

FINANCIAL PERFORMANCE AND STABILITY IN ISLAMIC BANKS: EVIDENCE FROM GCC COUNTRIES

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Abstract

How to cite this paper: Alharthi, M. (2017). Financial performance and stability in Islamic banks: Evidence from GCC countries. *Corporate Ownership & Control*, 14(4), 103-113. <http://dx.doi.org/10.22495/cocv14i4art9>

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ISSN Online: 1810-3057
ISSN Print: 1727-9232

Received: 12.02.2017
Accepted: 18.04.2017

JEL Classification: G01, G21
DOI: 10.22495/cocv14i4art9

The main objective of this study is to find the determinants of financial performance and stability for Islamic banks in GCC countries during the period 2005-2014. In this study the profitability is represented as three main indicators: the return on assets (ROA), return on equities (ROE) and net interest margin (NIM). On the other side, the stability measures are z-score and capital ratio. The statistical methods in this paper are generalised least squares (GLS) and generalised method of moments (GMM). According to determinants of profitability, the size of and stability of Islamic banks supported the return significantly and positively. For the external variables, inflation decreased profitability significantly while market capitalisation has significant and positive effects on profits. Arab Spring only decreased the NIM significantly but other profitability ratios (ROA and ROE) have not been influenced by Arab Spring. For stability, the financial stability indicators (z-score and capital ratio) found to be strongly important to each other. Lending service supported the stability significantly but affected the capital ratio significantly and negatively. Moreover, the listed Islamic banks were more stable than the unlisted Islamic banks whereas, the listed banks had lower capitals. The strongest advantage in this study showed that Islamic banks in GCC countries were well capitalised by the period of Arab Spring. Generally, the global financial crisis has no effect upon financial performance and financial stability.

Keywords: Islamic Banks, Financial Performance, Financial Stability, Gulf Corporation Council, Arab Spring

1. INTRODUCTION

Recent studies have indicated that focusing on financial performance and financial stability in banking are critically significant to increase economic growth (Brighi & Venturelli, 2016; Adhikari & Agrawal, 2016). The financial evaluation of Islamic banks is extremely important due to high demand for Islamic banking services in Muslim and non-Muslim countries such as the United Kingdom as most customers prefer to deal with interest-free services. Based on the Malaysian International Islamic Financial Centre, the size (total assets) the Islamic financial industry exceeds 2 trillion USD scoring 17.3% in its total assets growth over the period 2010-2014 (Malaysia International Islamic Financial Centre, 2017). The banks in Gulf Council Countries (GCC)¹⁶ have exhibited that they can face the default risk due to support from the oil industry. The Islamic banks in GCC have more than 25% of its market share in the banking sector (IMF, 2017). Investigating the financial performance in the

banking sector in the most previous studies have helped the policy makers to identify the main determinants of profitability (e.g. Ashraf et al, 2016). Finding the determinants of profitability allow bankers to know what are reasons behind lowering the earnings. In this case, policymakers and bankers could apply more strategies to avoid loss. In addition, estimating the factors of the financial stability let banks stronger to face any crisis. The financial crisis could occur at any time from any reason thus, banks have to be ready for any crisis. As a result, investigating the determinants of profitability and stability in banking is highly important due to knowing the strength and weakness points of financial performance in the banking industry.

This study has several contributions to the literature review. The first contribution, this study includes the effect of the revelations in the Arabic world that occurred in 2011 (Arab Spring) on the profitability and stability of Islamic banks in GCC countries. Highly limited studies have concentrated on the effect of Arab Spring such as Ghosh (2016) study that examined the effect of Arab Spring on performance in Middle Eastern and North African

¹⁶ GCC countries includes seven countries as Bahrain, Kuwait, Oman, Qatar, Saudi Arabia and United Arab Emirates (UAE).

(MENA) region. The second contribution, this paper examines the impact of corruption control and the listing on financial markets upon on the profitability and stability in Islamic banks in GCC countries. The third contribution, the data is up to date period which covers an extensive period from 2005-2014. The fourth contribution, based on the researcher knowledge, there is no study using capital ratio as a stability indicator in Islamic banking.

This study attempts to find the important factors that support the returns and stability of Islamic banks in GCC region through the period 2005-2014. In this study, 18 Islamic banks in GCC are examined. For the financial performance, return on assets (ROA), return on equity (ROE) and net interest margin (NIM) are the main indicators. Regarding the financial stability, z-score and capital ratio are the dependent variables.

The paper is organised as follows: part 2 reviews the literature review. Part 3 indicates the data and methodology. Part 4 discusses the empirical results. Finally, part 5 illustrates the summary of the study.

2. LITERATURE REVIEW AND HYPOTHESES' FORMULATION

2.1. Literature review of profitability

Smaoui and Salah (2012) examined the profitability's determinants in GCC region including 44 Islamic banks over the period 1995-2009. The ROA, ROE and NIM were utilised as profitability indicators in this study. The main findings conclude that greater asset quality, capital and size lead to better profits. The macroeconomic variables in this study (GDP and inflation) have a positive and significant correlation with profitability. This study could be improved by analysing the impact of the global financial crisis on the Islamic banking system. Additionally, the researchers could compare Islamic financial performance with conventional banks to see the difference.

Wasiuzzaman and Tarmizi (2010) focused on the financial performance of 16 Islamic Malaysian banks over the period 2005-2008. The profitability ratio is represented by the return on average assets (ROAA), and OLS was used to find the determinants of ROAA. The empirical results in this study show that the positive determinants were found to be liquidity, operational efficiency, GDP and inflation, while asset quality and capitalisation affected the banking earnings inversely. The use of only one profitability indicator represents a weakness point in this study is neglecting the comparison between performance ratios.

Bashir (2003) considered ROA and ROE as dependent variables for Islamic banks to find the factors of profits in the Middle East during the period 1993-1998. Large capitalised banks attained better ROE but fewer ROA. In addition, foreign banks were likely to achieve better profits. The results also show that financial market structure is very important for profitability. Moreover, the taxation reduced the ROA and ROE significantly and badly. Finally, the inflation in the Middle East influenced the banking profits positively and significantly over the period 1993-1998.

Sufian and Habibullah (2010) examined the characteristics that affect bank performance in Malaysia over the period 1999-2007. The dependent variables are ROA and ROE while the independent variables are bank characteristics, economic

conditions and freedom standards. The fixed effects and generalised method of moments (GMM) regressions have been employed to find the determinants of performance. The outcomes of the regressions indicate that there is a significant and positive relationship between ROA and loan intensity, diversification, cost ratio, capital ratio, inflation, economic freedom, business freedom and corruption freedom. In contrast, the variables found to be dropping the ROA are a credit risk, GDP and monetary freedom. According to ROE, Sufian and Habibullah (2010) reveal that loan intensity, diversification, cost ratio, inflation, economic freedom, business freedom and corruption freedom increase the ROE, whereas credit risk, GDP and monetary freedom reduce the ROE throughout the period in Malaysia. The limitation of this study can be excluding net interest margin as an explained variable. Moreover, this study could be expanded in the time period to investigate the global financial crisis influences.

In the Macedonian banking system, Ćurak et al. (2012) analysed bank-specific, industry-specific and macroeconomic determinants of bank profitability (ROA) over the period 2005-2010 adopting the GMM method (statistical approach). According to the results, ROA is influenced significantly and negatively by solvency risk (capital ratio), credit risk (loans to total assets) and operating expenses of management (costs to assets). In contrast, liquidity (loans to deposits), concentration (Herfindahl-Hirschman Index) and GDP growth were found to be correlated with ROA significantly and positively (the higher the determinants the more profits) in selected Macedonian banks.

Tan and Floros (2012) focused on the Chinese banking industry by examining the factors of profitability (ROA and net interest margin (NIM)). The sample includes 101 banks (5 state-owned banks, 12 joint-stock commercial banks and 84 city commercial banks) for the period 2003-2009. The statistical approach to find the determinants of profitability is the GMM method. Regarding the findings of GMM, this study illustrates that ROA has been affected positively by labour productivity (gross revenue/number of employees), banking sector development in China (bank assets to GDP), stock market development (market capitalisation of listed companies/GDP) and annual inflation rates. In contrast, credit risk (LLP/loans), taxation (tax/operating profit before tax), capitalisation ratio and concentration (total assets of the largest five banks/total assets of the whole banking industry) were found to be reducing the ROA through the examined period in China. Overall, the banks under the study scored very low average ROA (0.007) which needs to be improved through maximising the profits by reducing the capital of banks and increasing the labour productivity. The ownerships' effects were not considered in this study.

Beck et al. (2013) found that size lower of ROA and ROE in 510 Islamic and conventional banks across 22 countries over the period 1995-2009, smaller banks achieve greater profits (significant and negative association between bank size and profitability ratios). On the other side, the findings propose that fixed assets intensity decrease ROE. In this study, Islamic banks found to be resistant against global financial crisis compared to conventional banks. Additionally, Islamic banks financially performed and capitalised better than conventional banks.

2.2. Literature review of stability

Čihák and Hesse (2010) used only z-score as a stability indicator for 77 Islamic banks across the world, over the period 1993-2004. The main determinants in this study are efficiency ratio, loan intensity and size. In particular, efficiency ratio has a negative and significant correlation with stability. This means that expenses of banks were remarkably more than income, which raises the probability of bankruptcies. The lending activities also impacted the stability inversely and significantly. Finally, larger-sized banks were found to be more stable and less risky. This study could be improved by including more stability indicators such as capital ratio.

Rajhi and Hassairi (2013) discussed the Islamic banking stability for MENA and South-east Asian regions for the period 2000-2008. This study explains the causes of stability as the size of banks, loans services, liquidity and GDP. In contrast, efficiency ratio and inflation led to instability. These results allow managers to attract more clients to borrow; one way could be by minimising the lending interest. Additionally, bankers could consider reducing their costs, as efficiency ratio has a negative and significant sign.

Concentrating on 15 African countries, Faye *et al.* (2013) investigated the Islamic financial resistibility using z-score and equity to assets ratio as dependent factors over the period 2005-2012. The main empirical results conclude that stability and capitalisation were significantly and conversely affected by the size of banks. The GDP per capita and supervision quality were very beneficial in supporting capitals. Moreover, more restrictions in banking activities imposed from government resulted in better financial stability and fewer insolvency risks.

Ashraf *et al.* (2016a) is the most recent study that has concentrated on stability indicators using a sample of 173 Islamic banks covering 30 countries. The main findings suggest that smaller sized Islamic banks have better stability scores than large sized banks. Additionally, the Islamic banks could increase their financial stability over the period of the global financial crisis (2007-2009). Finally, Islamic banks in the countries with a higher following of Islamic law (Sharia'a) found to be more stable.

To be more specific, Ashraf *et al.* (2016b) estimated the stability measures (z-score) and their indicators in GCC region for the period 2000-2011. This study includes 35 institutions with 45 Islamic banks. The main results show that banks with lower total assets could be further from insolvency. Furthermore, the economic growth (GDP) has a strong significant association with the financial stability. Finally, the Islamic banks in GCC have approved their strength to face the global financial crisis as there is no evidence for any (significant) relationship between the global financial crisis and the z-scores.

Concentrating on the stability factors of four South Asian banks (Bangladesh, India, Pakistan and Sri Lanka), Nguyen *et al.* (2012) evaluated the causes of stabilities through using z-score as a dependent variable for the period 1998-2008 using generalised methods of moments (GMM) estimator as a statistical method. The findings show that banks with greater market power are more stable when they diversify into non-traditional activities. Moreover, size, total non-interest income, capital

ratio, financial development (market capitalisation to GDP) and business cycle (GDP growth rate) raise the z-score (decrease insolvency risk); whereas, ex-post credit losses and concentration reduce the z-score (increase insolvency risk). Overall, state-owned banks were found to be less risky than foreign banks. In conclusion, the most stable country was found to be Sri Lanka (average z-score = 8.93) followed by India (8.33) then Pakistan (7.54) and Bangladesh (7.41). However, the results indicate that the selected banks have not been influenced by the Asian financial crisis (AFC) or global financial crisis (GFC).

According to the MENA region, Srairi (2013) compared the determinants of risk using 10 countries over the period 2005-2009. This study evaluated 175 Islamic and conventional banks in MENA. There are three types of explanatory variables as ownership, bank-specific variables and financial indicators. Srairi (2013) adopted OLS regression as a statistical approach to examine the determinants of z-score. This study yielded three main results: (i) Family banks tend to be more stable than the company and state-owned banks. (ii) Concentration (equity % participation by the largest shareholder of the bank), size, loan growth, operating leverage, diversification, banking sector development, shareholders rights and bank concentration (assets of 3 largest banks to total assets of all banks in the country) were found to have a significant and positive z-score which leads to making the banks less risky. (iii) Efficiency ratio (cost to income) was found to be decreasing the z-score which raises the insolvency risk. Overall, during the period, conventional banks have more mean z-score (21.7) than Islamic banks (20.8) which makes the conventional banks more stable and resistant against crises in MENA countries.

An international study by Bourkhis and Nabi (2013) focused on Islamic and conventional banks covering 16 countries using z-score as a bank stability indicator. This study used 68 (34 Islamic and 34 Conventional) banks for the period 1998-2009 using random effects to find the factors that affect the stability. The results obtained by Bourkhis and Nabi (2013) argue that the global financial crisis (GFC) does not impact the banks' stability. Overall, stability was affected significantly and negatively by loan intensity (more loans lead to lower z-score). However, a significant and positive relationship was found between z-score and inflation rates which made the banks more stable with a low amount of failure risk. In particular, the findings suggest that efficiency ratio (cost to income) influenced the z-score in large banks only inversely. Larger banks were found to be unstable compared to small banks. In conclusion, Islamic banks could reduce the risk of bankruptcy more than conventional banks over the period. This study could be improved by using more stability indicators (e.g., capital ratios) to allow comparison between banks.

A significant comparison has been conducted between Middle Eastern banks and Eastern Europe banks over the period 1999-2008 examining 1929 banks by Mirzaei *et al.* (2013). The empirical results explain that for banks in the Middle East, market share, interest rate, capital ratio and overheads to total assets ratio have a significant and negative relationship with z-score, while inflation and bank size were found to be decreasing the z-score (increasing the risk). Regarding the Eastern Europe banks, the findings indicate that z-score (stability)

was influenced significantly and positively by market share, interest rate spread, capital ratio, off-balance sheet to total assets, bank age, inflation and GDP. In contrast, overheads to total assets ratio are negative and significant with z-score at the 5% level. Overall, the most stable banks were found to be the foreign banks (Middle Eastern and Eastern Europe) through the period.

The literature review of the stability of Islamic banks is limited. Therefore, further research can be conducted and more stability indicators can be examined. Based on the literature review of stability in Islamic banks, it can be observed that numerous studies have focused only on using z-score as an indicator (dependent variable) for stability. In this study, two main measures can be examined (as z-score and capital ratio) for the financial stability of Islamic banks in GCC region. Using the capital ratio as an indicator for stability is a contribution to the field of banking studies due to lack of studies have examined capitalisation as stability's measure.

2.3. Hypotheses' formulation

There are two different types of independent variables; bank-specific variables and country-specific (macroeconomic) variables. This study identifies the determinants of profitability and stability of Islamic banks in GCC region as follows:

2.3.1. Bank-specific variables

The bank-specific variables in this study are the internal factors as bank size, capital ratio, loan intensity, the age of bank, z-score, return on equity, foreign ownership, domestic ownership, public ownership and listing in the financial market. In this section, each variable can be explained as hypotheses' formulation:

1. Bank size: The bank size (total assets) is extensively used in the literature of finance. According to profitability, all banks strive to maximise their assets as higher assets lead to provide more banking services. In most studies, larger banks found to be more profitable than smaller banks. Masood and Ashraf (2012) considered 25 Islamic banks from 12 countries through the period 2006-2010. Their findings strongly propose that larger sized banks have better financial performance. Many studies approved the same conclusion such as Sariri (2009) for Islamic banks in GCC region and Zeitun (2012) for Islamic banks in GCC countries as well. Regarding the stability, Ahraf et al. (2016b) found that larger banks have more probability to fragile as the relationship between bank size and z-score is significant and negative at the level of 1%.

H1. Bank size affects profitability and stability significantly.

2. Capital ratio: Capital ratio is one of the most significant internal variables to describe financial stability in the banking sector. Most studies have approved that higher capitalisation banks lead to better financial performance. As an example, Bashir's (2003) results that points to significant and positive correlations between profitability ratios and capital ratios. Srairi (2009) has the same finding for 18 Islamic banks in GCC countries for the period 1999-2006. However, focusing on stability, Alharthi (2017) has examined the financial stability of 40 Islamic banks in MENA region during the period 2005-2012. The outcome of this study confirms that

capitalisation supports the financial stability (z-score) positively.

H2. Capital ratio affects profitability and stability significantly.

3. Loan intensity: One of the main banking services is providing loans to clients (borrowers). In fact, in Islamic banking systems, there is no interest on lending but Islamic banks charge only administrative fees. For the literature of profitability, Wasiuzzaman and Tarmizi (2010) claimed that loans increasing the profits of Islamic banks in Malaysia on the period of 2005-2010. Referring to stability in Islamic banking sector, Čihák and Hesse (2010) also claimed that loans have improved the stability which allows banks to be less risky in their study.

H3. Loan intensity affects profitability and stability significantly.

4. Age of bank: This variable explains the time experience of providing banking services. Alharthi (2016) estimated the determinants of profitability for Islamic banks in MENA region and the UK through the period 2005-2012. This study shows that more experienced banks achieved better ROA, ROE and NIM ratios. This finding contrasts with Zeitun's (2012) outcome that suggested new banks have greater profitability ratios for the GCC Islamic banks over the period 2002-2009. According to stability, Alharthi (2017) figured that age influenced the z-score significantly and positively. In addition, new banks found to be better capitalised compared to old banks.

H4. Age of bank affects profitability and stability significantly.

5. Z-score: Mollah and Zaman (2015) examined the effect of stability upon profitability for 86 Islamic banks across the world over the period 2005-2011. They findings strongly approve that higher stability led to maximise earnings. Based on stability, Alharthi (2017) could confirm that the relationship between z-score and the capital ratio is significant and positive at a level of 0.1%. This demonstrates that more stability (less insolvency risk) encourage banks to achieve greater profits and capitals. Therefore, banks seek to maximise their capitalisation and profits simultaneously.

H5. Z-score affects profitability and stability significantly.

6. Return on equity (ROE): The majority of studies empirically in the banking industry have estimated that profits lead to stable performance and lowering the default threats. Alharthi (2017) for example claimed that profitability decreased the bankruptcy risk significantly. On the other side, banks with lower returns found to be better capitalised over the period 2005-2012 in MENA region.

H6. Return on assets (ROE) affects stability significantly.

7. Foreign ownership: Concentrating on financial performance, Bashir (2003) investigated that higher concentration of foreign banks leads to support profitability positively in Middle Eastern countries between the periods 1993-1998. With regards to stability, Alharthi's (2017) results show insignificant associations between foreign ownership and stability indicators (z-score and capital ratio).

H7. Foreign ownership affects profitability and stability significantly.

8. Domestic ownership: For the profitability, the results of Alharthi (2016) pointed that there is no effect on profitability ratios and domestic ownership concentration. Whereas, for the stability,

Alharthi (2017) claimed that domestic banks existence has not affected the z-score but local banks concentration has declined the capitalisation significantly.

H8. Domestic ownership affects profitability and stability significantly.

9. Government ownership: Faye et al. (2013) summarised that public banks concentration has worsened the profitability. The reason behind this result could be due to the public sector is more efficient in providing public services to the public rather than profitable activities such as banks. On the other side, public banks in this study found to be stable and less default risky. This finding could be analysed as the government has large budgets and capitals.

H9. Government ownership affects profitability and stability significantly.

10. Listing in financial market: This indicator compares between profitability and stability in the listed banks in the financial markets and the unlisted banks in financial markets in GCC countries.

H10. Listing in the financial market affects profitability and stability significantly.

2.3.2. Country-specific variables

The country-specific variables in this study are the external factors as gross domestic production (GDP), inflation, market capitalisation, global financial crisis, corruption control and Arab Spring. In this section, each variable can be explained as hypotheses' formulation.

11. Gross domestic production (GDP): The majority of financial studies focus on the GDP as it can be one of the main indicators for the economy. Higher GDP measures lead to stronger and stable economy. Hassan and Bashir (2003) provide evidence that higher GDP ratings lead to greater earnings. This result is consistent with Maokni and Rachi's (2014) outcome on 15 Islamic banks in MENA region during the period 2002-2009 (also, Srairi, has the same conclusion in GCC banks). As a result of the better economy, more deposits and loans in the banking sector could occur. However, Ashraf et al. (2016b) have no evidence of any association between GDP and financial stability in their study on GCC banks.

H11. Gross domestic production (GDP) affects profitability and stability significantly.

12. Inflation: Inflation is one of the main indicators for the bad economy. Most studies in Islamic banking sector have used inflation as a country-specific variable. The majority of these studies conclude that inflation badly impacts the bank profitability and stability negatively such as Trad et al. (2017) who examined the determinants of financial performance and financial stability for 78 Islamic banks in 12 countries over the period 2004-2013. In addition, Zeitun (2012) also provided the same summary that inflation impacted the profitability significantly and negatively for 13 Islamic banks in GCC countries during the period 2002-2009.

H12. Inflation affects profitability and stability significantly.

13. Market capitalisation: this indicator allows identifying the impact of financial market performance upon profitability and stability. Alharthi's (2016) results concluded that Islamic banks in lower growth of financial market indices

have financially performed better in terms of NIM. In contrast, Srairi (2009) investigated that Islamic banks performed better in countries with higher levels of growth in stock markets indices in GCC region for the period 1999-2006. On the other side, market capitalisation growth has increased significantly the fragility of Islamic banks (high default risk) but enhanced the capital ratios significantly in MENA area for the period 2005-2012.

H13. Market capitalisation affects profitability and stability significantly.

14. Global financial crisis (GFC): Alharthi (2016) and Ashraf et al. (2016a) have no proof of any influence upon the profitability and stability, respectively. In contrast, Ashraf et al. (2016b) confirmed that the Islamic banks in GCC region could significantly raise their steadiness against the global financial crisis that happened through the period 2007-2009. This result allows Islamic banks in GCC region to have lower rates of risks.

H14. Global financial crisis (GFC) affects profitability and stability significantly.

15. Control of corruption: This variable indicates whether controlling corruption would increase the profits and stability in Islamic banks in GCC region.

H15. Control of corruption affects profitability and stability significantly.

16. Arab Spring: this variable illustrates how can the Arabic Revelations (that started in 2010 in Tunisia based on IMF database (International Monetary Fund, 2017) affect the profitability and stability of Islamic banks in GCC region. Ghosh (2016) focused in his study on the impact of the Arab Spring upon bank performance of 102 banks in MENA region for the period 2000-2012. The results of this study provide robust evidence that the profitability of banks in MENA region has been affected badly over the period of Arab Spring (2011-2012).

H16. Arab Spring affects profitability and stability significantly.

Based on the literature review, previous studies have neglected the use of capital ratio as a stability indicator in Islamic banking. Moreover, the variables of listing in financial markets, control of corruption rates and Arab Spring have been ignored to be examined by the researchers. These limitations can be filled in this study through considering them. Consequently, this study is following the recent studies on determinants of profitability and stability in Islamic banking sector but with new contributions.

3. METHODOLOGY

3.1. Data of the study

The data in this paper was gathered from Bankscope (Bankscope, 2017) and World Bank (World Bank, 2017) databases. According to Bankscope data, balance sheets and income statements are the sources of the internal (bank-specific) variables. On the other side, the macroeconomic (country) factors have been extracted from World Bank database. The data includes 18 Islamic banks (as can be shown in Table 1) in GCC countries using the period of 2005-2014.

Table 1. Islamic banks in this study

Country	N	Bank	Establishment	Listing in Stock Market
Saudi Arabia	1	Al Rajhi Bank	1988	Listed
	2	Alinma Bank	2006	Listed
	3	Arcapita Bank	1996	Unlisted
Bahrain	4	Al-Salam Bank-Bahrain	2006	Listed
	5	Khaleeji Bank	2004	Listed
	6	ABC Islamic Bank	1985	Unlisted
	7	Bank Alkhair	2004	Unlisted
	8	Venture Capital Bank	2005	Unlisted
	9	Ibdar Bank	2007	Unlisted
The United Arab Emirates	10	Dubai Islamic Bank	1975	Listed
	11	Abu Dhabi Islamic Bank	1997	Listed
	12	Emirates Islamic Bank	1976	Listed
	13	Sharjah Islamic Bank	1975	Listed
	14	Al Hilal Bank	2008	Unlisted
Qatar	15	Masraf Al Rayan	2006	Listed
	16	Qatar Islamic Bank	1982	Listed
	17	Qatar International Islamic	1990	Listed
Kuwait	18	Boubyan Bank	2004	Listed

Source: Bankscope (2017)

The main reasons of choosing GCC region are:

1. GCC countries have consistency in culture and language (Arabic).

2. GCC countries contain a high number of Islamic and all of them are affective in terms of enhancing GCC economies (GDP).

3. Availability of data in Bankscope GCC region over the period 2005-2014.

4. The first international Islamic bank was located in the Middle East in 1975 in Jeddah, Saudi Arabia, known as Islamic Development Bank (Islamic Development Bank, 2017); whereas, the first domestic Islamic bank was established in Dubai, UAE in 1975, known as Dubai Islamic Bank (Dubai Islamic Bank, 2017). This reason provides a significant advantage of this study.

5. Four GCC countries (namely, Kuwait, Qatar, Saudi Arabia and the United Arab Emirates) are members of the Organisation of Petroleum Exporting Countries (OPEC Organisation, 2017).

6. GCC countries have emerging economies. So, studying their stability would support their economies strongly by identifying the positive and negative determinants.

3.2. Independent variables

The internal factors in this study are bank size, capital ratio, loan intensity, the age of bank, z-score, return on equity, foreign ownership, domestic ownership, public ownership and listing in the financial market. According to the external variables, gross domestic production (GDP), inflation, market capitalisation, global financial crisis, corruption control and Arab Spring can be examined as country-specific factors. Table 2 concludes the descriptive statistics table for the independent variables for Islamic banks in GCC region during the period 2005-2014.

Table 2. Variable definitions and summary statistics

Variables	Definition	Islamic Banks in GCC Countries		
		Obs	Mean	S.D.
Dependent variables				
ROA	Return on assets = net income/total assets	148	0.033	0.192
ROE	Return on assets = net income/Equity	148	0.073	0.173
NIM	Net interest income / total earning assets	148	4.443	5.864
Z-score	Log(Z-score), where Z-score = (ROA + capital ratio) / S.D. (ROA)	148	2.411	0.940
Capital ratio	Capital/total assets	148	0.273	0.219
Independent variables				
Bank-specific variables				
Size	Log (total assets)	148	8.345	1.515
Capital ratio	Capital/total assets	148	0.273	0.219
Loan intensity	Loans/total assets	148	0.484	0.241
Age of bank	Log (years since establishment)	148	2.877	0.618
Z-score	Log(Z-score), where Z-score = (ROA + capital ratio) / S.D. (ROA)	148	2.411	0.940
ROE	Return on assets = net income/Equity	148	0.073	0.173
Foreign ownership	Dummy = 1 if a bank owned by foreign, else zero	148	0.264	0.442
Domestic ownership	Dummy = 1 if a bank owned by local, else zero	148	0.514	0.502
Government ownership	Dummy = 1 if a bank owned by government, else zero	148	0.223	0.418
Listing in financial market	Dummy = 1 if a bank is listed, 0 if a bank is unlisted	148	0.696	0.462
Country-specific variables				
GDP	Log (GDP)	148	25.465	1.241
Inflation	Inflation rates	148	0.159	0.281
Market capitalisation	Market capitalisation to GDP	148	0.680	0.374
Global financial crisis	Dummy = 1 for the period 2007-2009, otherwise zero	148	0.311	0.464
Control of corruption	%, higher percentage indicates tighter control	148	73.240	11.022
Arab Spring	Dummy = 1 for the period 2011-2014, otherwise zero	148	0.453	0.499

Sources: Bankscope (2017) and World Bank (2017)

3.3. Dependent variables and models

3.3.1. Profitability variables and model

The financial performance can represent through three main indicators as return on assets (ROA), return on equity (ROE) and net interest margin (NIM). Table 2 below explain the data descriptive of profitability factors. This study estimates the relationship between profitability indicators and their determinants through two important statistical approaches as generalised least squares (GLS) and generalised method of moments (GMM), both models can be tested through STATA 14 software. The GLS

$$Prof_{it} = \alpha + \beta_1 LTA_{it} + \beta_2 EQTA_{it} + \beta_3 LOANSTA_{it} + \beta_4 LAGE_{it} + \beta_5 LOGZ_{it} + \beta_6 FORE_{it} + \beta_7 DOM_{it} + \beta_8 GOV_{it} + \beta_9 LISTING_{it} + \beta_{10} LGDP_{it} + \beta_{11} INFLATION_{it} + \beta_{12} MCAP_{it} + \beta_{13} GFC_{it} + \beta_{14} CCORRUPTION_{it} + \beta_{15} ASPRING_{it} + \epsilon_{it} \quad (1)$$

$i = 1 \dots n; t = 1 \dots n$

where, $Prof_{it}$ points to the dependent variables of profitability ratios (ROA, ROE and NIM); α denotes the constant; β is the regression coefficient; LTA_{it} is the natural logarithm of total assets (proxy of size); $EQTA_{it}$ is the capital ratio; $LOANSTA_{it}$ is a measure of a bank's loan intensity;

$LAGE_{it}$ is the natural logarithm of age (time since establishment); $LOGZ_{it}$ represents the natural logarithm of z-score; $FORE_{it}$, DOM_{it} and GOV_{it} represent foreign, domestic and public ownerships, respectively; $LISTING_{it}$ represents the listed banks in stock market; $LGDP_{it}$ denotes log (GDP); $INFLATION_{it}$ is the percentage of inflation that was announced

and GMM techniques were found to be suitable for analysing the data due to significant results. Extensive studies in the literature review examine the data through GLS such as Rashid and Jabeen (2016). However, this study uses GMM as a robust evidence of the analysis (Mokni & Rachdie, 2014 used GMM in their study). The GMM model helps to control for: (1) time-invariant fixed effects through taking first-differences of all variables; (2) the autoregressive process in the data for each efficiency indicator; and (3) the potential presence of endogeneity of the explanatory variables. To sum up, the model of GLS and GMM for the profitability can be illustrated as follows:

from the various countries; $MCAP_{it}$ is the market capitalisation over GDP ratio; GFC_{it} is the global financial crisis; $CCORRUPTION_{it}$ is the control of corruption; $ASPRING_{it}$ is the Arab Spring; ϵ_{it} is the error term; i denotes banks; t represents time.

Statistically, we need to check if there is any multicollinearity in the dataset before running any statistical regressions. To do so, the correlation matrix can be initiated through STATA 14 software as in Table 3 below. After conducting the correlation matrix, Table 3 confirms that there is no multicollinearity as all numbers of correlations are under 70%.

Table 3. Correlation matrix for variables

Correlation Matrix	ROA	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
(1) ROE	0.181																
(2) NIM	0.030	0.228															
(3) Z-score	-0.086	0.400	-0.050														
(4) Capital ratio	0.036	-0.219	0.371	-0.274													
(5) Bank size	-0.075	0.406	-0.172	0.417	-0.695												
(6) Loan intensity	-0.147	0.294	-0.263	0.503	-0.693	0.647											
(7) Age	-0.038	0.305	-0.075	0.415	-0.462	0.431	0.444										
(8) Foreign ownership	0.137	-0.181	0.068	-0.452	0.558	-0.467	-0.505	-0.349									
(9) Domestic ownership	-0.080	0.095	0.027	0.085	-0.284	0.204	0.241	0.042	-0.615								
(10) Public ownership	-0.049	0.078	-0.105	0.376	-0.250	0.250	0.246	0.319	-0.320	-0.550							
(11) GDP	-0.074	0.238	-0.167	0.463	-0.504	0.693	0.616	0.322	-0.482	0.109	0.380						
(12) Inflation	-0.068	0.064	0.062	0.073	0.066	0.217	0.091	-0.016	-0.098	0.281	-0.233	0.194					
(13) Market capitalisation	0.030	0.154	0.278	-0.261	0.248	-0.334	-0.266	-0.077	0.346	-0.010	-0.354	-0.641	0.225				
(14) Global financial crisis	-0.008	0.133	0.216	-0.033	0.064	-0.090	-0.104	-0.013	0.062	0.011	-0.079	-0.140	0.007	0.092			
(15) Listing	-0.094	0.330	-0.146	0.549	-0.501	0.640	0.495	0.355	-0.338	0.209	0.107	0.610	0.090	-0.291	-0.032		
(16) Control of corruption	-0.049	0.116	-0.139	0.255	-0.380	0.273	0.314	0.313	-0.065	-0.363	0.504	0.314	-0.597	-0.279	-0.007	0.273	
Arab Spring	0.104	-0.066	-0.196	-0.020	0.007	0.109	0.087	-0.104	-0.020	-0.038	0.067	0.147	-0.194	-0.182	-0.611	-0.019	-0.008

3.3.2. Stability variables and models

The financial stability indicators in this study are

$$Z-sco_{it} = \alpha + \beta_1 EQTA_{it} + \beta_2 LTA_{it} + \beta_3 LOANSTA_{it} + \beta_4 LAGE_{it} + \beta_5 ROE_{it} + \beta_6 FORE_{it} + \beta_7 DOM_{it} + \beta_8 GOV_{it} + \beta_9 LISTING_{it} + \beta_{10} LGDP_{it} + \beta_{11} INFLATION_{it} + \beta_{12} MCAP_{it} + \beta_{13} GFC_{it} + \beta_{14} CCORRUPTION_{it} + \beta_{15} ASPRING_{it} + \epsilon_{it} \quad (2)$$

$i = 1 \dots n; t = 1 \dots n$

$$Cap_{it} = \alpha + \beta_1 LOGZ_{it} + \beta_2 LTA_{it} + \beta_3 LOANSTA_{it} + \beta_4 LAGE_{it} + \beta_5 ROE_{it} + \beta_6 FORE_{it} + \beta_7 DOM_{it} + \beta_8 GOV_{it} + \beta_9 LISTING_{it} + \beta_{10} LGDP_{it} + \beta_{11} INFLATION_{it} + \beta_{12} MCAP_{it} + \beta_{13} GFC_{it} + \beta_{14} CCORRUPTION_{it} + \beta_{15} ASPRING_{it} + \epsilon_{it} \quad (3)$$

$i = 1 \dots n; t = 1 \dots n$

where, $Z-sco_{it}$ and Cap_{it} are the indicators of stability (dependent variables); ROE_{it} is a return on equity.

4. RESULTS AND DISCUSSION

According to profitability, this study approves that the financial performance of Islamic banks in GCC countries affected from some factors through the

z-score and capital ratio. The GLS and GMM models can be illustrated as follows:

period 2005-2014. These factors can be concluded in Table 4 as H1, H2, H3, H5, H12, H13, H15 and H16 have significantly impacted the profitability. The data is highly consistent due to high R² values as the r-squared for GLS and GMM in profitability is varied between 9.40% and 44.05% as in Table 4. Additionally, r-squared for GLS and GMM instability is ranged between 56.27%-79.60% based on Table 5.

Table 4. GLS and GMM results for the determinants of profitability for Islamic banks in GCC region

<i>GLS and GMM results</i>	<i>(GLS)</i>	<i>(GMM)</i>	<i>(GLS)</i>	<i>(GMM)</i>	<i>(GLS)</i>	<i>(GMM)</i>
<i>Profitability</i>	<i>ROA</i>	<i>ROA</i>	<i>ROE</i>	<i>ROE</i>	<i>NIM</i>	<i>NIM</i>
(H1) Size	-0.0405 (-1.17)	-0.0283 (-0.93)	0.0586** (3.29)	0.0586** (3.02)	0.958 (1.02)	1.208* (2.18)
(H2) Capital ratio	-0.480* (-2.42)	-0.371 (-1.13)	0.182 (1.62)	0.182 (1.29)	9.78 (1.85)	19.77** (2.98)
(H3) Loan intensity	-0.393** (-2.80)	-0.274 (-1.33)	0.0213 (0.25)	0.0213 (0.37)	-0.85 (-0.23)	-1.059 (-0.39)
(H4) Age	-0.00141 (-0.02)	0.0188 (1.07)	0.0152 (0.67)	0.0152 (0.99)	-0.492 (-0.28)	0.193 (0.45)
(H5) Z-score	0.119** (3.37)	0.0332 (1.59)	0.0598** (3.23)	0.0598** (2.62)	0.604 (0.64)	-0.275 (-0.48)
(H7) Foreign ownership	0.155 (1.68)	0.124 (1.29)	0.0117 (0.24)	0.0117 (0.25)	-1.457 (-0.59)	-3.482 (-1.96)
(H8) Domestic ownership	0.0966 (1.19)	0.0215 (1.16)	0.0174 (0.47)	0.0174 (0.70)	0.222 (0.10)	0.692 (0.97)
(H9) Public ownership						
(H10) Listing	-0.145 (-1.53)	-0.0587 (-1.25)	-0.0134 (-0.35)	-0.0134 (-0.40)	-2.175 (-0.80)	-0.74 (-0.63)
(H11) GDP	0.0626 (1.20)	0.053 (1.82)	0.0493 (1.88)	0.0493 (1.94)	1.591 (1.10)	1.754 (1.57)
(H12) Inflation	-0.12 (-1.09)	-0.0646 (-0.78)	-0.275*** (-3.50)	-0.275** (-2.13)	-6.896* (-2.45)	-7.888* (-2.36)
(H13) Market capitalisation	0.045 (0.59)	0.0509 (1.19)	0.270** (5.20)	0.270** (4.77)	7.696** (3.93)	7.776* (2.46)
(H14) Global financial crisis	0.0316 (0.76)	0.0402 (1.94)	0.0499 (1.57)	0.0499 (1.55)	1.129 (1.08)	0.944 (0.93)
(H15) Control of corruption	-0.00251 (-0.80)	-0.00274 (-1.59)	-0.00361 (-1.85)	-0.00361* (-2.02)	-0.087 (-1.06)	-0.0585 (-1.04)
(H16) Arab Spring	0.0643 (1.37)	0.0705 (1.43)	-0.0225 (-0.67)	-0.0225 (-0.86)	-2.101 (-1.74)	-2.676** (-3.01)
_cons	-1.04 (-0.88)	-0.853* (-2.07)	-1.804** (-3.15)	-1.804** (-3.05)	-41.83 (-1.27)	-52.83 (-2.06)
R ²	0.2173	0.094	0.4405	0.4405	0.3045	0.3537
Obs	148	148	148	148	148	148

t statistics in parentheses; * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Regarding the stability, Table 5 summarises that Islamic banks in GCC region were influenced by internal and external determinants for the period

2005-2014. To sum up, H1, H2, H3, H4, H5, H6, H7, H8, H10, H11, H13 and H16.

Table 5. GLS and GMM results for the determinants of stability for Islamic banks in GCC region

<i>GLS and GMM results</i>	<i>(GLS)</i>	<i>(GMM)</i>	<i>(GLS)</i>	<i>(GMM)</i>
<i>Stability</i>	<i>Z-score</i>	<i>Z-score</i>	<i>Capital Ratio</i>	<i>Capital Ratio</i>
(H5) Z-score			0.0718*** (4.65)	0.0604*** (4.93)
(H2) Capital ratio	1.781*** (3.94)	2.109*** (4.22)		
(H1) Size	-0.0574 (-0.68)	0.0308 (0.43)	-0.0601*** (-4.01)	-0.0935*** (-7.32)
(H3) Loan intensity	0.807* (2.44)	1.579*** (5.31)	-0.223*** (-4.29)	-0.397*** (-6.81)
(H4) Age	0.287* (2.11)	0.159 (1.93)	-0.0671 (-1.65)	-0.0159 (-1.05)
(H6) ROE	0.806** (3.00)	1.216** (2.59)	0.0402 (0.99)	0.106 (1.67)
(H7) Foreign ownership	-0.779*** (-3.71)	-1.104*** (-6.58)	0.0522 (1.26)	0.155*** (5.38)
(H8) Domestic ownership	-0.479* (-2.54)	-0.521*** (-3.39)	0.0426 (1.08)	0.0181 (0.80)
(H9) Public ownership				
(H10) Listing	1.067*** (5.29)	0.908*** (5.63)	-0.113 (-1.85)	-0.0687** (-2.79)
(H11) GDP	-0.0224 (-0.18)	-0.294** (-2.58)	-0.00267 (-0.09)	0.0681** (3.20)
(H12) Inflation	0.282 (1.01)	0.597 (1.58)	0.0618 (1.46)	0.124 (1.82)
(H13) Market capitalisation	-0.191 (-0.96)	-0.571* (-2.42)	-0.0497 (-1.61)	0.0184 (0.41)
(H14) Global financial crisis	-0.044 (-0.43)	-0.0972 (-0.79)	0.0204 (1.38)	0.035 (1.37)
(H15) Control of corruption	0.00683 (0.90)	0.0128 (1.43)	-0.000347 (-0.26)	-0.00136 (-1.08)
(H16) Arab Spring	-0.0763 (-0.67)	-0.0556 (-0.44)	0.0368* (2.00)	0.0667* (2.86)
_cons	1.057 (0.37)	7.080** (2.63)	1.035 (1.55)	-0.572 (-1.21)
R ²	0.5627	0.6129	0.671	0.796
Obs	148	148	148	148

t statistics in parentheses; * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

H1. Bank size: the results suggest that larger Islamic banks found to be more profitable as greater total assets allow banks to accept more deposits and provide more loans. This result is consistent with Masood and Ashraf (2012), which can be confirmed also by the majority of studies that confirm a significant and positive association between the size of bank and profitability ratios. Beck et al. confirmed confuse point of view as smaller banks tend to perform exceptionally compared to larger banks. For stability, GLS and GMM models suggest in this study that smaller sized banks are well capitalised than larger banks (similar to Ahraf et al., 2016b). This finding contrasts with the most recent studies in the literature such as Nguyen et al. (2012) and Srairi (2013).

H2. Capital ratio: Table 5 shows that the capitalisation has a negative sign for ROA and statistically significant at 5%. This result links to some previous researchers like Bashir (2003) and Srairi (2009). Capitalisation, however, has a positive sign in most cases in the literature e.g. Mirzaei et al. (2013). The GMM estimates that higher capitalised Islamic banks found to be more profitable in terms of NIM. These results propose that Islamic banks could increase their profitability through investment such as entering in projects and purchasing stocks. Concentrating on stability, higher capitalisation led to having stable banks as the associations between capital ratio and z-score are strongly positive at the level of 0.1% (consistent to Alharthi, 2017).

H3. Loan intensity: providing more loans in Islamic banks result to reduce ROA and capitals significantly. Wasizzaman and Tarmizi (2010) and Sufian and Habibullah (2010) approved different point of view regarding the relationship between lending and profits. They propose that lending increased the financial performance effectively. Focusing on stability, lending supports the financial stability based on the positive relationship between loan intensity and z-score which indicates that banks could be further from insolvency through giving more loans. Čihák and Hesse's (2010) results supported this result. By the contrary, Bourkhis and Nabi (2013) encourage banks to reduce their loans to achieve better earnings.

H4. Age of bank: GLS results could confirm that experienced banks with longer age are less risky to face risks than new banks. This result is logic due to older banks have the ability to invest in more projects, having more customers, owning greater assets and employing better skilful bankers compared to the modern established banks. Alharthi, 2017 Mirzaei et al. (2013) strongly approved that more experienced banks tend to be more stable and less risky.

H5. Z-score: The z-score was found to be strongly correlated with ROA and ROE at a 0.1% level. This demonstrates that profits increase the stability and reduce the risk of bankruptcy (similar to Mollah and Zaman, 2015). Based on stability, the mutual and robust association between z-score and capital ratio as it can be seen in Table 5. There is a significant, strong and positive correlation between z-score and capital ratio. This means that ROA and equity are highly important in banks to strength the performance. Alharthi (2017) could confirm the same outcome.

H6. ROE: this hypothesis claims that the more investment in equity the more stability can be gained. GLS and GMM point in Table 5 that the relationship between z-score and ROE is significant and positive at the level of at 1%. These results encourage policy maker and bankers of Islamic banks in GCC countries to increase their capitals as ROE could save banks to be fragile. Referring to the literature, Srairi (2013) could not find any evidence of a correlation between z-score and ROA.

H7, H8. Domestic and foreign ownerships: Table 5 indicates that there is no significant impact from the foreign and domestic impact on profits (similar to Alharthi, 2016). Stability's results provide that the finding of GLS and GMM in Table 5 discourages Islamic banks to open more branches as higher domestic and foreign ownership decreases the stability significantly and negatively, which lead to being riskier. For foreign ownership, Mirzaei's et al. (2013) outcome unlinked with the study because they found a significant and positive relationship between stability and foreign ownership. This conclusion encourages international banks to invest more in Islamic banking. Nguyen et al. (2012) and Alharthi (2017) however tried to test the effects of foreign ownership on stability but insignificance analysis found as a result. In addition, foreign banks found to be better capitalised compared to local banks. On other words, foreign banks could raise their capitals efficiently in the period 2005-2014.

H10. Listing in the stock market: In Table 5, the listed Islamic banks in GCC countries were able to achieve greater stability rates during the period 2005-2014 compared to the unlisted Islamic banks. On the contrary, the unlisted Islamic banks found to well capitalised compared to the listed Islamic banks. Back to the recent studies, Nguyen et al. (2012) found that there is no (insignificant) relationship between stability and listing

H11. GDP: For stability, the Islamic banks in GCC countries with higher GDP growth level tend to be unstable based on the GMM regression in Table 5. This can be one the weakness point that Islamic banks could not take the advantage of economy growing. In this case, the management is the first responsible for inefficient results. Therefore, skilful management is highly important in the banking sector. The majority of recent studies unlinked to the result in this study. As a result, most recent studies claim that higher economy growth rates allow banks to be strongly stable and further from insolvencies such as Nguyen et al. (2012) Mirzaei et al. (2013) and Srairi (2013).

H12. Inflation: The continuous increasing in prices has affected the Islamic banks' performance as profitability ratios have been impacted negatively by inflation. Trad et al. (2017) and Zeitun (2012) have the same conclusion of this result.

H13. Market capitalisation: development in the stock market has made the Islamic banks in GCC countries more profitable over the period 2005-2014 (consistent to Nguyen et al., 2012). This means that stock market is one of the main indicators of economies. In this case, stock market growth motivates banks to provide more services in GCC region. This is inconsistent with Alharthi's (2016) results who concluded that Islamic banks in lower

growth of financial market indices have financially performed better in terms of NIM.

H14. GFC: there is an insignificant correlation (no effect) between global financial crisis and bot financial indicators (profitability and stability). This result proves that Islamic banks in GCC region are resistance to any distress in economies. Nguyen et al. (2012) and Bourkhis and Nabi (2013) also found that the global financial crisis has no influential effects on the stability of banks.

H15. Control of corruption: GMM regression proposes that there is a significant and negative relationship between control of corruption and ROE at a level of 5%. This demonstrates that tighter control of corruption led to reducing the profits.

H16. Arab Spring: another advantage point for the Islamic banks in GCC region is that in the period of Arab Spring, banks maximise their capitals (positive correlation between Arab Spring dummy and capital ratio). By the contrary, NIM has decreased significantly over the period of Arab Spring. This result goes against the conclusion of Ghosh (2016) for MENA banks.

5. CONCLUSION

The main objective of this study was finding the factors of financial performance and financial stability for Islamic banks in GCC countries over the period 2005-2014. For profitability, this study concluded that Islamic banks in GCC region can improve their profits through focusing on enlarging banks' assets and equity. Additionally, the results of this study indicated that stable banks are more profitable. These findings are supported by the literature as the most studies confirm that greater size of bank, capitalisation and stability lead to better profitability ratios. The GLS and GMM's findings discourage Islamic banks to operate and invest in countries with high rates of inflation, higher inflation affected earnings of Islamic banks in GCC region. The performance of Islamic banks found to be more efficient in countries within developed stock markets. Arab Spring only decreased the NIM significantly but other profitability ratios (ROA and ROE) have not been influenced by Arab Spring. For stability, the financial stability indicators (z-score and capital ratio) found to be strongly important to each other. Lending service supports the stability significantly. In addition, lending affected the capital ratio significantly and negatively, which confuse with the recent studies that approved those loans could improve capitalisation. Furthermore, the listed Islamic banks were more stable than the unlisted Islamic banks whereas, the listed banks had lower capitals. The strongest advantage in this study showed that Islamic banks in GCC countries were well capitalised through the period of Arab Spring. In general, the global financial crisis has no effect upon financial performance and financial stability.

The limitation of this study can be concluded as there is no consideration for some important variables such as credit risk, fixed assets and efficiency ratio. Further, this research focused on a limited number of Islamic banks due to restricted availability of data in Bankscope.

Further research can be examined covering the period of 2015 and 2016. Moreover, a higher number of Islamic banks can be tested by focusing more on other regions such as MENA and Asian areas. Many statistical regressions can provide stronger robust evidence of analysis, for example, fixed-effects, random-effects, OLS models.

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