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The Impact of Financial Risks on the Profitability of Islamic and Conventional Banks in Gulf Cooperation Council Countries

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Abstract

This study investigates the effect of financial risks on Islamic banks' (IBs) and conventional banks' (CBs) profitability in Gulf Cooperation Council countries from 2011 to 2016. The author investigates whether key financial risks significant influence bank profitability across IB and CB banks. Generalized least square (GLS) with fixed and random effects are used to test the impact of credit risk, liquidity risk, operational risk and capital risk on bank profitability. The study shows a positive and significant relationship between credit risk and the profitability of the IBs, but this is insignificant for the CBs. Liquidity risk has a significant and positive effect on IBs' ROAA but has a significant and negative effect on CBs. Moreover, operational risk is significant and has a negative impact on the profitability of IBs and CBs. The impact of capital risk on ROAE is positive and significant with CBs. Moreover, the financial risks' influence on financial profitability varies between IBs and CBs.

Key words: Islamic banks (IBs), Conventional banks (CBs), Financial risks, Profitability, GCC countries.

1- Introduction

The banking sector is a key player in any economy and is considered the lifeblood of economic development because of its role in collecting funds from surplus units and provides them to deficit units, whether people or institutions. Islamic banking (IB) is part of the banking system. What distinguishes the IB system from conventional banks (CB) is that IBs use an interest-free and profit-and-loss sharing perspective. According to Hall (2012), IBs are experiencing a rapid increase in revenues and customers. Hall (2012) points out that the secret behind this rapid growth is the growth of the Muslim population around the world who only deal with banks that follow Islamic law (Sharia compliant). Furthermore, the IB system did not significantly suffer from the last global financial crisis 2007–2008 like the CB system did (Amba and Almukharreq, 2013).

Profit is considered the ultimate goal of financial institutions, and doing so leads to maximising shareholder wealth. However, an increase of profit is associated with an increase of risk, and there are generally direct relationships between them (Tafri et al., 2009). Hence, financial risks become important factors in both banking systems. Knowing these risks and their impact on profitability could help bank officials manage them properly. The Basel Committees on banking supervision in 1998 and 2001 state that financial risks must be managed carefully and should take into account the risks that are related to capital adequacy. In addition, Ariffin and Tafri (2014) point out that financial risks should be prioritised because it might help regulators such as central banks and the Basel Committee make efficient progress in the procedures of financial institutions.

To the author's knowledge, thus far, previous studies have not investigated the impact of financial risks on the profitability of IBs and CBs in Gulf Cooperation Council (GCC) countries. Drzeniek-Hanouz (2014) states that GCC countries are the most competitive economies in the Middle East and North Africa (MENA) region. Related research was done by Tafri et al. (2009), who analyse the relationship between the profitability of both types of banks and financial risks in Malaysia over a period of 10 years between 1996 and 2005. The research shows that credit risks influence profitability for both types of banks, whereas liquidity risks have no effect. The paper also shows that interest risks only impact the profitability of IBs.

To date, several studies, such as Mashal (2012) and EY WORLD ISLAMIC BANKING COMPATITIVE REPORT (2014), report that the IB system is one of the fastest growing divisions in the financial sector. The EY report (2014) states that assets in IBs' have grown annually by nearly 18% from 2009 to 2013 and indicates the average growth could be 19% by 2018. Figure 1 and 2 show that IBs' return on average assets (ROAA) and return on average equity (ROAE) in 2016 was 1.33 and 9.85, respectively. For CBs, it was 1.33 and 9.75, respectively. This indicates that IBs outperformed and were more profitable compared to CBs in 2016 in terms of ROAE and ROAA. Moreover, the trend shows that IBs could continue this performance level in the long term. A potential explanation of this pattern is because IBs have become trusted by customers and shareholders after not being significantly affected by the recent global financial crisis in 2008.

Figure 1

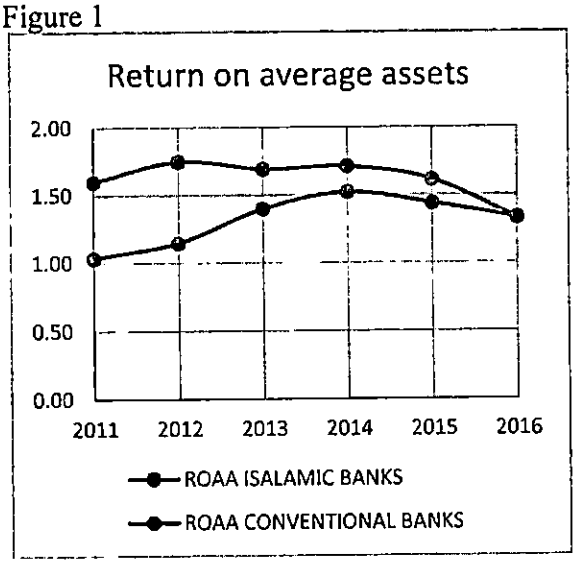
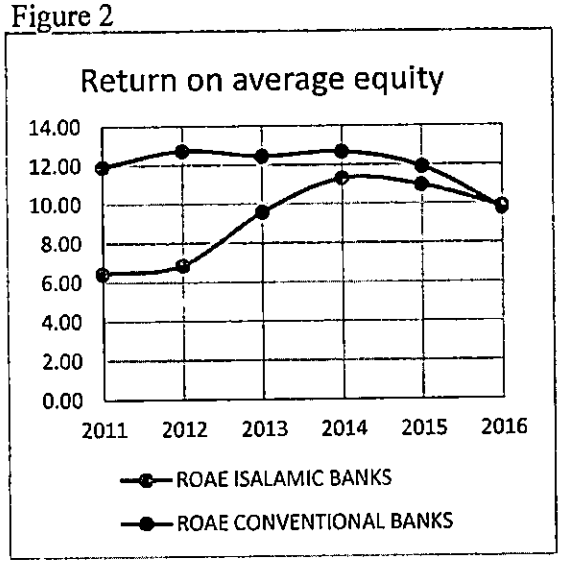


Figure 2



The aim of the current research is to analyse the relationship between financial risks and the profitability between IBs and CBs in GCC countries, as well as whether these financial risks impact the profitability variances between IBs and CBs. The paper is structured as follows: Section 2 provides the literature review. Section 3 explains the data and methodology. The results are discussed in section 4. Finally, the conclusion is given in section 5.

2- Literature review

2.1. Conventional banks

Numerous studies have attempted to examine the relationship between CBs' performance and financial risks. The studies have focused on either internal or external financial risks. Angbazo (1997) examines the relationship between net interest margins in U.S. CBs and default risk, interest rate risk and off-balance sheet activities between 1989 and 2003. The study employs a GLS with fixed and random effects to analyse data. The author finds that default risk and interest rate risk have a positive relationship with interest spread in banks. Athanasoglou et al. (2005) investigate the impact of bank and industry-specific and macroeconomic elements on banks' profit, where the bank-specific elements are operating efficiency, financial risk and banks size and the industry-specific elements are the ownership status of the banks and industry concentration. Finally, the macroeconomic elements are business cycle and inflation. The study uses the GMM method for a list of Greek banks and uses data from between 1985 and 2001. The results confirm that operating efficiency, financial risk and business cycle have a positive impact on the banks' profitability.

Trujillo-Ponce (2013) attempt to study the features that impact Spanish banks' profitability. He covers 89 savings and commercial banks and credit cooperatives between 1999 and 2009. The study uses a GMM analysis method which support earlier research method used by Athanasoglou et al. (2005). The study uses ROA and ROE as measures of the banks' profitability. The results indicate that credit and capital risks have a positive and significant impact on the banks' profitability. Kosmidou et al. (2005) examine the influence of macroeconomic situations, bank-specific features and financial market structure on the profitability of commercial banks in the UK between the years 1995 and 2002. They use ROAA and net interest margin (NIM) as dependent variables while efficiency in expenses management, liquidity ratio, banks asset quality, capital strength and bank size are used as independent variables. They find that the liquidity ratio has a positive impact on ROAA but a negative impact on NIM. They also find that bank size has a significant effect only on NIM and GDP, while inflation has a positive influence on the banks' profitability.

Another study conducted by Athanasoglou et al. (2008) looks at the determinants that impact the profitability of commercial banks in south-eastern European countries. They analyse data from between 1998 and 2002. They use the generalized least square (GLS) method with

random effects. The results confirm that credit risk has a negative and significant influence on the profitability (ROA). Liquidity risk has no impact on profitability. However, capital risk has a positive and significant effect on profitability. The finding on credit risk is contrary to what Trujillo-Ponce (2013) finds while the one on capital risk is in agreement with Trujillo-Ponce's (2013) finding.

2.2. Islamic banks

Over the past three decades, the studies have provided information about the relationship between IBs' profitability and financial risks. Bashir (2003) attempts to show how a bank's features and the financial environment impact IBs' performance in the Middle East. He collects data from 14 IBs across eight countries between the years 1993 and 1998. He uses profit margin, ROA and ROE as measures of profitability. The study uses a linear regression model to evaluate the impact of bank features and the financial environment on IBs' profitability. The results show that capital to asset and loan to asset ratios have a positive impact on profitability. The study also shows that IBs owned by non-nationals are more profitable. Bashir and Hassan (2004) examine the features that impact IBs' profitability. They cover 43 IBs in 21 countries between the years 1994 and 2001. Their results are in line with Bashir (2003). However, one of their findings is unexpected and suggests that small banks tend to be more profitable than bigger ones. This finding is contrary to most of the studies that indicate there is a positive relationship between bank size and profitability, for example, in Vijayakumar and Tamizhselvan (2010) and Ozgulbas et al. (2006).

Another study by Ramadan (2011) examines the effect of bank-specific factors on the profitability of IBs in Jordan. Using data from between 2000 and 2010, the author investigates the profitability using two measures: ROA and profit margin. The study uses a liner regression model to analyse the data. The results confirm a positive and significant relationship between profitability (ROA and profit margin) and credit risk. However, bank size does not have a significant influence on IBs' profitability in Jordan. Masood and Ashraf (2012) examine the bank-specific factors on the profitability of IBs. They collect data from 25 IBs across 12 countries using data from between the years 2006 and 2010. They find that bank size has a positive significant relation with profitability. The result indicates that bigger banks will have more profits. In addition, loans to assets and capital adequacy have a positive significant effect on profitability (ROA and ROE).

Idris et al. (2011) investigate the internal components that influence nine IBs' profitability in Malaysia between the years 2007 and 2009. The use GLS to analyse the data and find that only one factor is significant on profitability: bank size. This finding is consistent with Masood and Ashraf (2012) but inconsistent with Bashir and Hassan (2004). Further, other factors in the study are insignificant and have no impact on the profitability such as liquidity risk, credit risks and capital adequacy. Meanwhile, Ariffin and Tafri (2014) attempt to analyse the effect of financial risks on the profitability of IBs worldwide. The research uses data from 65 IBs over a period of eight years between 2004 and 2011. The adopted methodology is GLS. In contrast to Ramadan (2011), the research shows that credit risk has a significant negative influence on profitability (ROA) while the interest rate and liquidity risk are insignificant.

2.3. Comparative studies

Ghenimi and Omri (2015) investigate the determinants that impact the liquidity risk for both CBs and IBs in GCC countries. They analyse data from 11 IBs and 33 CBs between 2006 and 2013. They use the ordinary least squares (OLS) method with fixed and random effects. The results confirm that ROE, inflation and NIM have a positive effect on liquidity risk for IBs while ROE, GDP growth and size have a negative effect. On the contrary, size, ROE, GDP, NIM and inflation have a positive effect on liquidity risk for CBs while ROA has a negative effect. Tafri et al. (2009) attempt to examine the relationship between profitability of IBs and CBs and financial risks in Malaysia between 1996 and 2005. The methodology used is the GLS with fixed and random effects. They analyse data from 36 commercial banks. The results show that credit risk has an influence on profitability for both types of banks while liquidity risks have no influence. The paper also shows that interest risk has an impact on CBs' profitability. However, liquidity risk is insignificant for both banks.

Zeitun (2012) examines the influential components of IBs and CBs in GCC countries. The research collects data from 38 CBs and 13 IBs between 2002 and 2009. The methodology is a cross-sectional time series. The study indicates that operational risk has a negative and significant impact on the profitability of both types of banks. Furthermore, GDP has a positive and significant effect on banks' profitability while inflation has a negative and significant impact. Apart from Tafri et al. (2009) and Zeitun (2012), there is a general lack of research when it comes to examining the impact of financial risks on the profitability of IBs and CBs. To the author's knowledge, thus far, earlier studies do not examine or cover the subject in GCC countries. Drzeniek-Hanouz (2014) states that GCC countries are the most competitive and

developed economies in the MENA region. The aim of the current research is to investigate the relationship between financial risks and the profitability between IBs and CBs in GCC countries, as well as whether these financial risks have an effect on financial profitability variations between IBs and CBs.

2.4. Hypotheses

H1: The financial risks have a significant influence on the financial profitability of the banks in GCC countries.

H2: Each type of financial risk has a significant and different impact on the profitability of banks in GCC countries.

H3: The financial risks influence the financial profitability variations between IBs and CBs.

3- Data and methodology

3.1. Data sources and sample of the study

The data are obtained from the annual reports of both IBs and CBs and are taken from Orbis Bank Focus database. The research covers six years, from 2011 to 2016. This period of study is selected for the following reasons: First, the availability of the data taken from Orbis Bank database. Second, the financial stability after the global financial crisis 2007–2008. Third, the development of the banking sector in the GCC countries played an important role during the last few years in the economy. The study uses the panel data of 50 banks in GCC countries (20 full-fledged IBs and 30 CBs). The full banks names are shown in Appendix.1 in the appendices.

3.2. Methodology design

The model used in this study is the generalised least square (GLS) with fixed and random effects, instead of an ordinary least squares (OLS) method. Wooldridge (2002), cited in Tafri et al. (2009), states that a number of authors prefer the GLS model over the OLS model because under some assumptions such as when the data are not normally distributed, GLS seems to be more efficient compared to OLS method. The study uses two alternative measures of profitability: return on average assets (ROAA) and return on average equity (ROAE). The specific equations used are as follows:

Panel A: All banks

$$ROAA_{it},\ ROAE_{it} = \alpha_1+\beta_1 CR_{it} +\beta_2 LIQR_{it} +\beta_3 OPR_{it} +\beta_4 CAPR_{it}+\beta_5 (CR_{it}* LIQR_{it}) +\beta_6 (CR_{it}* BankType) +\beta_7 (LIQR_{it}* BankType) +\beta_8 (OPR_{it}* BankType) +\beta_9 (CAPR_{it}* BankType) +\beta_{10} ln\ BSIZE_{it} +\beta_{11} DE_{it} + \varepsilon$$

Panel B and C: IBs/CBs

$$ROAA_{it},\ ROAE_{it} = \alpha_1+\beta_1 CR_{it} +\beta_2 LIQR_{it} +\beta_3 OPR_{it} +\beta_4 CAPR_{it}+\beta_5 (CR_{it}* LIQR_{it}) + \beta_6 ln\ BSIZE_{it} +\beta_7 DE_{it} + \varepsilon$$

Where:

$ROAA_{it}$	Return on average assets of bank i for year t
$ROAE_{it}$	Return on average equity of bank i for year t
$CRit$	Credit risks of bank i for year t
$LIQR_{it}$	Liquidity risks of bank i for year t
OPR_{it}	Operational rate risk of bank i for year t
$CAPR_{it}$	Capital risk of bank i for year t
$(CR_{it}* LIQR_{it})$	Interaction between CR and LIQR of bank i for year t
$(CR_{it}* BankType)$	Interaction between CR and bank type* of bank i for year t
$(LIQR_{it}* BankType)$	Interaction between LIQR and bank type of bank i for year t
$(OPR_{it}* BankType)$	Interaction between OPR and bank type of bank i for year t
$(CAPR_{it}* BankType)$	Interaction between CAPR and bank type of bank i for year t
$ln\ BSIZE_{it}$	Log of total assets of bank i for year t
DE_{it}	Debt to equity of bank i for year t
ε	Error-term are not normally distributed

* BankType (Dummy variables): 1= Islamic banks, 0= Conventional banks.

3.3. Dependent variables

ROAA is used to determine banks' profitability. ROAA is defined as net income divided by average total assets. This reflects the capability of the banks' management to profit from their available assets. ROAE is used to determine banks' profitability as well. ROAE is defined as net income divided by average equity. This reflects the profit from the shareholders' standpoint.

3.4. Independent variables

Credit risk (CR) is defined as total loans divided by total assets. According to El Massah et al. (2015), the higher the ratio is, the lower the CR. Therefore, the current study assumes a negative relationship between CR and profitability. Liquidity risk (LIQR) is defined as total loans divided by total deposits. LIQR is used to measure bank liquidity. The higher the ratio is, the lower the LIQR will be (ibid). Thus, the current study assumes a negative relationship between LIQR and profitability. After the global financial crisis, the banking literature has drawn more attention to LIQR. Furthermore, operational rate risk (OPR) is defined as the total cost divided by total income. The higher the ratio is, the lower the OPR will be. Therefore, the current study expects a negative relationship between OPR and profitability. Capital risk (CAPR) is defined as equity capital divided by total assets. A higher ratio is associated with higher CAPR, so there is a positive relationship between CAPR and profitability (Youssef et al., 2015). Banks with a higher CAPR ratio seem to borrow less, because they face smaller cost of funding (Tafri et al., 2009). Therefore, less liquidity risk is associated with a higher CAPR.

3.5. Control variables

The current study examines the financial risks only, so their influence must be controlled. Lagged bank size (Ln_BSize) is defined as the natural log of the total assets. The bigger the bank is, the higher the profitability will be (Youssef et al., 2015; Ariffin and Tafri 2014). Moreover, the bigger the bank is, the lower the credit risk will be. Leverage ratio (DE) which defined as total liabilities divided by total equity is also used as control variable. The higher the ratio is, the lower the DE will be. Consequently, the current study expects a negative relationship between DE and profitability.

4- Results

4.1. Descriptive statistics

- ALL banks:

Table 1: Descriptive statistics 2011–2016

Ratios	N	Minimum	Maximum	Mean	Std. Deviation
ROAA	300	-4.354	5.421	1.49316	.959257
ROAE	300	-42.544	26.997	10.80546	6.573877
CR	300	8.034	94.321	61.80207	11.148647
LIQR	300	42.7	196.6	80.857	17.7623
OPR	300	15.739	189.955	46.27748	20.219435
CAPR	300	7.04	79.93	14.1866	5.66812
LnBsize	300	5.64	11.99	9.3586	1.04470
D/E	300	.251079	13.211830	6.646017	1.954222
Valid N (listwise)	300				

Jarque-Bera normality test: 1289; Probability: 0.000

Jarque-Bera test for Ho: normality.

The value of the Jarque-Bera test is significant, so we reject the null hypothesis and accept the alternative, meaning the data are not normally distributed. Therefore, the OLS panel data model is not the best estimation model to use, and the GLS model is better (Gujarati, 2003).

- Islamic banks:

Table 2: Descriptive statistics 2011–2016

	N	Minimum	Maximum	Mean	Std. Deviation
ROAA	120	-4.354	3.341	1.31070	1.047697
ROAE	120	-42.544	24.189	9.15706	8.261177
CR	120	29.362	94.321	63.26946	11.274648
LIQR	120	58.7	196.6	86.410	21.8201
OPR	120	21.179	97.586	55.01273	18.973509
CAPR	120	7.04	43.21	14.1386	4.97382
LnBsize	120	7.25	11.21	9.1192	.89668
D/E	120	1.314289	13.21183	6.75830	2.24735
Valid N (listwise)	120				

- Conventional banks:

Table 3: Descriptive statistics 2011–2016

	N	Minimum	Maximum	Mean	Std. Deviation
ROAA	180	-2.404	5.421	1.61479	.877564
ROAE	180	-3.984	26.997	11.90439	4.876521
CR	180	8.034	84.440	60.82381	10.986471
LIQR	180	42.728	107.251	77.15441	13.267412
OPR	180	15.739	189.955	40.45399	18.929250
CAPR	180	8.107	79.931	14.21864	6.100542
LnBsize	180	5.64	11.99	9.5182	1.10656
D/E	180	.251079129	11.335491	6.57115778	1.7341996
Valid N (listwise)	180				

Table 4: Two-sample t-test with equal variances 2011–2016

Group	Mean							
	Obs	ROAA	ROAE	CR	LIQR	OPR	CAPR	LnBsize	DE
Conventional banks	180	1.614794	11.9	60.82	77.15	40.45	14.22	9.52	6.57
Islamic banks	120	1.3107	9.16	63.27	86.41	55.01	14.14	9.12	6.75
significant level		0.0069***	0.0003***	0.06**	0.0000***	0.0000***	0.9	0.001***	0.4

***Significant at the 0.01 level
**Significant at the 0.05 level
*Significant at the 0.10 level

Tables 2 and 3 compare some of the basic elements of the descriptive statistic results for IBs and CBs. The results indicate that the profitability ratios' mean of the ROAA and ROAE for IBs are 1.31 and 9.16, respectively; they were lower than the ROAA and ROAE for CBs, which are 1.60 and 11.90, respectively, and significant at the 0.01 level, as shown in Table 4. These results are consistent with other research, such as Youssef and Samir (2015), El massah et al. (2015) and Amba and Almukharreq (2013). As can be seen from Tables 2 and 3, the financial risks ratios' mean of CR, LIQR, OPR and CAPR for CBs have better results compared to IBs and are significant at the 0.01 or 0.5 level, as shown in Table 4, except for CAPR, which is insignificant. Where the CR, LIQR and OPR ratios are higher with IBs and that lead to be less profitable compare to CBs due to the negative relationship between profitability, and CR, LIQR and OPR.

These results differ from El Massah et al.'s (2015) findings. A possible explanation for this might be that El Massah et al uses a small number of banks (16 banks) and have CR and LIQR data from the global financial crisis. But the results are consistent with Tafri et al (2009) regarding in LIQR. In addition, CAPR mean's ratio is slightly lower for IBs, leading to lower profitability compared to CBs. Furthermore, LnBsize is higher for CBs and significant at the 0.01 level, as shown in table 4, while DE is insignificant.

4.2. Correlations

- Islamic banks:

Table 5: Correlations of GCC IBs

		ROAA	ROAE	CR	LIQR	OPR	CAPR	LnBsize	D/E
ROAA	Pearson correlation	1	.940**	.310**	.048	-.782**	.291**	.476**	-.451**
	Sig. (2-tailed)		.000	.001	.601	.000	.001	.000	.000
	N	120	120	120	120	120	120	120	120
ROAE	Pearson correlation	.940**	1	.366**	-.026	-.702**	.031	.503**	-.203*
	Sig. (2-tailed)	.000		.000	.781	.000	.737	.000	.026
	N	120	120	120	120	120	120	120	120
CR	Pearson correlation	.310**	.366**	1	-.132	-.275**	-.088	.351**	-.003
	Sig. (2-tailed)	.001	.000		.149	.002	.339	.000	.976
	N	120	120	120	120	120	120	120	120
LIQR	Pearson correlation	.048	-.026	-.132	1	.039	.501**	-.238**	-.474**
	Sig. (2-tailed)	.601	.781	.149		.670	.000	.009	.000
	N	120	120	120	120	120	120	120	120
OPR	Pearson correlation	-.782**	-.702**	-.275**	.039	1	-.168	-.439**	.273**
	Sig. (2-tailed)	.000	.000	.002	.670		.067	.000	.003
	N	120	120	120	120	120	120	120	120
CAPR	Pearson correlation	.291**	.031	-.088	.501**	-.168	1	-.117	-.875**
	Sig. (2-tailed)	.001	.737	.339	.000	.067		.204	.000
	N	120	120	120	120	120	120	120	120
LnBsize	Pearson correlation	.476**	.503**	.351**	-.238**	-.439**	-.117	1	-.002
	Sig. (2-tailed)	.000	.000	.000	.009	.000	.204		.985
	N	120	120	120	120	120	120	120	120
D/E	Pearson correlation	-.451**	-.203*	-.003	-.474**	.273**	-.875**	-.002	1
	Sig. (2-tailed)	.000	.026	.976	.000	.003	.000	.985	
	N	120	120	120	120	120	120	120	120

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

The results of the correlational analysis of the variables for IBs are shown in Table 5. Both the ROAA and ROAE (dependent variables) as measures of profitability have a positive and significant correlation and move together. This result is in line with previous studies by Alkassim (2005) and Youssef and Samir (2015). CR, CAPR and LnBsize are the variables that have a positive and significant correlation with ROAA. Moreover, CR and LnBsize are the independents variables that have a positive and significant correlation with ROAE. On the other

hand, OPR and D/E have a negative and significant correlation with both ROAA and ROAE. However, LIQR has a positive correlation with ROAA and a negative and insignificant correlation with ROAE. This illustrates that the LIQR of IBs do not have an impact or provide a better level of profitability (Alkassim, 2005).

- Conventional banks:

Table 6: Correlations of GCC CBs

		ROAA	ROAE	CR	LIQR	OPR	CAPR	LnBsize	D/E
ROAA	Pearson correlation	1	.874**	.325**	.326**	-.609**	-.160*	.219**	-.232**
	Sig. (2-tailed)		.000	.000	.000	.000	.032	.003	.002
	N	180	180	180	180	180	180	180	180
ROAE	Pearson correlation	.874**	1	.259**	.213**	-.567**	-.221**	.220**	.061
	Sig. (2-tailed)	.000		.000	.004	.000	.003	.003	.417
	N	180	180	180	180	180	180	180	180
CR	Pearson correlation	.325**	.259**	1	.922**	-.332**	-.316**	-.186*	.060
	Sig. (2-tailed)	.000	.000		.000	.000	.000	.012	.422
	N	180	180	180	180	180	180	180	180
LIQR	Pearson correlation	.326**	.213**	.922**	1	-.205**	-.057	-.256**	-.182*
	Sig. (2-tailed)	.000	.004	.000		.006	.450	.001	.014
	N	180	180	180	180	180	180	180	180
OPR	Pearson correlation	-.609**	-.567**	-.332**	-.205**	1	.583**	-.534**	-.162*
	Sig. (2-tailed)	.000	.000	.000	.006		.000	.000	.030
	N	180	180	180	180	180	180	180	180
CAPR	Pearson Correlation	-.160*	-.221**	-.316**	-.057	.583**	1	-.303**	-.728**
	Sig. (2-tailed)	.032	.003	.000	.450	.000		.000	.000
	N	180	180	180	180	180	180	180	180
LnBsize	Pearson correlation	.219**	.220**	-.186*	-.256**	-.534**	-.303**	1	.088
	Sig. (2-tailed)	.003	.003	.012	.001	.000	.000		.238
	N	180	180	180	180	180	180	180	180
D/E	Pearson correlation	-.232**	.061	.060	-.182*	-.162*	-.728**	.088	1
	Sig. (2-tailed)	.002	.417	.422	.014	.030	.000	.238	
	N	180	180	180	180	180	180	180	180

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Table 6 presents the correlation between the different variables for CBs. In line with IBs, the ROAA and ROAE have a positive and significant correlation and move together. CR, LIQR and LnBsize are the independents variables that have a positive and significant correlation with ROAA. Furthermore, CR, LIQR, LnBsize and D/E are the independents variables that have a

positive and significant correlation with ROAE. On the other hand, OPR and CAPR have a negative and significant correlation with both ROAA and ROAE while D/E has a negative and significant correlation with ROAA. In addition, LIQR has a significant positive correlation with CR. This is consistent with Hertrich's (2015) finding of a highly positive relation between the liquidity risk and credit risk in firms.

According to Anderson et al. (1990), as cited in Odit et al. (2011), the "rule of thumb" could be a problem if the correlation between the two variables is bigger than 0.7 (positive one). Because the correlation between ROAA and ROAE in both types of banks exceeds 0.7, it is high enough to indicate a multicollinearity problem. Gujarati (2003) states the same idea, but the only different is if the correlation between the two variables is larger than 0.8.

4.3. Panel unit roots test ADF

To analyse if the data are stationarity in the model, the Dickey-Fuller test for a unit root is appropriate for unbalanced panel data regression. According to Davydenko (2011), stationary indicates that the mean, standard deviation and autocorrelation of the data are always consistent. Table 7 presents the results for the ADF tests, showing that all variables do not have unit roots; thus, all the variables are stationary. The p-value is 0.000, rejecting the null hypothesis and accepting the alternative.

Table 7: ADF

Dickey-Fuller test for unit root		Number of obs = 300		
		--------- Interpolated Dickey-Fuller ---------		
	Test Statistic	1% Critical Value	5% Critical Value	10% Critical Value
ROAA	-12.736	-3.474	-2.883	-2.573
ROAE	-14.593	-3.474	-2.883	-2.573
CR	-11.396	-3.474	-2.883	-2.573
LIQR	-14.501	-3.474	-2.883	-2.573
OPR	-14.822	-3.474	-2.883	-2.573
CAPR	-14.961	-3.474	-2.883	-2.573
LnBsize	-11.073	-3.474	-2.883	-2.573
D/E	-14.978	-3.474	-2.883	-2.573
MacKinnon approximate p-value for all variables = 0.0000				

4.4. Multivariate results

Table 8 provides the regression evaluations using ROAA as the dependent variable for the comprehensive data of both IBs and CBs together (Panel A). In addition, panel B shows the regression analysis of IBs while panel C shows it for CBs.

Table 8: Result with ROAA as dependent variable

Panel A: All banks

Number of obs	=	**300**
F(12, 287)	=	36.68
Prob > F	=	0.000
R-squared	=	0.6053
Adj R-squared	=	0.5888
Root MSE	=	0.61512

ROAA	Coef.	P>t OLS	P>t GLS	Coef. Fx	Coef. Rd
Bank_type	0.1682	0.068*	0.067*	-	0.2394 (0.154)
CR	0.0118	0.574	0.574	0.1021 (0.000)**	0.0673 (0.006)**
LIQR	0.0113	0.519	0.518	-0.0091 (0.619)	-0.0061 (0.725)
OPR	-0.0270	0.000**	0.000**	-0.0303 (0.000)**	-0.0339 (0.000)**
CAPR	-0.0051	0.739	0.738	0.0352 (0.042)**	0.02673 (0.083)*
CR*LIQR	-0.0000	0.651	0.651	-0.0004 (0.030)**	-0.0003 (0.101)
CR*BankType	0.0078	0.655	0.655	-0.0064 (0.785)	-0.0073 (0.709)
LIQR*BankType	-0.0084	0.513	0.513	0.0256 (0.118)	0.02336 (0.096)*
OPR*BankType	-0.0092	0.042**	0.041**	-0.0248 (0.001)**	-0.0144 (0.014)**
CAPR*BankType	-0.0213	0.257	0.256	-0.0313 (0.171)	-0.0313 (0.112)
LnBsize	0.0193	0.665	0.665	-0.521 (0.000)**	-0.2022 (0.002)**
DE	-0.1790	0.000**	0.000**	-0.0541 (0.117)	-0.0889 (0.008)**
_cons	2.6233	0.047**	0.046**	4.6343 (0.004)**	3.1881 (0.027)**
	Durbin-Watson d-statistic (210)				1.973818

Panel B: Islamic banks

Number of obs	=	**120**
F(7, 112)	=	43.1
Prob > F	=	0.000
R-squared	=	0.7293
Adj R-squared	=	0.7124
Root MSE	=	0.56191

ROAA	Coef.	P>t OLS	P>t GLS	Coef. Fx	Coef. Rd
CR	0.0739	0.01**	0.009**	0.1742 (000)**	0.0911 (0.008)**
LIQR	0.0277	0.021**	0.019**	0.0431 (0.011)**	0.0338 (0.016)**

OPR	-0.0321	0.000**	0.000**	-0.0547 (0.000)**	-0.0403 (0.000)**
CAPR	-0.0041	0.869	0.869	0.0284 (0.366)	0.0165 (0.535)
CRLIQR	-0.0006	0.017**	0.016**	-0.0011 (0.002)**	-0.0007 (0.020)**
LnBsize	0.2181	0.002**	0.002**	-0.5371 (0.004)**	0.0685 (0.494)
DE	-0.1512	0.005**	0.004**	-0.0376 (0.510)	-0.0766 (0.165)
_cons	-1.5036	0.458	0.456	0.6842 (0.813)	-1.6055 (0.497)

Panel C: Conventional banks

Number of obs	=	**180**
F(7, 172)	=	25.49
Prob > F	=	0.000
R-squared	=	0.5092
Adj R-squared	=	0.4892
Root MSE	=	0.62721

ROAA	Coef.	P>t OLS	P>t GLS	Coef. Fx	Coef. Rd
CR	-0.0207	0.439	0.438	0.0440 (1.149)	0.0292 (0.301)
LIQR	-0.0133	0.557	0.556	-0.0446 (0.026)**	0.0377 (0.053)*
OPR	-0.0310	0.000**	0.000**	-0.0315 (0.000)**	-0.0347 (0.000)**
CAPR	-0.0125	0.484	0.483	0.0165 (0.350)	0.0123 (0.450)
CRLIQR	0.0003	0.319	0.318	0.0001 (0.530)	0.0001 (0.559)
LnBsize	-0.0651	0.262	0.260	-0.5493 (0.000)**	-0.2720 (0.000)**
DE	-0.1920	0.000**	0.000**	-0.0695 (0.103)	-0.1066 (0.010)**
_cons	5.7641	0.001**	0.001**	1.6842 (0.000)**	-1.6055 (0.000)**

**. Is significant at the 0.05 level.
*. Is significant at the 0.10 level.

Table 8 provides the coefficient of the GLS and OLS data panel using ROAA as the dependent variable, along with the coefficient for the fixed effects models (FEM) and random effect models (REM). GLS regression is used as a benchmark. In all the models, the F-test is significant. This confirms the satisfactory of the models. Moreover, the relationship between the profitability (ROAA) and financial risks appears to be satisfying.

Table 9 provides the regression evaluations using ROAE as a dependent variable for the comprehensive data of IBs and CBs together (Panel A). In addition, panel B shows the regression analysis of IBs, and panel C shows it for CBs.

Table 9: Result with ROAE as the dependent variable

Panel A: All banks

Number of obs	=	**300**
F(12, 287)	=	23.79
Prob > F	=	0.000
R-squared	=	0.4986
Adj R-squared	=	0.4777
Root MSE	=	4.751

ROAE	Coef.	P>t OLS	P>t GLS	Coef. Fx	Coef. Rd
Bank_type	0.1552	0.827	0.827	-	0.7844 (0.526)
CR	0.2393	0.143	0.142	0.5909 (0.010)**	0.3978 (0.042)**
LIQR	0.1035	0.445	0.445	0.1197 (0.433)	0.0774 (0.586)
OPR	-0.1448	0.000**	0.000**	-0.1497 (0.002)**	-0.1858 (0.000)**
CAPR	0.1898	0.109	0.108	0.3161 (0.028)**	0.3166 (0.010)**
CR*LIQR	-0.0020	0.199	0.198	-0.0049 (0.010)**	-0.0033 (0.049)**
CR*BankType	0.1037	0.446	0.445	0.3663 (0.064)*	0.1713 (0.278)
LIQR*BankType	0.0168	0.866	0.866	0.0261 (0.847)	0.1077 (0.337)
OPR*BankType	-0.1369	0.000**	0.000**	-0.3133 (0.000)**	-0.1988 (0.000)**
CAPR*BankType	-0.3122	0.032**	0.031**	-.2119 (0.264)	-0.4641 (0.021)**
LnBsize	0.4148	0.231	0.230	-3.1220 (0.000)**	-0.9838 (0.051)*
DE	0.0309	0.915	0.915	0.3970 (0.166)	0.2712 (0.319)
_cons	-1.8998	0.852	0.852	19.3639 (0.149)	8.7048 (0.451)
Durbin-Watson d-statistic (300)				2.085153	

Panel B: Islamic banks

Number of obs	=	**120**
F(7, 112)	=	25.51
Prob > F	=	0.000
R-squared	=	0.6146
Adj R-squared	=	0.5905
Root MSE	=	5.2867

ROAE	Coef.	P>t OLS	P>t GLS	Coef. Fx	Coef. Rd
CR	0.8547	0.002**	0.001**	1.5016 (001)**	0.8576 (0.008)**
LIQR	0.3475	0.002**	0.002**	0.3371 (0.043)**	0.03362 (0.012)**

OPR	-0.2328	0.000**	0.000**	-0.4626 (0.000)**	-0.3053 (0.000)**
CAPR	-0.2729	0.246	0.243	0.0817 (0.792)	-0.1259 (0.619)
CRLIQR	-0.0071	0.004**	0.004**	-0.0095 (0.008)**	-0.0066 (0.022)**
LnBsize	1.9985	0.003**	0.002**	-3.8121 (0.037)**	0.8591 (0.351)
DE	-0.6693	0.181	0.178	-0.0158 (0.978)	-0.2308 (0.662)
_cons	-33.367	0.082*	0.076*	-3.7275 (0.896)	-2.3100 (0.252)

Panel C: Conventional banks

Number of obs	=	**180**
F(7, 172)	=	14.97
Prob > F	=	0.000
R-squared	=	0.3786
Adj R-squared	=	0.3533
Root MSE	=	3.9217

ROAE	Coef.	P>t OLS	P>t GLS	Coef. Fx	Coef. Rd
CR	-0.1425	0.397	0.395	0.1928 (0.316)	0.1250 (0.479)
LIQR	-0.1164	0.413	0.412	-0.1156 (0.358)	-0.1121 (0.357)
OPR	-0.1984	0.000**	0.000**	-0.1710 (0.000)**	-0.2024 (0.000)**
CAPR	0.2749	0.015**	0.014**	0.2740 (0.015)**	0.2973 (0.004)**
CRLIQR	0.0022	0.239	0.238	-0.0001 (0.922)	-0.00001 (0.991)
LnBsize	-0.2080	0.566	0.565	-3.2965 (0.000)**	-1.6840 (0.001)**
DE	0.5699	0.071*	0.069*	0.7079 (0.009)**	0.6044 (0.019)**
_cons	21.101	0.055*	0.054*	39.7275 (0.001)*	28.878 (0.009)**

**. Is significant at the 0.05 level.
*. Is significant at the 0.10 level.

Table 9 provides the coefficient of the GLS and OLS data panel using ROAE as the dependent variable, along with the coefficient for FEM and REM. A GLS regression is used as the benchmark. In all the models, the F-test is significant. This confirms the satisfactory of the models. Moreover, the relationship between the profitability (ROAE) and financial risks seems to be satisfying, at least to some extent.

Table 8 and 9 indicate the value of Durbin-Watson d-statistic for OLS or GLM is 1.97 using ROAA and 2.08 using ROAE. Therefore, the error terms have a positive autocorrelation with ROAA because the value is less than two.

4.5. Specification test

To choose between FEM and REM, we apply a Hausman test, developed by Levin (2002). A null hypothesis under the Hausman test means that the effects are uncorrelated with each other in the regression; hence, if we cannot reject the null hypothesis, REM would be appropriate. On the other hand, if we reject the hypothesis and accept the alternative, FEM would be appropriate. As seen in Table 10, the Hausman tests reject the null hypothesis, which is REM, and accept the alternative, which is FEM, when using ROAA and ROAE as dependent variables for all banks and CBs. These results match those observed in Tafri et al.'s (2009) study, except for ROAE for CBs, which uses REM in favor of FEM. In the same vein, IBs, as panel B illustrates, that the Hausman test reject the null hypothesis and accept the alternative. This outcome matches that of Ariffin and Tafri (2014), who find that FEM is appropriate in favor of REM.

Table 10: Hausman test (ROAA and ROAE)

Panel A: All banks	
Test: Ho: difference in coefficients not systematic	
chi2(6) = (b-B)'[(V_b-V_B)^(-1)](b-B) =	48.78 and 31.69
Prob>chi2 =	0.0000 and 0.0009
Panel B: Islamic banks	
chi2(6) = (b-B)'[(V_b-V_B)^(-1)](b-B) =	17.40 and 95.74
Prob>chi2 =	0.0150 and 0.0000
Panel C: Conventional banks	
chi2(6) = (b-B)'[(V_b-V_B)^(-1)](b-B) =	20.38 and 14.18
Prob>chi2 =	0.0048 and 0.0481

We reject the null hypothesis; thus, FEM is appropriate for all panels.

Table 11: Multivariate results using ROAA as the dependent variable

Ratios	Types of Banks		
	All banks (FEM)	**Islamic (FEM)**	**Conventional (FEM)**
CR	0.1021 (0.000)**	0.1742 (000)**	0.0440 (1.149)
LIQR	-0.0091 (0.619)	0.0431 (0.011)**	-0.0446 (0.026)**
OPR	-0.0303 (0.000)**	-0.0547 (0.000)**	-0.0315 (0.000)**
CAPR	0.0352 (0.042)**	0.0284 (0.366)	0.0165 (0.350)
CR*LIQR	-0.0004 (0.030)**	-0.0011 (0.002)**	0.0001 (0.530)
CR*BankType	-0.0064 (0.785)	-	-
LIQR*BankType	0.0256 (0.118)	-	-
OPR*BankType	-0.0248 (0.001)**	-	-
CAPR*BankType	-0.0313 (0.171)	-	-
LnBsize	-0.521 (0.000)**	-0.5371 (0.004)**	-0.5493 (0.000)**
DE	-0.0541 (0.117)	-0.0376 (0.510)	-0.0695 (0.103)
No. of observations	300	120	180
Adj R2	**0.35**	**0.48**	**0.43**

**. Is significant at the 0.05 level.
*. Is significant at the 0.10 level.

Table 11 shows the coefficient of all banks (FEM), IBs (FEM) and CBs (FEM) using ROAA as the dependent variable. In addition, IBs contain 120 observations of 20 banks over six years, and CBs contain 180 observations of 30 banks over the same period. The value of all banks' Adj R2 with FEM is nearly 0.35. This means that 35% of ROAA variation for all banks is because of the variation in the variables. Although there is 65% left that could be produced by not included variables which could explain the profitability. Furthermore, the value of IBs' Adj R2 with FEM is 0.48. This means 48% of ROAA variation for IBs is because of the variables' variation. Moreover, the value of CBs' Adj R2 with FEM is nearly 0.43, meaning 43% of ROAA variation for CBs is because of the variation in the variables.

Regarding FEM for all banks, from nine independent and two control variables, there are six variables, CR, OPR, CAPR, CR*LIQR, OPR*BankType and LnBsize, that are significant. In addition, FEM for IBs shows that five variables are significant from five independent and two

control variables while, just three are significant for CBs. This result shows that CR is significant at the 5% level and has a positive impact on the profitability (ROAA) for all banks and IBs. Thus, a 1% increase in CR will lead the profitability to increase by nearly 10% and 17%, respectively. A possible explanation for this might be that many borrowers in GCC countries resort to banks that offer Sharia-compliant loans. This result contradicts Tafri et al.'s (2009) and Ariffin and Tafri's (2014) results. Moreover, OPR is significant at the 5% level and has a negative impact on the profitability (ROAA) for all samples. Therefore, a 1% increase in OPR will lead to a decrease in profitability by 3%, 5% and 3%, respectively. This result is consistent with Zeitun's (2012) finding.

However, the LIQR is insignificant for all banks but significant and positive for IBs and significant and negative for CBs. This result may be explained by the fact that CBs face more risk of non-repayment of loans, thus resulting in bad debts that negatively affect profitability. CAPR is only significant for all banks and has a positive impact on the profitability (ROAA). This relationship may partly be explained by banks that have a higher CAPR ratio seem to borrow less because they face less costs when it comes to funding. Therefore, less liquidity risk is associated with a higher CAPR. The finding is in line with Athanasoglou et al. (2008) and Trujillo-Ponce (2013). Furthermore, the interaction of CR and LIQR on ROAA is negative and significant for all banks and IBs.

Concerning the interaction of bank type and financial risks, only the interaction of IBs with OPR is significant and has a negative impact on profitability (ROAA). Thus, a 1% increase in OPR*BankType will lead the profitability to decrease by nearly 2.5%. The result indicates that the cost to income ratio, which measures the operating efficiency in CBs, are more efficient in operating and having less risk compared to IBs. Regarding the control variables, the result shows that LnBsize is highly significant at the 5% level and has a negative impact on profitability (ROAA) for all samples. Thus, a 1% increase in LnBsize will lead the profitability to decrease by nearly 52%, 53% and 55%, respectively, which is a high percentage and a surprising result. This finding is contrary to Vijayakumar and Tamizhselvan's (2010) and Ozgulbas et al.'s (2006) studies but concurs with Bashir and Hassan (2004). On the other hand, DE is negative and insignificant for all samples.

Table 12: Multivariate results using ROAE as the dependent variable

Ratios	Types of Banks		
	All banks (FEM)	**Islamic (FEM)**	**Conventional (FEM)**
CR	0.5909 (0.010)**	1.5016 (001)**	0.1928 (0.316)
LIQR	0.1197 (0.433)	0.3371 (0.043)**	-0.1156 (0.358)
OPR	-0.1497 (0.002)**	-0.4626 (0.000)**	-0.1710 (0.000)**
CAPR	0.3161 (0.028)**	0.0817 (0.792)	0.2740 (0.015)**
CR*LIQR	-0.0049 (0.010)**	-0.0095 (0.008)**	-0.0001 (0.922)
CR*BankType	0.3663 (0.064)*	-	-
LIQR*BankType	0.0261 (0.847)	-	-
OPR*BankType	-0.3133 (0.000)**	-	-
CAPR*BankType	-.2119 (0.264)	-	-
LnBsize	-3.1220 (0.000)**	-3.8121 (0.037)**	-3.2965 (0.000)**
DE	0.3970 (0.166)	-0.0158 (0.978)	0.7079 (0.009)**
No. of observations	300	120	180
Adj R2	**0.31**	**0.42**	**0.28**

**. Is significant at the 0.05 level.
*. Is significant at the 0.10 level.

Table 12 shows the coefficient of all banks (FEM), IBs (REM) and CBs (FEM) using ROAE as the dependent variable. IBs contain 120 observations of 20 banks over six years, and CBs contain 180 observations of 20 banks over the same period. The value of all banks' Adj R2 with FEM is nearly 0.31. This means 31% of ROAE variation for all banks is because of the variation in the variables. While 69% which is a huge percentage could be produced by not included variables which could explain the profitability. Furthermore, the value of IBs' Adj R2 with FEM is nearly 0.42. This means 42% of ROAE variation for IBs is because of the variables' variation. Moreover, the value of CBs' Adj R2 with FEM is nearly 0.28. This means 28% of ROAE variation for CBs is because of the variation in the variables.

Regarding FEM for all banks, from nine independent and two control variables, there are seven variables, CR, OPR, CAPR, CR*LIQR, CR*BankType, OPR*BankType and LnBsize, that are significant. In addition, FEM for IBs shows that five variables are significant from five

independent and two control variables while just four are significant for CBs. The results show that CR is significant at the 5% level and has a positive impact on profitability (ROAE) for all banks and IBs. Thus, a 1% increase in CR will make the profitability increase by nearly 59% and 150%, respectively, which is a high percentage and a surprising result. Moreover, OPR is significant at the 5% level and has a negative impact on profitability (ROAE) for all samples. Therefore, a 1% increase in OPR will lead to a decrease profitability by 15%, 46% and 17%, respectively. However, LIQR is insignificant for all banks but significant and positive for IBs. CAPR is significant for all banks and CBs and has a positive impact on profitability (ROAE). Furthermore, the interaction of CR and LIQR on ROAE is negative and significant for all banks and IBs.

Concerning the interaction of bank type and financial risks, only the interaction of IBs with OPR and CR are significant and have a negative and positive impact, respectively, on profitability (ROAE). Thus, a 1% increase in OPR*BankType will make the profitability to decrease by nearly 31%. A 1% increase in CR*BankType will lead the profitability to increase by nearly 37%. Regarding the control variables, the results show that LnBsize is highly significant at the 5% level and has a negative impact on the profitability (ROAE) for all samples. Thus, a 1% increase in LnBsize will lead the profitability to decrease by nearly 312%, 381% and 330%, respectively, which is a high percentage and a surprising result. On the other hand, DE is insignificant for all banks and IBs but positive and significant for CBs.

5- Conclusion

Financial risks are important to understand in a banking system. Knowing these risks and their impact on profitability could help bank officials manage them properly. Therefore, the aim of the present research is to examine the relationship between financial risks and the profitability between IBs and CBs in GCC countries, as well as whether these financial risks impact the profitability variations between IBs and CBs. The results show that IBs' ROAE in 2016 outperformed and was more profitable compared to CBs. Moreover, the trend shows that IBs could continue at this performance level in the long term. There are several possible explanations for this pattern. One of them is that IBs have become trusted by customers and shareholders after not being significantly affected by the recent global financial crisis in 2008. In conclusion, it is difficult to indicate if financial risks have an effect on banks' profitability (summary of the findings is in Table 13 below).

Table 13: Summary of the hypotheses' results

Hypotheses	Results	Comments on ROAA	Comments on ROAE
H1: **Financial risks have a significant influence on financial profitability of banks in GCC countries.**	Significant except LIQR	CR, OPR and CAPR have a significant influence on financial profitability	CR, OPR and CAPR have a significant influence on financial profitability and a higher impact compared to ROAA
H2: **Each type of financial risk has a significant and different impact on the profitability of banks in GCC countries.**	Significant except LIQR	CR, OPR and CAPR have a significant and different impact on profitability	CR, OPR and CAPR have a significant and different impact on profitability
H3: **Financial risks influence the financial profitability variations between IBs and CBs.**	Significant	CR, LIQR and OPR affect the financial profitability variations between IBs and CBs	CR, LIQR, OPR and CAPR affect the financial profitability variations between IBs and CBs

A key strength of this study is the higher number of banks tested compared to previous studies. Moreover, the present study provides additional empirical evidence such as: ADF and Durbin-Watson d-statistic tests. The study has mixed results, some concurring with the current literature and some contradicting it. To the author's knowledge, this is the first study to investigate the effect of financial risks on the profitability of Islamic and conventional banks in GCC countries. The most important limitation lies in the fact that the research only covers 2011 to 2016. This is because of the availability of the data. Further, because the study is limited to 8,000 words, it is not possible to investigate and discuss further analyses. Consequently, it would be interesting to assess the effects of Sharia-compliant products provided by both types of banks in GCC countries on profitability and whether the financial risks have different impacts on Sharia-compliant products' revenue between IBs and CBs.

Appendices

Appendix1:

No.	Islamic Bank	Country
1	Abu Dhabi Islamic Bank - Public Joint Stock Co.	UAE
2	Al Hilal Bank PJSC	UAE
3	Dubai Islamic Bank PJSC	UAE
4	Emirates Islamic Bank PJSC	UAE
5	Sharjah Islamic Bank	UAE
6	Al-Salam Bank-Bahrain B.S.C.	BAH
7	Bahrain Islamic Bank B.S.C.	BAH
8	Albaraka Banking Group B.S.C.	BAH
9	Ithmaar Holding B.S.C.	BAH
10	Boubyan Bank KSCP	KUW
11	Kuwait Finance House	KUW
12	Kuwait International Bank	KUW
13	Bank Muscat SAOG	OMA
14	Masraf Al Rayan (Q.S.C.)	QAT
15	Qatar International Islamic Bank	QAT
16	Qatar Islamic Bank SAQ	QAT
17	Bank AlJazira JSC	SAU
18	Al Rajhi Bank Public Joint Stock Company	SAU
19	Alinma Bank Public joint stock company	SAU
20	Bank AlBilad	SAU
No.	Conventional Bank	Country
1	Union National Bank	UAE
2	Mashreqbank PSC	UAE
3	National Bank of Ras Al-Khaimah (P.S.C.) (The)-RAKBANK	UAE
4	National Bank of Abu Dhabi	UAE
5	Emirates NBD PJSC	UAE
6	National Bank of Fujairah PJSC	UAE
7	Gulf International Bank BSC	BAH
8	Arab Banking Corporation BSC-Bank ABC	BAH
9	Ahli United Bank BSC	BAH
10	BBK B.S.C.	BAH
11	Al Ahli Bank of Kuwait (KSC)	KUW
12	National Bank of Kuwait S.A.K.	KUW
13	Warba Bank	KUW
14	Burgan Bank KPSC	KUW
15	Gulf Bank KSC (The)	KUW
16	Al Khalij Commercial Bank	QAT
17	Qatar National Bank	QAT
18	The Commercial Bank (QSC)	QAT
19	Doha Bank	QAT
20	Ahli Bank QSC	QAT
21	National Commercial Bank (The)	SAU
22	Riyad Bank	SAU
23	Samba Financial Group	SAU
24	Saudi Investment Bank (The)	SAU
25	Banque Saudi Fransi JSC	SAU
26	Saudi British Bank JSC (The)	SAU
27	National Bank of Oman (SAOG)	OMA
28	Bank Sohar SAOG	OMA
29	Bank Dhofar SAOG	OMA
30	Ahli Bank SAOG	OMA

Appendix2:

Average		
	ROAA	
Year	ISALAMIC BANKS	CONVENTIONAL BANKS
2016	1.33	1.33
2015	1.44	1.61
2014	1.52	1.71
2013	1.40	1.69
2012	1.15	1.75
2011	1.03	1.60
	ROAE	
Year	ISALAMIC BANKS	CONVENTIONAL BANKS
2016	9.85	9.75
2015	10.95	11.91
2014	11.30	12.67
2013	9.56	12.45
2012	6.86	12.73
2011	6.43	11.92
	CR	
Year	ISALAMIC BANKS	CONVENTIONAL BANKS
2016	64.17	62.89
2015	65.69	62.86
2014	63.86	61.13
2013	62.23	60.31
2012	63.03	59.59
2011	60.63	58.16
	LIQR	
Year	ISALAMIC BANKS	CONVENTIONAL BANKS
2016	85.37	79.76
2015	87.49	79.50
2014	86.38	76.82
2013	87.47	75.80
2012	87.41	76.60
2011	84.33	74.44
	OPR	
Year	ISALAMIC BANKS	CONVENTIONAL BANKS
2016	52.03	40.78
2015	51.79	39.44
2014	53.12	39.20
2013	54.54	41.10
2012	58.09	39.01
2011	60.51	43.19
	CAPR	
Year	ISALAMIC BANKS	CONVENTIONAL BANKS
2016	13.45	13.60
2015	13.09	13.50
2014	13.26	13.40
2013	14.34	13.81
2012	14.80	14.96
2011	15.89	16.06
	Bsize	
Year	ISALAMIC BANKS	CONVENTIONAL BANKS
2016	19603.38	31349.33
2015	15438.30	25,868.31
2014	13587.80	23,743.00

2013	11394.35	21,302.70
2012	10808.59	20,182.11
2011	9604.82	19,026.17

DE

Year	ISALAMIC BANKS	CONVENTIONAL BANKS
2016	6.81	6.62
2015	7.11	6.63
2014	6.95	6.76
2013	6.61	6.65
2012	6.67	6.38
2011	6.39	6.38

Figure 3:

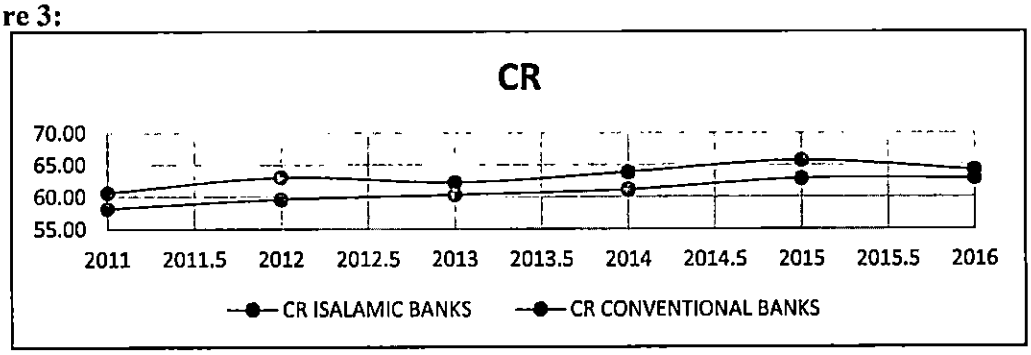


Figure 3 above provides the Credit Risk for both types of banks. As it can be seen that Islamic banks have higher CR ratio over the past 6 years and that indicates lower CR and that lead to be less profitable compare to Conventional banks. The pattern is slightly parallel between Islamic and Conventional banks from 2011 to 2016.

Figure 4:

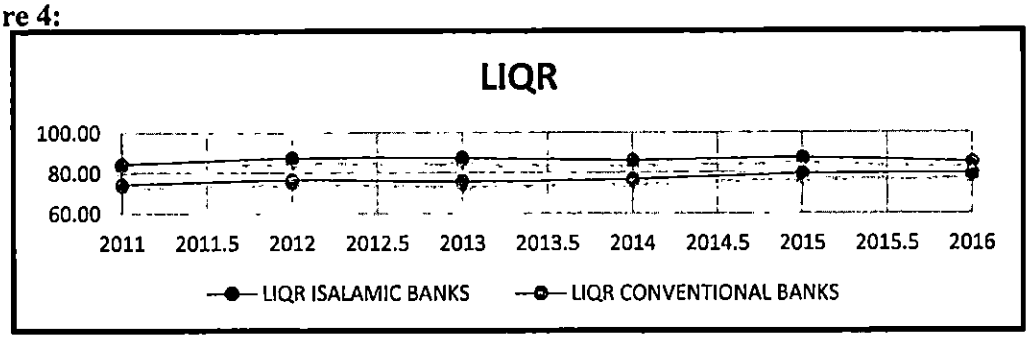


Figure 3 above provides the Liquidity Risk for both types of banks. As it can be seen that Islamic banks have higher LIQR ratio over the past 6 years and that indicates lower LIQR and that lead to be less profitable compare to Conventional banks. The pattern is slightly parallel between Islamic and Conventional banks from 2011 to 2016.

Figure 5:

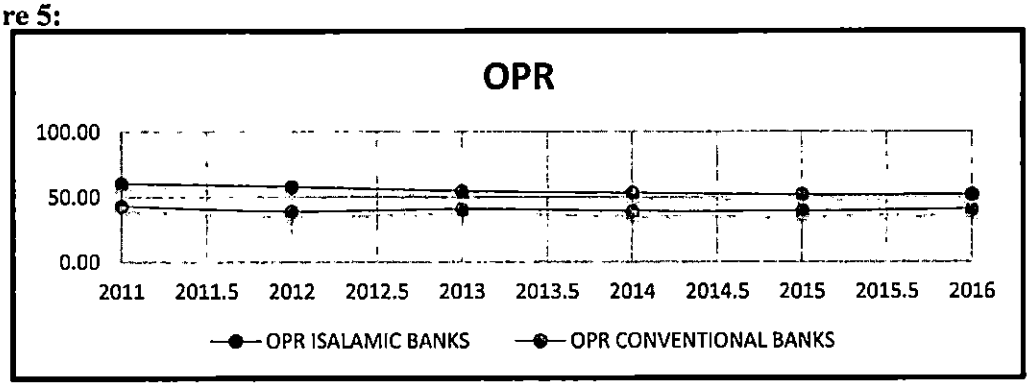


Figure 5 indicates that the Operational Risk for both types of banks. As it can be seen that Islamic banks have higher OPR ratio over the past 6 years and that indicates higher OPR and that lead to be less profitable compare to Conventional banks. The pattern as well is slightly parallel between Islamic and Conventional banks from 2011 to 2016.

Figure 6:

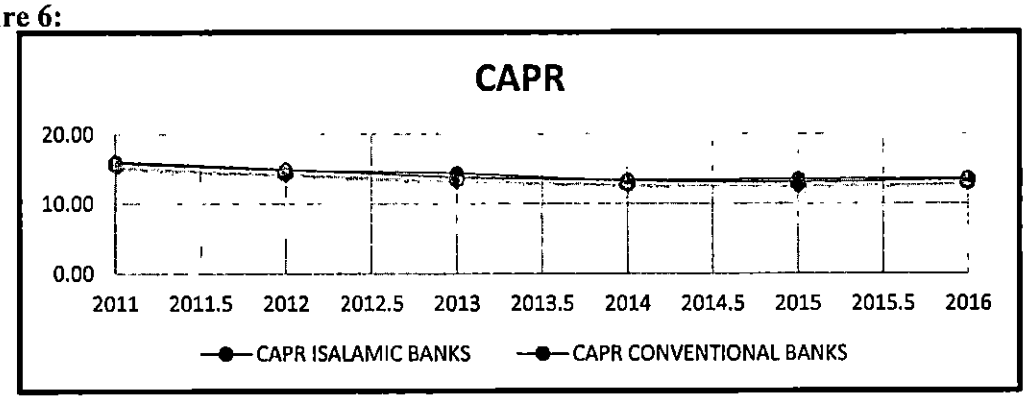


Figure 6 indicates that both banks have nearly the same result for Capital Risk.

Figure 7:

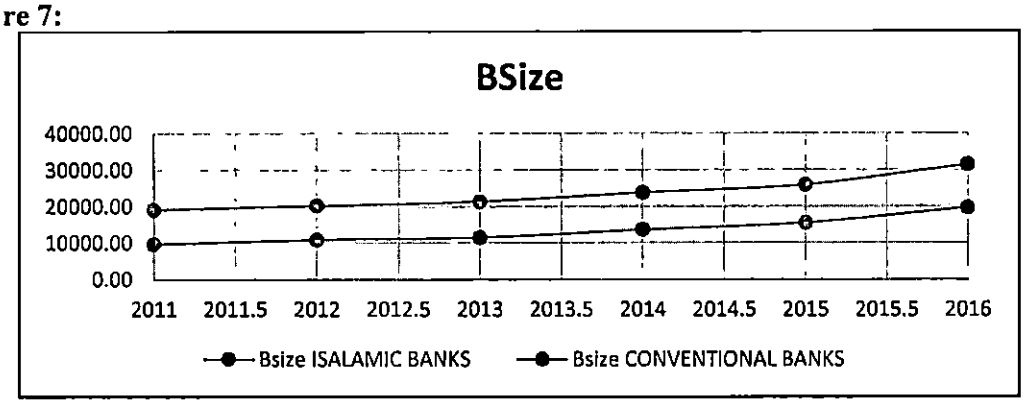


Figure 7 above shows the Bank size for both types of banks. From the Figure 7 above we can see that Conventional banks have higher total assets compared to Islamic banks from 20011 to 2016. However, the bank size for both banks is getting bigger over the years and that result of increase the value of the banks.

Figure 8:

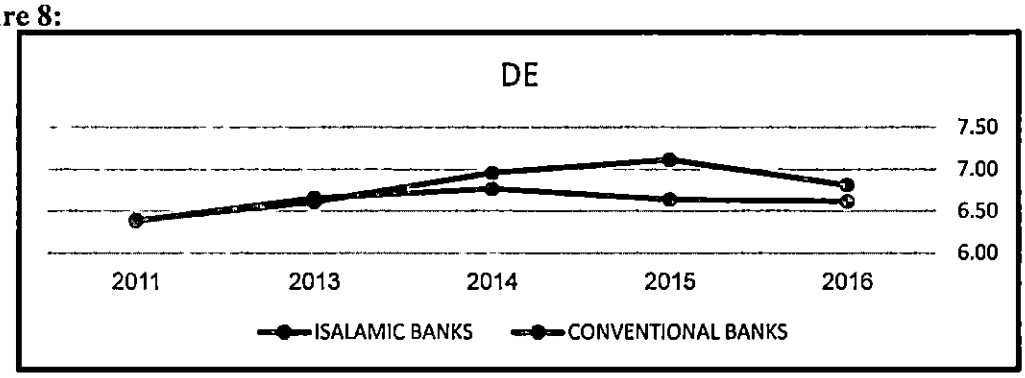


Figure 8 above shows the DE for the GCC countries. As it can be seen that Islamic banks have higher DE ratio over the past 6 years and that indicates lower DE and that lead to be less profitable compare to Conventional banks. Noticeable that Conventional banks in 2013 had higher DE ratio compared to Islamic banks. That could be a result of higher risk taken by conventional banks after the recovery of the global financial crisis.

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