10%, 5% and 1% respectively. standard errors are in parentheses.

Table 8
Panel 2: Determinants of Islamic Banks' Non-interest Income Ratio: System GMM two-step.

Variables	Model Specification															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L.PERF2	0.15	0.22	0.102	0.276**	0.14	0.21	0.08	0.26*	0.11	0.16	0.07	0.24**	0.12	0.16	0.07	0.23**
	(.19)	(.33)	(.19)	(.11)	(.21)	(.35)	(.21)	(.14)	(.18)	(.16)	(.18)	(.10)	(.17)	(.16)	(.18)	(.09)
SIZE	16.14	36.80	8.40	7.32	18.67	38.55	4.63	5.72								
	(15.89)	(37.61)	(20.10)	(14.85)	(27.25)	(30.15)	(2910)	(18.08)								
CAP	10.27	79.67	77.28	84.87	90.56	10.38	89.45	57.27	24.72	16.57	60.90	58.84	23.16	−8.65	62.99	36.45
	(93.30)	(13.73)	(10.04)	(90.52)	(12.87)	(13.94)	(11.64)	(97.34)	(11.80)	(69.94)	(91.44)	(94.58)	(12.27)	(91.37)	(13.71)	(95.55)
CONC									−0.94	−0.82	−0.86	−0.56	−0.96	−0.82	−1.25	−0.78
									(1.16)	(1.11)	(1.197)	(1.21)	(1.11)	(1.26)	(1.35)	(1.24)
GDP	1.05	0.97	0.93	1.43					0.12	0.08	0.47	0.80				
	(.98)	(1.18)	(1.08)	(1.08)					(1.07)	(.82)	(1.06)	(1.25)				
INFL					1.67	1.60	1.59	1.12					1.21	0.79	1.33	0.53
					(1.07)	(1.47)	(1.13)	(1.03)					(.86)	(.86)	(1.04)	(1.11)
GFC	−2.55	−13.35	−0.37	−3.33	−10.43	−18.27	−4.698	−7.81	1.36	0.96	4.87	2.14	−1.72	−2.72	1.71	−0.86
	(7.31)	(17.24)	(7.79)	(5.79)	(91.0)	(16.65)	(19.35)	(9.29)	(6.74)	(6.64)	(3.72)	(5.04)	(9.53)	(9.04)	(6.42)	(7.22)
BANKB	0.02	−0.00	0.02	0.19	−0.12	−0.16	−0.08	0.00	−0.07	−0.07	−0.03	0.09	−0.09	−0.05	−0.09	−0.02
	(.19)	(.25)	(.26)	(.29)	(.18)	(.23)	(.17)	(.27)	(.17)	(.18)	(.19)	(.31)	(.19)	(.20)	(.21)	(.31)
COMP	−82.14	−19.98	−58.54	−88.83	−48.51	−13.88	−4.40	−61.89	22.96	2.18	42.42	−12.32	52.37	−3.03	89.26	12.45
	(81.72)	(18.31)	(11.77)	(72.94)	(16.61)	(16.78)	(18.65)	(13.65)	(13.24)	(90.62)	(96.17)	(80.91)	(16.52)	(12.56)	(14.03)	(13.36)
SHAREG	−21.68				−22.93				−19.07				−22.24			
	(26.13)				(25.96)				(19.13)				(24.16)			
ISBANKREG		36.72				37.62				3.14				20.82		
		(79.90)				(75.13)				(32.00)				(28.51)		
SSB			−11.26				−10.30				−96.24				−91.80	
			(10.66)				(15.26)				(86.57)				(76.78)	
NATSSB				14.93				97.76				12.99				92.57
				(98.36)				(82.69)				(10.74)				(83.40)
Wald test	3.71	4.3	5.88	11.8	8.81	6.69	12.77	10.54	3.56	3.69	18.24**	7.62	5.66	3.56	15.83**	9.46
AR (1)	−1.70	−1.35	−1.68	−1.83	−1.58	−1.29	−1.60	−1.76	−1.67	−1.71	−1.68	−1.86	−1.66	−1.65	−1.65	−1.81
AR (2)	−0.22	−0.15	−0.38	0.08	−0.33	−0.19	−0.44	−0.09	−0.46	−0.39	−0.48	−0.07	−0.45	−0.39	−0.5	−0.18
Hansen J	0.41	0.52	0.36	0.28	0.49	0.41	0.28	0.38	0.39	0.52	0.47	0.29	0.31	0.47	0.28	0.26
No. of Observation	167	167	163	167	167	167	163	167	177	177	173	177	177	177	173	177
No. of Islamic Banks	39	39	38	39	39	39	38	39	40	40	39	40	40	40	39	40

*, **, *** significance at 10%, 5% and 1% respectively. standard errors are in parentheses.

Table 9
Panel 3: Determinants of Islamic Banks' Return on Assets: System GMM two-step.

Variables	Model Specification															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L.PERF1	−0.10	−0.11	−0.15	−0.11	−0.10	−0.10	−0.16	−0.10	−.07	−0.08	−0.13	−0.08	−0.06	−0.09	−0.14	−0.09
	(.23)	(.19)	(.21)	(.19)	(.24)	(.19)	(.22)	(.19)	(.22)	(.22)	(.23)	(.22)	(.20)	(.22)	(.23)	(.22)
SIZE	0.01	**0.01**** (.00)	**0.02***** (.00)	**0.01**** (.00)	0.01	**0.01***	**0.02***** (.00)	**0.01**** (.00)								
	(.01)				(.01)	(.00)										
CAP	**0.11***** (.03)	0.08	**0.15***** (.03)	0.08	**0.11***** (.03)	0.07	**0.15***** (.03)	0.07	**0.08**** (.04)	0.07	**0.14***** (.02)	0.07	**0.09***	0.07	**0.15***** (.02)	0.07
		(.05)		(.05)		(.05)		(.05)		(.05)		(.05)	(.04)	(.05)		(.05)
CONC									0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
									(.00)	(.00)	(.00)	(.00)	(.00)	(.00)	(.00)	(.00)
GDP	0.00	−0.00	−0.00	−0.00					0.00	−0.00	0.00	−0.00				
	(.00)	(.00)	(.00)	(.00)					(.00)	(.00)	(.00)	(.00)				
INFL					0.00	−0.00	−0.00	−0.00					−0.00	0.00	−0.00	0.00
					(.00)	(.00)	(.00)	(.00)					(.00)	(.00)	(.00)	(.00)
GFC	0.00	0.00	0.00	0.00	0.00	0.00	0.008	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	(.00)	(.00)	(.00)	(.00)	(.01)	(.00)	(.00)	(.00)	(.00)	(.00)	(.00)	(.00)	(.00)	(.00)	(.00)	(.00)
BANKB	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00***	0.00	0.00	0.00
	(.00)	(.00)	(.00)	(.00)	(.00)	(.00)	(.00)	(.00)	(.00)	(.00)	(.00)	(.00)	(.00)	(.00)	(.00)	(.00)
COMP	−0.02	−0.00	−0.01	−0.00	−0.02	−0.00	−0.02	−0.00	−0.01	0.00	−0.01	0.00	−0.01	−0.00	−0.01	−0.00
	(.02)	(.02)	(.02)	(.02)	(.02)	(.01)	(.02)	(.01)	(.02)	(.03)	(.03)	(.03)	(.01)	(.02)	(.02)	(.02)
SHAREG	**0.12***				**0.11***				0.13				0.13			
	(.06)				(.06)				(.10)				(.09)			
ISBANKREG		0.07				0.07				**0.09***				**0.08***		
		(.05)				(.06)				(.05)				(.04)		
SSB			0.00				0.00				0.00				0.00	
			(.01)				(.01)				(.00)				(.00)	
NATSSB				0.07				0.07				**0.09***				**0.08***
				(.05)				(.06)				(.05)				(.04)
Wald test	29.38***	75.12***	68.39***	75.12***	47.8***	95.32***	69.83***	95.32	31.8***	15.37***	14.06***	15.37***	63.87***	11.72***	11.99***	11.72***
AR (1)	0.53	0.56	0.51	0.56	0.54	0.50	0.53	0.50	0.49	0.47	0.72	0.47	0.50	0.49	0.75	0.49
AR (2)	−1.31	−1.42	0.26	−1.42	−1.28	−1.29	−1.10	−1.29	−1.22	−0.94	−1.03	−0.94	−1.32	−0.87	−0.83	−0.87
Hansen J	0.44	0.35	0.0.58	0.52	0.48	0.44	0.32	0.38	0.56	0.51	0.51	0.47	0.46	0.33	0.28	0.43
No. of Observation	152	152	134	152	152	152	134	152	158	158	140	158	158	158	140	158
No. of Islamic Banks	32	32	27	32	32	32	27	32	33	33	28	33	33	33	28	33

*, **, *** significance at 10%, 5% and 1% respectively. standard errors are in parentheses.

is very persistent, considering that the value of the coefficient is between 0.58 and 0.65. However, this is not true for the case of Panel 2 (Panel 2 uses Non-interest Net Revenue as the proxy for Islamic banks' performance) in Table 8. Without consistent significance in Wald test and independent variables throughout the models in Panel 2, panel 2 will not be analysed. The purpose of running 16 models for each panel is to observe which variables are consistently significant in order to make a robust statistical inference. Based on empirical findings, the two determinants that are important in determining the performance of Islamic banks are the competitiveness of the Islamic banking industry and how developed the banking or stock market industry is. These findings will be further analysed below.

Referring to Panel 1, the variable BANKB is consistently significant at least at 10% and it presents negative coefficients between the value of −0.08 and −.13 throughout Panel 1. In other words, large development in only the banking industry operating within GCC is having an adverse impact on the Islamic banks' performance or profitability. It also implies that the stock market development in GCC is not up to par. Generally, the development of stock market is a measure of how well developed a nation's financial structure is. This notion was also presented by Demirguc-Kunt and Huizinga (2001), whereby they suggested that development in stock market could enhance the performance of banks in countries that have lower levels of financial development. In the GCC, stock market development is minute in comparison to the world; shares of equity, debt, and banking assets only take up roughly about 1.5% of the world's total equity market capitalization (Kern, 2012). In addition, not all countries within the GCC are participating in stock trading actively and equally because about 80% of stocks traded in value are dominated by KSA and this causes concerns about liquidity especially in countries such as Bahrain, Kuwait and UAE (Kern, 2012). If the GCC wants to see a favourable shift in their Islamic banking industry, they should focus on flourishing their stock market industry in order to allow investors to be able to diversify their portfolios. Not only that, but the growing stock market industry will also simultaneously impose higher competition on Islamic banks to perform more efficiently by providing competitive prices of financial services/products to customers.

Due to immature stock market development, despite the wealth of these oil-exporting countries, they can still be considered to not yet having a fully developed financial market, especially because banking operations initially started about forty years ago with GCC's involvement with The World Bank, starting with The World Bank providing advisory services for KSA (Mohammad, Ramadan, & Al-Kibbi, 2015). Similarly, Islamic banking operations began around the same time with inception of Dubai Islamic Bank in the year of 1975 (Wilson, 2009). The problem with the banking industry in the GCC is that because they are oil-exporting countries, they are heavily dependent on the movement of oil prices and they suffer from lack of diversification. As mentioned by Gray and Blejer (2007), the development and strength of GCC's financial structure depends not only on its ability to diversify economically, but it also depends on how the GCC will manage their petrochemical resources in the time to come. This gives the GCC a distinct feature in promoting stock market development because it is found that specifically in the GCC region, stock market activities are highly correlated to pronounced movement in oil prices (Gray & Blejer, 2007). This notion can be backed by recent news in the GCC stock market whereby KSA and UAE's stock market made a speedy recovery from previous week's huge market sell-off due to declining oil prices. Investors instantaneously gained back their confidence from the rise in crude oil prices (GulfBase, 2015). This situation illustrates how oil pricing dominates investors' sentiment particularly in the GCC region.

A main obstacle to overcome here is that under an Islamic stock market, the stocks traded must be Sharia-compliant. Sharia-compliant stocks are an issue because of the different Sharia stock screening methodologies that are being implemented worldwide. Stocks that are Sharia-compliant in other nations may not be Sharia-compliant in the GCC. To name a few, Dow Jones Islamic Market Index (DJIMI), FTSE Global Islamic Index Series, S&P 500 and Morgan Stanley Capital International (MSCI) are some of the indices that provide information on whether stocks are Sharia-compliant (Sengupta, 2012). Different types of screening criteria exist due to different level of acceptance caused by varying environmental and locational factors, including the existence of different Islamic schools of taught (Adam & Abu Bakar, 2014). Inconsistencies can originate due to the act of Sharia scholars from different parts of the world passing rulings in certain territories for the benefit of the people *(Maslahah)* residing there. From another perspective, norms for equity screening could be formulated or manipulated to better suit the index providers according to their intention. For instance, Sharia index providers are concerned with stocks that are being traded at a high volume because these stocks will reflect the market condition well. Therefore, this notion explains why some indices like DJIM are interested in the market capitalization of a company instead of its total assets (Khatkhatay & Nisar, 2007). Even if these screening norms are questionable, there are no superior boards of authority powerful enough on an international scale to discontinue these screening methods and also for most of the time, these rulings are passed with the ground of providing *Maslahah* according to jurisdiction.

One of the most highly debated topics is that Sharia-compliant companies should not be allowed to have any elements that are knowingly prohibited like *Riba, Maysir and Gharar.* However, these elements are still allowed to be present in companies because the presence of conventional operations is too dominant in the market today. As stated by Khatkhatay and Nisar (2007), a business that is truly and fully Sharia-compliant is rare to find in the commercial business world today. Yazi, Morni, and Imm (2015) found that the demand for recently de-listed Sharia-compliant stocks decreases, causing the company's share price to also decline.

Different users of these screening processes have different objectives leading to inconsistent Sharia-compliance screening

Table 10
Panel 4: Determinants of Islamic Banks' Non-interest Income Ratio: System GMM two-step.

Variables	Model Specification															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L.PERF2	**0.83*****	**0.79*****	**0.79*****	**0.79*****	**0.81*****(.06)	**0.78*****	**0.78*****	**0.78*****	**0.87*****	**0.89*****	**0.82*****	**0.89*****	**0.87*****	**0.87*****	**0.83*****	**0.87*****
	(.05)	(.06)	(.05)	(.06)		(.06)	(.06)	(.06)	(.06)	(.05)	(.08)	(.05)	(.05)	(.05)	(.07)	(.05)
SIZE	−4.49	−5.63	−4.52	−5.63	−5.27	**−5.85***	−3.65	**−5.85***								
	(4.18)	(5.22)	(5.53)	(5.22)	(4.15)	(3.45)	(5.27)	(3.45)								
CAP	−38.91	−39.70	−35.43	−39.70	−41.87	−42.91	−38.77	−42.91	−30.30	−27.16	−20.63	−27.16	−29.96	−29.49	−29.60	−29.49
	(59.38)	(46.24)	(41.17)	(46.24)	(55.16)	(39.30)	(40.13)	(39.30)	(51.17)	(57.34)	(31.10)	(57.34)	(43.51)	(35.54)	(38.46)	(35.54)
CONC									0.15	0.04	0.12	0.04	0.06	0.02	−0.03	0.02
									(.17)	(.15)	(.26)	(.15)	(.14)	(.12)	(.13)	(.12)
GDP	0.58	0.80	0.66	0.80					0.59	0.20	0.93	0.20				
	(.90)	(.63)	(.59)	(.63)					(1.23)	(1.2)	(1.13)	(1.22)				
INFL					**−1.08****	**−1.07****	**−1.48****	**−1.07****					**−0.90****	**−0.84****	**−1.69****	**−0.84****
					(.53)	(.39)	(.49)	(.39)					(.49)	(.40)	(.44)	(.40)
GFC	3.43	2.28	3.32	2.28	6.33	5.20	7.54	5.20	3.29	2.81	3.48	2.81	5.37	4.01	8.35	4.01
	(4.64)	(3.81)	(4.61)	(3.81)	(5.17)	(3.86)	(5.01)	(3.86)	(4.72)	(4.27)	(4.52)	(4.27)	(5.22)	(4.10)	(5.61)	(4.10)
BANKB	0.80	0.57	0.64	0.57	0.60	0.36	0.46	0.36	0.60	0.07	0.68	0.07	0.39	−0.00	0.53	−0.00
	(.63)	(.45)	(.48)	(.45)	(.44)	(.26)	(.39)	(.26)	(.57)	(.24)	(.71)	(.24)	(.34)	(.21)	(.45)	(.21)
COMP	−10.10	−4.82	−10.72	−4.82	2.93	7.30	2.77	7.30	−13.72	−3.994	−18.76	−3.99	−3.72	0.84	−4.58	0.84
	(15.63)	(19.38)	(18.95)	(19.38)	(14.87)	(14.35)	(14.78)	(14.35)	(16.77)	(18.74)	(18.49)	(18.74)	(14.61)	(14.91)	(13.93)	(14.91)
SHAREG	33.62				28.20				43.58				35.76			
	(32.71)				(21.43)				(39.67)				(22.83)			
ISBANKREG		18.27				17.59				27.39				29.33		
		(34.70)				(29.06)				(32.00)				(26.04)		
SSB			−4.19				−5.93				−8.34				−8.79	
			(6.96)				(6.65)				(9.86)				(6.39)	
NATSSB				18.27				17.59				27.39				29.33
				(34.70)				(29.06)				(32.00)				(26.04)
Wald test	690***	254.92***	373.77***	254.92***	381.81***	199.87***	290.26***	199.87***	494.26***	406.69***	225.92***	406.69***	481.38***	401.9***	223.09***	401.9***
AR (1)	−1.7098	−1.726	−1.7275	−1.726	−1.5307	−1.5105	−1.4996	−1.5105	−1.7385	−1.7786	−1.7383	−1.7786	−1.6067	−1.6205	−1.5017	−1.6205
AR (2)	−1.5355	−1.4377	−1.4921	−1.4377	−1.5555	−1.5105	−1.4995	−1.5105	−1.568	−1.5047	−1.5085	−1.5047	−1.5804	−1.5218	−1.5004	−1.5218
Hansen J	0.32	0.31	0.41	0.36	0.28	0.35	0.53	0.52	0.46	0.36	0.47	0.29	0.37	0.31	0.53	0.58
No. of Observation	143	143	127	143	143	143	127	143	150	150	134	150	150	150	134	150
No. of Islamic Banks	31	31	27	31	31	31	27	31	33	33	29	33	33	33	29	33

*, **, *** significance at 10%, 5% and 1% respectively. standard errors are in parentheses.

methodologies. Inconsistencies result in adverse reaction from the investors and affect the perception of the market negatively. With this said, indices providing Sharia-compliance screening should work together to form a standardized screening methodology in order to enable Islamic stock markets to grow not only within the GCC but on a global scale. Additionally, the remaining countries in the GCC apart from KSA and UAE must also pick up their pace in expanding their stock market development instead of allowing only KSA and UAE to represent the whole GCC nation. As of 2013, KSA and UAE possess more than half of the wealth in the GCC nation; 44% and 30% respectively (Strategy 2015). In other words, the performance of Islamic banks in the whole GCC nations is represented primarily by KSA then UAE.

4.2.2. Empirical analysis on determinants of Islamic Banks' performance in South/Southeast Asia (SSA)

As mentioned before, the reason behind conducting 16 models under each proxy for Islamic banks' performance is to observe which variables are producing consistent significant results as a measure of robustness. Since the Wald test is consistently significant for all models under both proxies of Islamic banks' performance, Panel 3 (ROA) and Panel 4 (NINR) both will be analysed.

According to Table 9, whereby return on assets (ROA) is used as the proxy for Islamic banks' performance, there are five positive significant variables that determine the performance of Islamic banks in the SSA; they are SIZE, CAP, SHAREG, ISBANKREG and NATSSB. Starting with SIZE, it is found to be significant almost consistently throughout the eight models under Panel 3, with coefficients ranging between 0.01 and 0.02. The results obtained are consistent with studies by; (Smirlock, 1985), (Ben Naceur & Goaied, 2008), (Flamini et al., 2009) and (Nguyen, Skully, & Perera, 2012). This result is however contradicting with other studies that claimed to find no relevant connection between bank size and bank profitability (performance) such as (Athanasoglou et al., 2008); and (Ben Naceur & Kandil, 2009). An explanation behind why Islamic banks' size is positively related to its performance could be due to that larger bank size allows Islamic banks to take advantage of economies of scale and scope (Athanasoglou et al., 2008). There are also theories suggesting that larger banks perform better because their fairly large size allows them to diversify their portfolio risks away, but in the case of Islamic banks, diversifying is a limited option because it is challenging to find investment options that are Sharia-compliant. According to Ben Naceur and Kandil (2009), bank size can also propose the degree of monopoly that exists within a country's banking industry. They claimed that as the size of the banks increase, it also increases their monopoly power, allowing them to charge a higher cost of financing thus increasing their profitability.

Table 10 indicates that the variable CAP is positively and significantly related to Islamic banks' performance in SSA almost consistently with at least 10% significance throughout half of the tested models in Panel 4; with a coefficient ranging between 0.088 and 0.153. An explanation to this finding is that well-capitalized Islamic banks tend to perform better, a finding supported by Wahidudin, Subramanian, Kamaluddin, & Bahari (2014) and Flamini et al. (2009). In reality there is always a presence of information asymmetry, and according to Athanasoglou et al. (2008) and Berger (1995), with information asymmetry present, banks can use the excess capital to inform or signal customers that the bank is promising a better future performance. An issue worth mentioning is that the new Basel III Accord that is in the process of being implemented might cause trouble for Islamic banks even if they are well capitalized because regulators now need to further clarify the proper allocation of capital under Tier 1 and Tier 2 capital, especially with the use of unique Islamic financial contracts. Additionally, under the new Basel III Accord, there is a requirement for Liquidity Coverage Ratio and this may be problematic to Islamic banks because there is insufficient amount of Sharia compliant liquidity assets (Kammer et al., 2015, p. 38). A suggestion for Islamic banks is to postpone the implementation of the conventional BASEL III until IFSB or AAOIFI publish a modified version of the Basel III Accord so that the implementation of these capital adequacy requirements are more suitable specifically for operations of Islamic banks.

Panel 3 results also show that the variable SHAREG is only positive and significant at 10% when SIZE is taken into account. However, when the variable SIZE was eliminated and the variable CONC was controlled for (from model 9 through 12 in Panel 3), the variable SHAREG becomes irrelevant. Instead, variables ISBANKREG and NATSSB become positively significant. To begin, it is worthy to mention that all these variables produced a significant and positive coefficient, indicating that Islamic regulatory variables have a favourable effect on Islamic banks' performance in SSA. In other words, in order for Islamic banks to perform better, appropriate Islamic banking regulations must be in place. The variable SHAREG shows a positive and significant coefficient between 0.119 and 0.115. This finding confirms that an Islamic bank that is operating in a country whereby Sharia is its fundamental law, within the SSA region, has a significantly positive effect on its performance. An explanation could be that regulations imposed in the country is already naturally designed to fit the operations of Islamic banks, without the need to specify further regulations for banks to abide behind the tenets of Sharia principles. This notion can be illustrated under the findings in Panel 3 (model 1 until model 8); when the variable SHAREG is significant and positive, all the other variables representing the breakdowns of Sharia regulatory related variables are not relevant. In a different situation whereby utilization of Sharia as their fundamental rule of law is irrelevant (Model 13 Panel 3), variable SHAREG becomes insignificant while the remaining breakdowns of Sharia regulatory related variables become significant (refer to model 9 through model 16 in Panel 3).

Since the finding suggests that if it is not relevant for a country to base its fundamental law on Sharia or in other words countries that solely view Islamic banking as an alternative resulting from banking innovation, then the country

needs to implement various Islamic banking regulations. Out of the four countries selected to be under the SSA sample, only Malaysia has established separate acts for Islamic banking such as the Islamic Banking Act 1983 and Islamic Financial Services Act 2013. The remaining countries are yet to move forward and pass an entirely separate act for Islamic banking purposes. Without these acts, Islamic banks are undoubtedly facing extreme pressure to perform alongside conventional banks which is problematic considering that Islamic banking is still in its growing phase. It also worth noting that the variable SSB is not consistently significant, in other words, the number of Sharia scholars sitting on the Sharia board does not affect the performance of Islamic banks in the SSA region. A possible explanation behind this finding is that, even if the central banks in the SSA region imposed a regulation that each bank needs a minimum of three Sharia scholars on the Sharia board (Malkawi, 2014), this still does not suggest that these Sharia board members will favourably affect the Islamic banks' performance. There are many other qualifications and characteristics of these Sharia members that need to be considered such as age, qualification, experience, nationality and etc. (Malkawi, 2014). This is the reason behind why Bank Negara Malaysia require the Sharia board members to be comprised of not only Sharia scholars, but also a chartered accountant, lawyer, central banker and judge because a Sharia board with this composition will be able to not only solve issues relating to Sharia compliance but also issues relating to legal and financial aspects of the Islamic bank (Hasan, 2010).

Similarly, the variable NATSSB represents whether a country is having a Sharia supervisory authority on a national scale and it proved to be beneficial to the performance of Islamic banks in SSA, as agreed by Hasan (2010). One way to interpret this finding is that, monitoring of Islamic banks to ensure that they are Sharia compliant could be very costly and difficult to monitor, which is why granting power to a national Sharia supervisory board can eliminate this problem. Not to mention that it will ensure standardization of Sharia compliant activities throughout a nation. This could be the first step prior to globally standardizing Sharia compliant regulations, starting with forming a Sharia supervisory board on a national scale, then regional and in due time, on a global scale. However, there is the issue of supervisors taking advantage of their power to indulge in personal benefits especially due to lack of Sharia scholars available at present time (Djankov, La Porta, Lopez-de-Silanes, & Shleifer, 2002) and (Quintyn & Taylor, 2002). This is where stressing the accountability of these Sharia members comes into play. A case in point is Malaysia, the Islamic Financial Services Act 2013 stated that if Sharia members fail to comply with the provided regulations, they can be jailed maximum eight years or fined up to USD 7.5 million (Liau, 2013). An implication of not having appropriate supervisory boards could result in massive corruption. For instance, in Bangladesh, Oriental Bank which was a Sharia-based bank was found to be massively corrupted through the embezzlement of money (Rahman, 2008). This form of incident can be avoided when there are many layers of Sharia boards to screen through. With the establishment of a national Sharia supervisory board, Islamic bank activities would have to be screened by internal Sharia members, external or independent Sharia members and lastly by the national Sharia supervisory board. This makes it difficult for corruption to occur and it also strengthens customers' confidence in Islamic banking.

5. Conclusion

The main aim of this study is to highlight the significance of regulatory frameworks and the importance of utilizing these frameworks to implement Islamic banking standards in GCC and SSA region. In order for Islamic banks to gain more credibility and perform more efficiently they should expand through internalization. However, this is an issue considering that there are no sufficient and consistent Islamic banking regulations or standards that could fuel a successful internalization process. Due to this problem, the implications of varying Islamic banking regulations were highlighted across different region which is adding an obstacle to global expansion.

A major contribution to existing literature would be the heavy emphasis on the effects of varying Islamic banking regulations on Islamic banks' performance. Various new variables were introduced to control for many aspects relating to Islamic banking regulatory system. This paper also contributed to the literature by collating countries in order to compare how similar determinants affecting Islamic banks' performance differ in behaviour according to two separate regions, the GCC and SSA. The findings in this paper indicate that under the GCC region, two factors that are of importance which are competition and banking sector development. The variable representing competition uses the Lerner Index as a proxy, and the variable showed a positive and significant relationship with Islamic banks' performance. Results suggest that the GCC has a high market power in the banking industry which results in lower competition. The variable measuring the banking industry development shows a negative and significant relationship with Islamic banks' performance. This indicates that a development in stock market is vital in order to improve or optimize allocation of capital.

Different determinants were found to be of importance in the SSA region. Bank size and well capitalized banks show a positive and significant relationship with Islamic banks' performance. This suggests that large and well capitalized banks are capable of exploiting economies of scale and scope. An interesting finding of this paper is that, within the SSA region, when it is relevant for a country to use Sharia law as its fundamental law, there is no need for other more specific Islamic banking regulations such as separate legal acts on Islamic banking or a national Sharia supervisory board. However, these specific Islamic banking regulations are found to be of importance if it is not relevant for a country to be based on Sharia law. In countries whereby Sharia law is not used as the foundation of the ruling law, a separate legal act acknowledging Islamic banks could be very helpful in aiding Islamic banks to perform better

because by recognizing the difference in operations by Islamic banks, this allows Islamic banks to perform better at their own pace without facing fierce competition from its conventional counterparts. By understanding the operations behind Islamic banks through regulating standards, Islamic banks may decrease their risk of losing depositors or customers if they are not capable of providing a comparable rate of return. Another finding is that giving supervisory authority to a national Sharia board shows to be beneficial for Islamic banks' performance. An explanation could be that a national Sharia supervisory board can ensure consistent Sharia compliance in all Islamic financial activities. Not to mention that standardizing Sharia compliant activities within a nation brings the country one step closer to being able to rationalize Sharia compliance with other countries operating Islamic banking.

To sum up this paper, a noteworthy observation is that Islamic regulatory variables are only significant in the SSA region but not the GCC region. The reason behind this could be because interpretation of Sharia law is much more consistent within the GCC than it is within the SSA. Therefore, in order to standardize the standards regulating Islamic banks worldwide thus promoting the same level of performance for Islamic banks, this paper suggests that each policy should take into account how different factors affect different regions differently. As mentioned by Barth, Caprio Jr., & Levine (2004), there is no evidence of a set of practices that is best for promoting the performance of banks because the very same set of practices could behave differently under different institutional, macroeconomic, political and financial settings.

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