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BETWEEN TWO CRISES: DO ISLAMIC BANKS SUFFER?

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ABSTRACT

This study compares the effects of the Global Financial crisis and COVID-19 pandemic on the Islamic banking sector in the Gulf Cooperation Council (GCC). Using a sample of 32 Islamic banks observed over the period 2006 to 2020, the paper reveals that the two events have different effects on the Islamic banking sector. Overall, Islamic banks are not as profitable and resilient in the COVID-19 pandemic as in the global financial crisis. However, Islamic banks in GCC countries has gained experience and become more efficient and stable over time. The policy implication of this study supports digitalization and the increased prominence of financial technology (Fintech). In addition, monetary authorities in the GCC have to introduce innovative products to help the Islamic banking sector to be more resilient to such crises.

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I. INTRODUCTION

The COVID-19 pandemic has been a "hot subject" since early 2020. The sickness first appeared on December 31, 2019, when a large number of strange pneumonia cases were detected in Wuhan, China (Sohrabi et al., 2020). Within few months, there were millions of contagions and deaths worldwide. The World Health Organization declared COVID-19 as "a worldwide pandemic" on March 11, 2020. (WHO, 2021). The COVID-19 is considered as one of the world's fatal pandemic in the current century, with far-reaching consequences for many sectors including the financial sector (Mann, 2020). Indeed, the financial markets and banking sector are among the most adversely affected by this pandemic (Wronka, 2021). Banks remains susceptible in times of economic downturn due to excessive transaction volume and nonperforming loans. Alike in prior HIV outbreaks, significant deposit withdrawals are risky for the banking segment (Goodell, 2020).

Overall, the pandemic has caused a financial turmoil but its impacts on stock market appears to be uncertain over the foreseeable future. Because of this ambiguity, a detailed assessment of the effect of the pandemic on the stock market's profitability and liquidity is required. While many previous studies highlight the importance of this subject (e.g., Baig et al., 2021; Alfaro et al., 2020; Liu et al., 2020; Zhang et al., 2020), the majority of them are limited to developed countries such as the United States, Germany, China, Japan, and Spain. They also have not given sufficient consideration to financial institutions which play an important role in the stability of any economy.

Besides, previous studies show that Islamic Banks (IBs) are perceived to be strong to systemic financial shocks due to their nature of operations (Hassan & Aliyu, 2018). Risks of banks are complicated in both asset and liability sides. The liability side comprises mainly deposits which may take diverse forms from demand to term deposits. Meanwhile, loan/investment products protracted by banks to clients constitute a main portion of banks' assets. The maturity incompatibility between asset and liability can intensify a bank run (Ratnovski, 2013). To tackle this challenge, IBs apply 100% reserve for demand deposits. Therefore, IBs are supposed to be steadier than their conventional counterparts in absorbing systemic financial shocks.

This paper aims to participate in this argument by assessing the impacts of COVID-19 pandemic on IBs in comparison with the impacts of the GFC. To this end, we compile data for 32 IBs operating in the Gulf Cooperation Council (GCC) over the period from 2006 to 2020. Our paper main findings provide evidence of the different effects of the GFC and the Covid-19 pandemic on the Islamic banking sector in the GCC. Overall, our findings indicate that IBs are less profitable and resilient in the COVID-19 epidemic than they were during the GFC. IBs in the Gulf Cooperation Council (GCC) countries, however, has gained expertise and been more efficient and reliable over time. As a result, monetary authorities in the Gulf Cooperation Council (GCC) nations must endeavor to implement regulatory reforms relating to human capital as well as new products that will assist the Islamic banking industry to be more resilient to similar crises. Moreover, policy makers have to develop digitalization and Fintech, as key priority in this time to manage such circumstances.

By contrasting the distinct effects of the GFC and the Covid-19 pandemic on the Islamic banking sector in the GCC countries, this research adds to the current literature on pandemics and financial institutions. As a result, this study should be viewed as an attempt to fill a gap in the literature.

The following is the structure of the paper: The second section reviews prior studies on the effects of the financial crisis on the banking industry in general and the Islamic banking sector in particular. The data is described in Section 3 and the accounting ratios employed in the study are defined. The outcomes of our analysis are discussed in Section 4. Section 5 concludes the paper and propose some recommendations.

II. LITERATURE REVIEW

2.1. Banking Sector and Crisis

Goswami (2021) evaluates the technical efficiency of Indian banks. Except foreign banks, which have retained their efficiency during the crisis years, Indian banks witnessed a decline in their efficiency during the crisis but they recovered immediately following the crisis. According to Sun & Ni (2021), banks with better integration have more assets, interbank activities, and atypical banking services. They discover that bank integration is linked to a higher likelihood of bankruptcy. Banking systems with less interconnected giant banks or more integrated smaller banks are more stable, and thus suffer less from a banking crisis. Based on the GCC banking market, Saif-Alyousfi et al (2020a) state that increased bank competition and concentration contribute to financial instability during the crisis.

Using data from banks in the GCC region, Saif-Alyousfi & Saha (2021) discover that banks with a higher proportion of non-traditional businesses were less stable, less profitable, and riskier before to the financial crisis. They also discover that banks with larger capitalization and loan growth rates are more profitable, riskier, and less stable during the crisis. IBs outperform traditional banks in terms of capitalization, asset quality, and liquidity, as well as market concentration (CBs). Based on 1137 banks in Brazil, India, Russia, China, and South Africa, Moudud-Ul-Huq (2021) confirms the strong influence of competition in line with the structure-conduct-performance assumption. The key robust finding is that competition impacts profitability, risk, efficiency, and stability in different ways depending on the size of the bank. Tampakoudis et al (2020) based on Greek, display an unbiased crisis consequence on the assessment of M&As upon their declaration. M&A completions are value-destroying events for acquiring banks through the crisis, far worse than in the pre-crisis period.

Orazalin & Mahmood (2019) study the impact of good corporate governance (CG) on bank performance before, during, and after the Great Recession. They believe that better CG practices can help banks improve their performance after the financial crisis. Ferri et al. (2015) also examine the impact of ownership structure on performance in European banking before and after the crisis. Before the crisis, stockholder banks had more profitability, but they also had higher lending quality before and throughout the crisis. The loan quality of stakeholder banks and profitability has enhanced during the crisis. Adelopo et al (2018) indicate that there is an association between bank determinants (such as size and liquidity) and

profitability before, during, and after the financial crisis. Similarly, Lee et al (2015) compare the causes of profitability during, pre, and post crisis using data from the US banks. They note declining profitability, credit quality, and scale of lending activities well after the crisis.

2.2. Islamic Banking and Crisis

Following the Great Recession, there have been calls for regulators to look into the benefits of Islamic banks in terms of risk management, efficiency, and stability. IBs accompany CBs and provide a variety of services to depositors and investors, according to Imam & Kpodar (2013). Khediri et al. (2015) show that there are significant differences in how profit efficiency interrelates between IBs and CBs. The literature regarding the impact of crisis on IBs individually or as a comparison between IBs and CBs can divide into three clusters as follows.

2.2.1. IBs Outstripping Conventional Banks

A cluster of scholars is of the perspective that IBs outshine CBs before and after the GFC (Mimouni et al., 2019; Mahdi & Abbes, 2018). For example, Hasan & Dridi (2010) note that the demand for Islamic banking products is growing even from conventional investors due to IBs' capability to withstand sectoral headwinds and due to the risk-sharing nature of IBs which has helped them in escaping the risks associated with the GFC. Jaffar & Manarvi (2011) find that IBs outstripped their conventional counterparts in terms of capital requirements and liquidity, while they fell short in terms of the management quality. However, they conclude that IBs had managed to be at par with CBs despite the GFC. Similarly, Hanif (2014) finds that CBs had been affected by the GFC, but IBs had managed to fend off the adverse effects of the crisis. For Waemustafa & Sukri (2015), IBs are more successful than CBs when it comes to the practices of risk management.

In the MENA region, Siraj & Pillai (2012) find that IBs have practical use of capital and their risk management strategies than CBs. They also note that IBs outperform their rivals in terms of total asset growth, profits and equity. In contrast, CBs tend to be more successful in terms of greater customer deposit growth and lower operating expenditures. Kamarudin et al (2018) confirm that IBs' performance is better than that of CBs. Mollah et al (2017) claim that as IBs are ruled by Sharia codes, their capability to take risks is greater. Though, CBs are incapable to take greater risks and gain higher rewards. They assume that IBs have the capability to outperform CBs due to a large number of moral, religious and ethical rules. Pappas et al (2017) conclude that IBs are more stable in a crisis time. Kamarudin et al (2014) show that IBs are more liquid, more profitable and better capitalized with lower credit risk comparing with CBs. Ahmad & Luo (2010) demonstrate that IBs are technically more effective than CBs and also IBs have lower cost efficiency comparing with CBs in Europe. Baber (2018) confirms the resiliency of IBs during the GFC. For Wahid (2017), the Malaysian IBs are more competitive than CBs. Moreover, he observes that the degree of competition for Malaysian Islamic and CBs improved greatly during the GFC.

2.2.2. Conventional Banks Outperforming IBs

The second cluster of literature is where the researchers believe that CBs outperform IBs (Kabir et al., 2015; Saeed & Izzeldin, 2016). For example, Abedifar et al (2013) find that IBs perform worse compared to the whole industry. Furthermore, Mollah & Zaman (2015) approve that while IBs benefit from their Shariah principles, they lag behind CBs in terms of performance. CBs perform better than IBs as the latter are inferior in their CG policies. The BOD structure and Chief Executive Officer performance are superior in CBs than IBs.

Saeed & Izzeldin (2016) document that IBs are less effective than CBs as they are not permitted to charge interest to their clients. They moreover show that IBs could ricketier and susceptible than CBs due to religious compliance requests and the lower management effectiveness. Similarly, Pappas et al (2017) claime that CBs hold a unique advantage over IBs as most of CBs have long been in the market whereas IBs have been late entrants and need to do a lot of catching up. The IBs effectiveness still lags behind the CBs. This is supported by Kabir et al (2015) who note that while IBs have developed rapidly in recent years, this development is not maintainable for a long period of time. The reason is IBs have a much greater credit risk compared to CBs. Abdelsalam et al (2016) by using data from MENA region, find that IBs tend to be much more conservative than their CBs due to religious and ethical requirements.

2.2.3. Balanced View

The third cluster emphasizes a balanced observation where IBs have their own pros- and cons- compared to CBs. For example, Lone et al (2017) note that whereas IBs have developed as a significant segment in the industry, there is motionless a long way to go. Contemporary banking clients have a choice to make; they could stick to conventional banking or move to Islamic banking. Though, in Saudi Arabia, the levels of client satisfaction of IBs and CBs are precisely the same. Correspondingly, Fakhfekh et al (2016) conclude that performance of CBs and IBs is comparable and both are equally resilient to the financial crises. Lajuni et al (2017) note that IBs provide a credible substitute to the CBs and have capability to grow on an incessant basis. On the other hand, Jawadi et al (2016) note that whereas IBs have performed well in latest years, their development story has negative and positive facets. Bourkhis & Nabi (2013) indicate no significant variance due to the influence of GFC on the reliability of IBs and CBs. Correspondingly, Alqahtani & Mayes (2018) find that the difference between IBs and CBs' stability and financial performance is insignificant during the crisis.

Other research findings show that the two banking models are becoming more similar. According to Johnes et al. (2014), IBs are typically on par with CBs in terms of gross effectiveness, with high net competence due to their superior managerial skills. According to Beck et al (2013), the operation of IBs is less dissimilar to that of CBs than is commonly assumed. Doumpos et al. (2017) back up this claiming that the financial efficiency gap between CBs and IBs is statistically insignificant. According to Johnes et al. (2018), the effectiveness and speed of convergence of IBs and CBs are equal. However, based on the Bangladesh context, Uddin et al (2017) discover a considerable difference in stability between IBs and CBs throughout the

financial crisis. They identify the banks that performed better during, before, and after the crisis, but find no substantial differences between both sectors.

2.3. IBs across MENA and GCC and Crisis

Another noteworthy development is the appearance of various studies that examine efficiency and competitiveness and their relations to financial stability, particularly in the MENA/GCC region. These studies cover the years leading up to and following the crisis, with a focus on the decade 2005–2015. For example, Bouchaddakh & Mekki Ben Jemaa (2016) compare the technological efficiencies of IBs and CBs in the MENA region and find minor differences. According to Trad et al. (2017), numerous CBs experienced major crises following the GFC, whilst IBs remained more profitable and stable. In the MENA region, Chaffai (2020) compares IBs and CBs and finds that CBs are substantially more vulnerable to a significant reduction in their lending operations than non-lending activities, but IBs are equally vulnerable to any drop in activity. According to Albaity et al. (2019), IBs with less competition take fewer credit risks, are less likely to go bankrupt, and are more profitable. In the MENA region, they discover that IBs have a stronger competition-fragility relation than CBs. IBs are less affected by GFC than CBs, according to Saleh et al (2020).

Based on nine MENA nations, Anagnostopoulos et al (2020) find that CBs are more revenue efficient and cost efficient than IBs. On both points, they agree that post-crisis IBs underperform their CBs. According to Ghosh (2020), deposit rates are the primary source of market discipline for MENA banks. Depositors have focused on a broad gauge of bank performance during the crisis. Depositors' behavior in terms of market discipline is more pronounced in nations with a large Islamic banking sector. Credit risk, capital sufficiency, operational efficiency, financial risk, gross domestic product, bank sector advancement, and inflation all influence IB performance in the GCC during the crisis, according to Hussien et al (2019). According to Saif-Alyousfi (2020), the war has a detrimental impact on GCC bank savings and lending. He also discovers that the Yemen War has an asymmetric impact on the Gulf Cooperation Council (GCC). The services of IBs are less affected by the war. Correspondingly, Al-Shboul et al (2020) find that IBs are less affected through political risk. Mohammad et al (2020) find that IBs are more uncovered to liquidity risk than CBs. Zarrouk (2014) measures the performance of IBs in 10 MENA countries and show that the GFC negatively affects their performance. Following the crisis, IBs' liquidity and profitability plummeted. Kassim & Shabri Abd. Majid (2010) argue that both IBs and CBs are vulnerable to financial shocks.

Overall, previous studies show conflicting findings. On the other side, some research suggests that business models and risk taking are convergent; however, banking stability is affected differently. Scholars have noted that, despite relatively continuous Islamic asset growth prior to the crisis, regulators and finance practitioners, are unfamiliar with the process by which Islamic banking is introduced and co-exists with a conventional system. Profit efficiency and stability vary across banks and countries, according to empirical findings from post-crisis studies. Finally, post-crisis research necessitates comparisons that can shed more

insight on the underlying differences or similarities in bank efficiency so that banks can better adapt to the new post-crisis environment.

2.4. Impacts of COVID-19 Pandemic

For Ozili & Arun (2020), Covid-19 has affected stock markets in two important ways. (1) The crisis disrupts business activities and companies. (2) The ambiguity and uncertainty about Covid-19 cases influences the investment decisions leading to greater volatility in the stock market. The literature about the economic impacts of Covid-19 has grown rapidly (Corbet et al., 2021; McKibbin & Fernando, 2020; Zhang et al., 2020). Still, studies that examine the consequences of Covid-19 on the financial market have yielded mixed results.

2.4.1 Negative Impacts

Since the outbreak of Covid-19, a large body of study has documented its deleterious impact on stock returns. Al-Awadhi et al (2020) argue that the increase of covid-19 cases in China impacts significantly the returns of all equity categories in the capital market. Ashraf (2020), who use data from 64 stock markets, backs this conclusion. According to Zhang et al (2020), the pandemic has resulted in a significant rise in the risk level of the financial markets in 12 different countries. Market volatility is exacerbated by suspicions about the pandemic situation and the resulting economic losses. He et al (2020) examine the stock market performance of many countries and find that, aside from the negative impact on stock returns, there is a spillover effect between European, Asian, and American countries.

Liu et al (2020) observe a rapid and considerable decline of the profitability in 21 stock markets as a result of the outbreak. According to Goodell (2020), the financial services segment, as represented by banks, is heavily affected by Covid-19 as a result of rising bad debts, falling earnings and rising deposit withdrawals. Covid-19 has had a more detrimental impact on stock markets in developing countries than in industrialized countries, according to Harjoto & Rossi (2021). In both economies, this negative effect is more pronounced in the financial industries. They also discover that, in comparison to the GFC, the equity markets recover faster from the pandemic.

Yilmazkuday (2020) note that, in his analysis of the S&P 500 market index, 1% upsurge in the communal daily-definite number of Covid-19 is associated with a reduction in the index of 0.01% in the following day, and 0.03% decrease in the succeeding month. De Vito & Gómez (2020) look at how Covid-19 affect the liquidity of 14,245 companies in 26 nations. 10% of corporations are likely to become illiquid in the next six months. Covid-19 has a negative influence on the Vietnamese stock market, according to Anh & Gan (2021). Apergis & Apergis (2020) discover that Covid-19 has a negative impact on stock returns across the Chinese economy.

As regards the emerging markets; Beck (2020) study 10 emerging markets and find that most of businesses are harmfully influenced by Covid-19. Whereas Haroon & Rizvi (2020) explore 23 developing markets and indicate that dipping (growing) of Covid cases is related to improving (worsening) liquidity in the

financial markets. Machmuddah et al (2020) examine the stock prices before and after Covid-19 across 56 Indonesia companies and document a significant difference between the volume of stock trade and closing stock price before and after the pandemic. For Albulescu, (2020), the percentage of death is directly related to financial market variability. According to Alber (2020), the stock market return is more sensitive to Covid-19 cases than to deaths and to accumulative number than to daily number of cases. He supports the adverse effect of the Covid-19 on the stock market returns.

2.4.2. Positive and Insignificant Impacts

Alaoui Mdaghri et al (2021) examine stock markets in the MENA region and indicate that growing number of confirmed deaths and cases impact positively the market liquidity. Whereas Onali (2020) claims that there has not been a significant influence for Covid-19 on the US stock market returns. Zeren & Hizarci (2020) find for Germany, France, and Italy insignificant association. Similarly, Insaidoo et al (2021) support the insignificant link between Covid-19 and Ghanaian stock return.

2.5. COVID-19 Pandemic and Banking Sector

Several authors note that IBs are less affected by the GFC than CBs (Ashraf et al., 2020; Kayed & Hassan, 2011); however, it remains unclear whether they are correspondingly affected by Covid-19 (e.g., Hassan et al., 2021; Yarovaya et al., 2020). Meera & Wirdayanti (2020) explain this argument due to the direct effect of the crisis on the real sector, not just losses in the financial system. From this perspective, it is vital to explore the performance of IBs during the Covid-19 outbreak as compared to CBs.

Akhtaruzzaman et al (2021) examine on financial and nonfinancial corporations in China and other G7 countries during Covid–19. They show that listed companies experience noteworthy rise in conditional associations between their share returns. But, these associations are significantly higher for financial companies through the Covid-19. Karaomer & Kakilli Acaravcı (2021), based on Turkey, argue that banking segment is impacted negatively by this crisis. The banking segment experiences a decline following COVID-19 outbreak. Ghosh & Saima (2021) study the financial sustainability and elasticity of banks in Bangladesh as a reaction to the impacts of Covid-19. They determine that banks with low liquidity ratio, low capital adequacy, low performance and higher NPLs are more susceptible to the shocks triggered by the pandemic. Nguyen et al (2021), based on 50 Vietnam financial institutions, indicate that the day-to-day growing in the total number of confirmed cases has negative impacts on liquidity and stock market returns.

It is critical to study the Islamic financial institutions (IFIs) during and after Covid-19. Hassan et al (2021) compare assets such as gold and sovereign bonds in Islamic financial markets in GCC countries' stock markets during the GFC and Covid-19 pandemic. The result shows that sovereign bonds provide the uppermost hedging benefits in the two crises, while gold are more effective in GFC than in Covid-19 crisis. During the pandemic, IBs has been damagingly affected. Gherbi & Alsedrah (2021), based on sample from Saudi Arabia, suggest that the pandemic

has positively affected the financial indicator. According to Ryandono et al (2021), Sharia shares in Indonesian capital market respond rapidly to the Covid-19. Correspondingly, Nurdany et al (2021) presents an optimistic anticipation for investors through and after the pandemic as the instability influence of good news is greater than bad news.

According to Banna et al. (2021), superior use of digital financial inclusion (DFI) ratifies Islamic banking stability, lowering the danger of default. As a result, incorporating DFI within the Islamic banking sector encourages overall economic growth, which can keep the financial sector afloat even during a crisis like Covid-19. Using a sample of Islamic banking in Bangladesh, Miah et al (2021) corroborate the hypothesis that IBs' investment strategy is skewed toward merchant finance. Trade financing and working capital account for more than 66.6 percent of IBs' investment and income. As a result, this channel has the potential to impact IBs. The Covid-19, according to Shahabi et al (2021), can be seen as a beneficial factor, if not a substance, in the advancement of branchless banking in Iran. Karim et al. (2021) discover a fall in bank liquidity and financial health following the epidemic using voice data from Bangladeshi banks. The majority of banks have depleted their liquidity and cash positions. IBs are in worse financial shape than CBs.

By evaluating 12 IBs and 34 CBs across the GCC region, Hidayat et al (2021) conclude that IBs and CBs do not differ in terms of risk, efficiency, or profitability. IBs are less influenced by the opposing effects of credit risk, which is consistent with Islamic financing's risk-sharing method. IFIs are less exposed to the outbreak's implications than CBs in Oman, Bahrain, Saudi Arabia, Qatar, and the United Arab Emirates, according to Akkas & Al Samman (2022). Furthermore, the epidemic has had little effect on the IFIs in Oman and Saudi Arabia. The second stage analysis, which covers the period from 1 November 2020 to 17 March 2021, confirms that Covid-19's negative impact on IFIs in Oman and Bahrain has vanished. As a result, the literature cited above demonstrates how resilient IBs are throughout the Great Recession, as opposed to the Covid-19 epidemic, which requires further investigation.

III. METHODOLOGY

3.1. Data

For this research, we collected data for 32 banks from 5 GCC countries namely: Bahrain, Kuwait, Qatar, KSA and the UAE. Oman is not included since the first Islamic bank in the country started to operate in 2012. The data are extracted from different sources such as annual reports, bank's website, Bank scope (for the period from 2006 to 2010) and Bloomberg (for the period from 2010 to 2020). In total, we have 448 bank-years observations. In this research, we exclude international banks operating in the GCC region (e.g., HSBC, Citicorp, and ABC) and we consider only domestic banks.

3.2. Accounting Ratios

In the GCC region, all financial institutions have to comply with the accounting standards followed by the country of their incorporation. However, while some

regulatory authorities in some GCC countries (e.g the UAE) urge IBs to follow IFRS in preparing financial statements, other require the AAOIFI (e.g. Bahrain). To make meaningful comparisons between the accounting ratios of IBs operating in the GCC countries, we form our own accounting ratios following the AAOIFI standards, which help to eliminate any particular problems in comparing data across these countries. The 19 ratios used in this study are defined in Table 1. We are interested mainly in: profitability indicators, bank growth indicators, asset quality, and risk and regulatory quality indicators of IBs.

Table 1.
Definitions of the Ratios

Bank profitability ratios
ROA= income/ average total assets
ROE= income/ average stockholders' equity
COTI=Cost-to-Income= total cost/total income
Bank growth indicators
Assets = LN total Assets growth
Deposit_GR= Deposit growth= (Total deposit $_{X+1}$- Total deposit $_{X}$)/ Total deposit $_{X}$
IHA-Gr= Investment Account growth= (total investment account $_{X+1}$- Total Investment account $_{X}$)/ total investment account $_{X}$
Asset-quality indicators
PLGL=Problem Loans/ Gross Customer Loans
LTD=loans to deposits=average total loans and advances / average total customer deposits
PLRWA=Problem Loans/ Risk-weighted Assets
LLRPL=Loan Loss Reserves/ Problem Loans
LP=Loan Provision/ Avg Loans at Amortized Cost
Risk ratios
Z-score
Std-ROA = Standard deviation of ROA
DTA=deposits to assets=average total customer deposits / average total assets
IAHTA= Investment account holders to assets= average total IAH assets/ average total assets
ETD=equity to deposits=SE/ATD=average shareholders' equity / average customer total deposits
TLE=total liabilities to equity=TL/SE=average total liabilities / average stockholders' equity
Regulatory Capital
Tier 1=Tier 1 Ratio
CAR= Total Capital Ratio

IV. RESULTS AND ANALYSIS

4.1. Descriptive Statistics

To compare the effects of the GFC with those of the Covid-19 pandemic on the Islamic banking industry, we begin first by comparing the financial characteristics of our samples during these two events. We consider the years 2008-2009 as the GFC years and 2020 as the Covid-19 pandemic year. Table 2 reports the descriptive statistics. The last column of the table shows the results of t-test for equality of means of our selected financial ratios. Overall, most of the ratios are statistically different during the two events. The mean values for ROA, ROE, IHA Growth,

PLGL, Z-score, IAHTA, ETD and TLE are significantly different at the 1% level during the two observed time, while the means of Deposit-GR, LLRPL and Std-ROA are significantly different at the 5% level.

Table 2.
Descriptive Statistics for the Financial Ratios

Variables	Mean		Standard deviation		T-test for equality of means
	GFC	Covid-19 Pandemic	GFC	Covid-19 Pandemic	t-value
Bank profitability indicators					
ROA	0.022	0.011	0.093	0.007	2.84***
ROE	0.023	0.061	0.127	0.069	2.41***
COTI	0.516	0.421	0.195	0.156	1.76*
Bank growth indicators					
Assets	22.504	23.674	1.240	1.062	1.69*
Deposit-GR	0.206	0.098	0.428	0.181	2.02**
IHA Growth	0.143	0.005	0.075	0.001	2.45***
Asset-quality indicators					
PLGL	0.036	0.013	0.019	0.026	3.21***
LTD	0.927	1.072	1.470	0.729	1.540
PLRWA	0.054	0.034	0.079	0.027	1.320
LLRPL	0.985	1.284	1.089	0.653	2.01**
LP	0.036	0.034	0.140	0.008	1.090
Risk ratios					
Z-score	186.060	364.983	176.651	0.019	3.54***
Std-ROA	0.003	0.009	0.013	0.032	2.11**
DTA	0.534	0.701	0.246	0.083	1.68*
IAHTA	0.394	0.701	0.261	0.072	2.03***
ETD	1.081	0.175	2.994	0.040	2.45***
TLE	0.712	6.311	3.381	4.248	3.43***
Regulatory Capital indicators					
Tier 1	0.187	0.172	0.275	0.021	1.59*
CAR	0.209	0.191	0.265	0.026	1.48

*, **, and *** indicate significance at 10%, 5%, and 1% level

4.1.1. Performance Indicators

Our performance indicators show that the overall performance of IBs increased considerably from 2008 to 2019 (Chart 1). However, both ROA and ROE dropped during the Covid-19 pandemic. Table 2 reports that the ROA during the GFC is higher than the ROA observed during the Covid-19 pandemic. Chart 2 shows that IBs in some countries (e.g. Bahrain and Qatar) performed better during the GFC comparing to the pandemic period. However, IBs in others GCC countries (e.g. Saudi Arabia and the UAE) shows the opposite. Badis Shubailat, analyst at Moody's, explain this by stating that "Regulatory forbearance has masked the deterioration in banks' loan books, and high provisioning costs will continue to

weigh on profitability - but their capital and liquidity buffers should comfortably absorb unexpected losses (Gulf News, 2021). Inversely, during the Covid-19, ROE and COTI experienced better performance compared to the GFC time. Indeed, Karim & Ali (1989, p.193) argue that IBs "opt for an increase in investment deposits rather than equity capital to fund their investments" under conditions of "high strategic choice", which explains the higher ROE for IBs even during the crisis period. Chart 3 shows that cost to income ratio dropped considerably from 2008 to 2020 for almost all GCC countries which mean that during the 14 years, IBs in the GCC region gain efficiency and become more profitable.

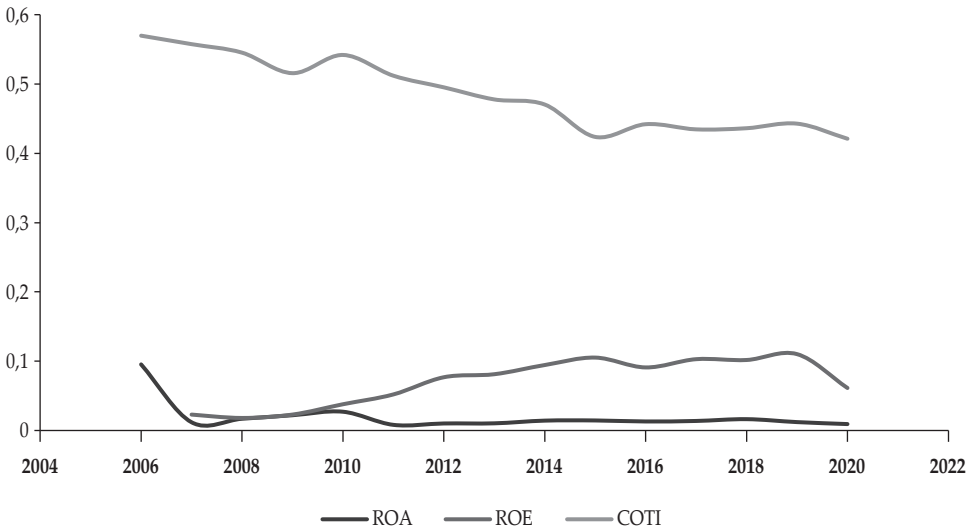

Chart 1. Performance Indicators for IBs

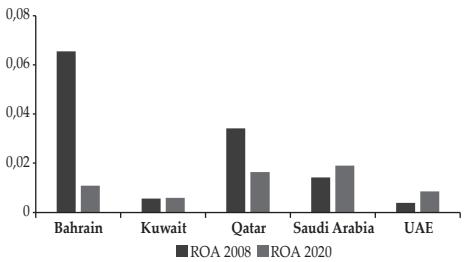

Chart 2. ROA

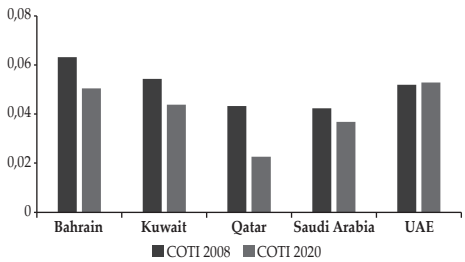

Chart 3. COTI

4.1.2. Islamic Bank Growth Indicators

Chart 4 describes the assets growth rate, deposits growth and Investment Accounts growth during 2006 to 2020. Both the deposits growth rate and investment account growth rate experienced ups and downs moments during the 14 years. However, assets show a steady growth during the same period. Table 2 reports that growth rate indicators during the GFC are higher than those observed during the Covid-19 pandemic. However, it is very clear that IBs' liquidity is relatively strong, reflecting deposit growth as customers cut spending amid economic uncertainty.

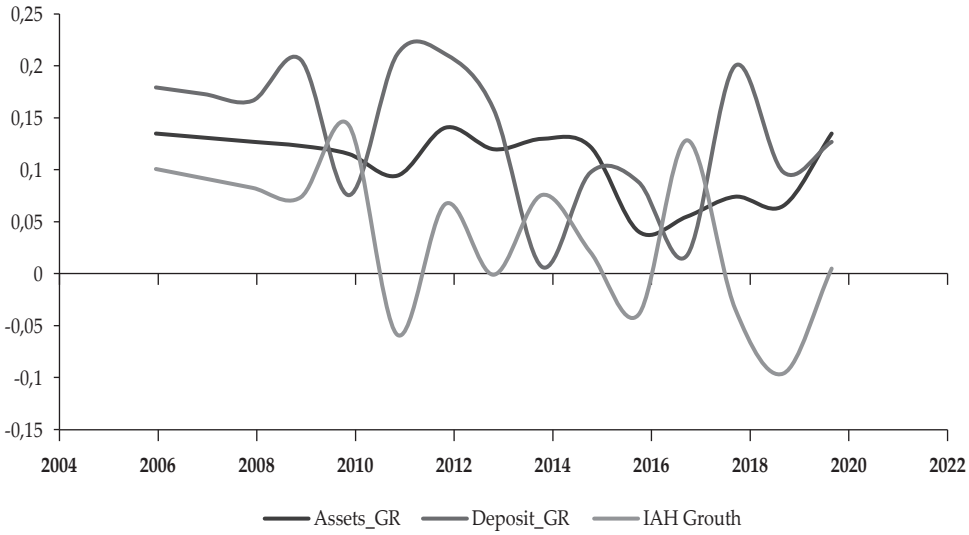

Chart 4.
IBs Growth Indicators

4.1.3. Asset-quality Indicators

The asset-quality indicators reveal some additional important conclusions for the two shocks (Table 2). The PLGL (the problem loans to gross customer loans) is considerably lower during the Covid-19 pandemic than what has been observed during the GFC (Chart 6), which implies that IBs in the GCC region are gaining expertise and become more stable. However, the LLRPL (loan loss reserves to problem loans) has increased during the covid-19 pandemic compared to what has been observed during the GFC. Indeed, it's very clear that during the lockdown many customers were not able to pay their debt, which is considered as common situation in the banking sector. Moreover, comparing to conventional banks, IBs are more exposed to small and medium-sized enterprises (SMEs) and retail lending, who was largely affected by the pandemic. According to Moody's, GCC IBs' *"focus on low-risk retail finance supports their asset quality and are far more resilient to the impact of pandemic. IBs while emerging from the coronavirus-induced economic shocks remain exposed to an uneven recovery"* (Gulf News, 2021)[1]. In regard with the loan-to-deposit ratio (chart 5), used to evaluate a bank's liquidity by comparing a bank's total loans to its total deposits, it's very clear that the ratio has increased considerably during the Covid-19 pandemic compared to the GFC period and reached above 100% in Kuwait and Qatar. Thus, IBs in these two countries have loaned out every dollar in deposits, which is the danger zone because it has no reserves to pay customers for demand deposits.

1 https://gulfnews.com/business/banking/gcc-islamic-banks-retail-focus-makes-them-more-resilient-to-covid-crisis-1.82427239

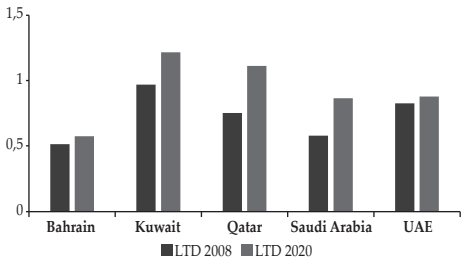

Chart 5. LTD

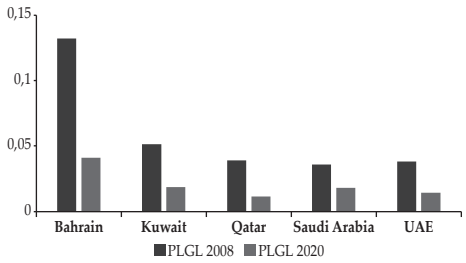

Chart 6. PLGL

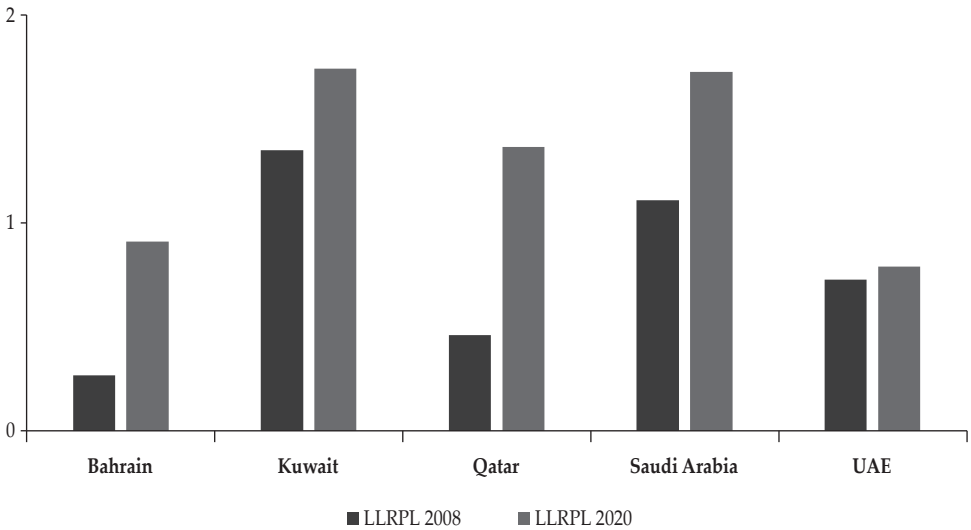

Chart 7. LLRPL

4.1.4. Risk Ratios

Our risk ratios show that, compared to the GFC, risks changed considerably during the Covid-19 time. Chart 8 shows how Z-score increased considerably from 2008 to 2020. A higher z-score implies a lower probability of insolvency (Čihák & Hesse, 2010; Beck, Demirgüç-Kunt, Levine, 2007; Laeven & Levine, 2009 Demirgüç-Kunt, Detragiache, & Tressel, 2008). Thus, IBs become more stable with time. Chart 9 describes the deposits to assets ratio for the years 2008 and 2020. The high ratio implies that banks liquidity is sound. The DTA ratio increased considerably from 2008 to 2020, meaning that IBs become more solid and have a better liquidity position in 2020 comparing to 2008. Chart 10 (equity to deposit ratio) confirms our findings. Chart 11 describes the debt-to-equity ratio for 2008 and 2020 for our studied IBs. The ratio decreased considerably in 2020 across the 5 GCC countries which confirms that IBs become more stable over the observed 14 years.

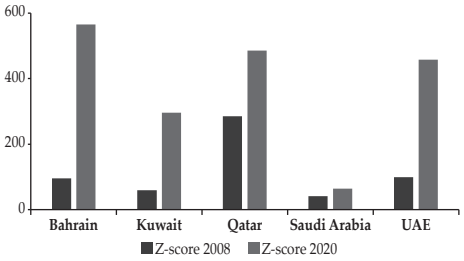

Chart 8. Z-score

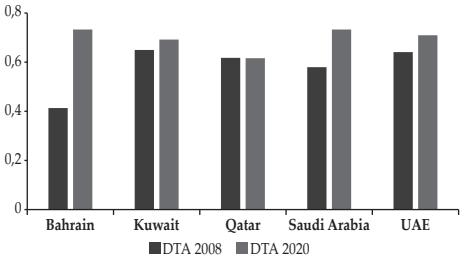

Chart 9. DTA

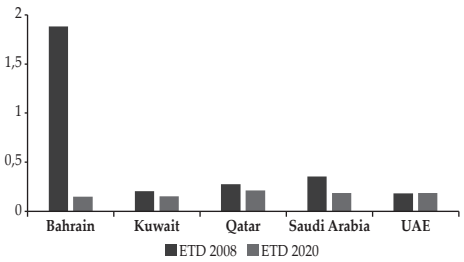

Chart 10. ETD

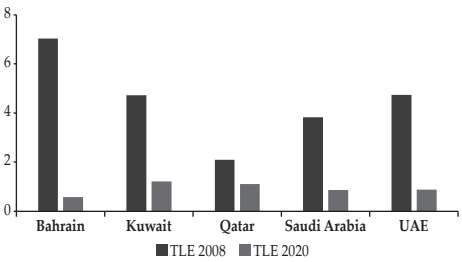

Chart 11. TLE

4.1.5. Regulatory Capital Indicators

The two regulatory capital ratios are stable over the 14 years, as presented in chart 12. Chart 13 and 14 show that during the GFC, IBs in the 5 GCC countries maintained a better capital adequacy ratio and better tier1 ratio compared to those observed during the pandemic crisis. Moreover, it's very clear that GCC IBs' regulatory capital remains well above minimum requirements, which mean that IBs have enough capital to protect depositors' money and are stable and efficient. It is worthy to note that monetary authorities across GCC countries have relaxed reserve requirements and provided banks with liquidity support if needed, during the Covid-19 pandemic.

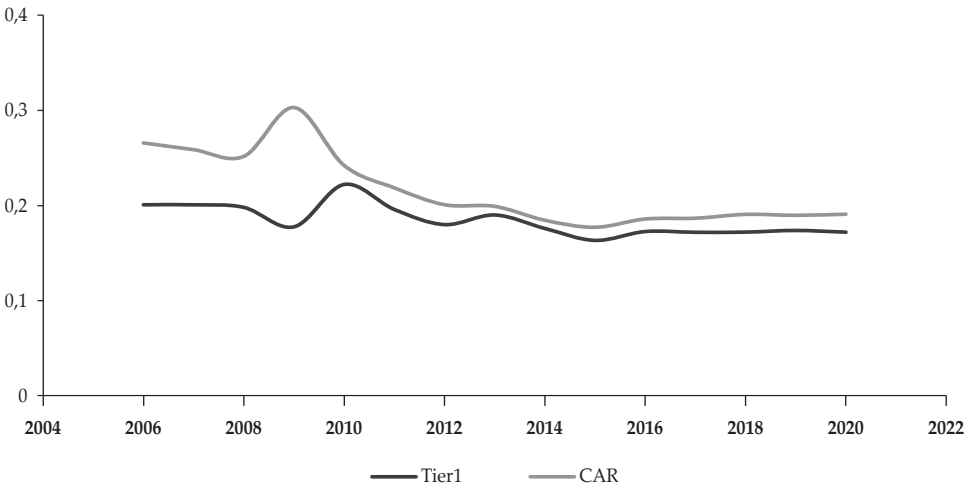

Chart 12. Regulatory Ratios

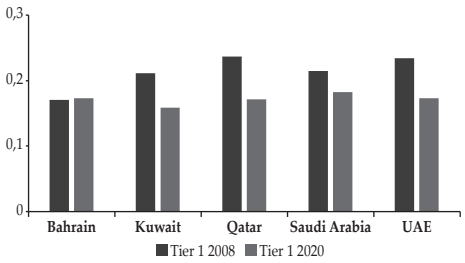

Chart 13. Tier 1 Ratio

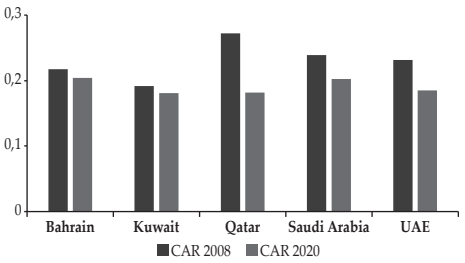

Chart 14. CAR

V. CONCLUSIONS AND IMPLICATIONS

Within almost a decade, two unexpected events inflict instability to the global financial markets: the GFC (2008-2009) and the Covid-19 pandemic crisis. While the causes of the two events are different, they both interrupted functioning of the financial markets worldwide.

In this paper, we compare the effects of both crises on the Islamic banking sector in the GCC region. We are mainly interested in the profitability indicators, bank growth indicators, asset quality, and risk and regulatory quality indicators of IBs, during these two events. Therefore, we assess a set of accounting ratios of 32 IBs operating in the region for the period from 2006 to2020. Overall, our main findings show that IBs are not as resilient in the COVID-19 pandemic as in the GFC. However, IBs in GCC countries gain experience and become more efficient and stable over time.

The findings have a significant policy implication for the Islamic banking sector in the GCC region. First, monetary authorities in the GCC countries have to develop regulatory reforms related to human capital, and innovative products helping the Islamic banking sector to be more resilient to such crises. Second, digitalization and Fintech seem to be the keys to manage such circumstances. Indeed, Fintech can increase standardization, streamline processes, reduce costs and mitigate market asymmetry by increasing transparency, which promote Islamic financial instruments and make it competitive to conventional counterparts. Also, Fintech would help to expand access and increase the socially transformative role of the Islamic banking sector. Therefore, regulatory authorities have to encourage IBs to opt for digitalization by reduce barriers and develop solutions.

While this paper provides a thorough and insightful analysis of the various effects of the GFC and the Covid-19 outbreak on the Islamic banking sector in the GCC region, it does have certain research limitations. First, market-related variables are not included in the study. Because more and more IBs in the GCC are going public, future studies could include market-based accounting ratios. Second, as with most prediction experiments, the variables were chosen without reference to any economic theory. Third, the scope of the study might be expanded to include IBs from other countries, allowing for cross-national comparisons. Despite these limitations, the study provides numerous key pieces of data that support the study's goals and objectives and provide answers to the research questions. Future research could expand the sample size and use more accounting and market ratios.

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