

Factors Contributing to Bank Profitability in the GCC Region during Global Financial and Non-Financial Crises¹

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ABSTRACT

The generalized method of moments (GMM) with an interaction dummy variable technique is used to analyze the factors contributing to the profitability of banks in the Gulf Cooperation Council (GCC) dual banking sector and the impact of global financial and non-financial crises. Our data covers 38 conventional GCC banks and 23 Islamic GCC banks from 2005 to 2022. While Islamic GCC banks are better capitalized, liquid, and diversified, they are less profitable and have higher operating costs than their conventional peers. Our results suggest that the global financial crisis has no significant impact on the two types of banks, while the non-financial crisis negatively affects only conventional banks. This suggests that Islamic banks operating in the GCC have proven to be resilient in financial and non-financial crises. Moreover, the impact of key factors contributing to the profitability of GCC banks varies considerably between conventional and Islamic banks. Moreover, an alternative estimation method, such as the dynamic bias-corrected LSDVC estimator, was used to confirm our results. The findings of this study provide valuable insights for managers, investors, policymakers, and regulators of GCC banks.

Keywords: Bank profitability, GCC banks, Islamic banks, GMM, LSDVC

¹Received in 23/7/2024, accepted in 4/8/2024.

I. INTRODUCTION

The stability of capital markets and the entire economy is directly related to the financial stability of the banking sector (Mohamed, 2018), and it is greatly influenced by the profitability of banks (Dietrich & Wanzenried, 2011; Selim & ElSady, 2024). Therefore, understanding the factors underpinning bank profitability is crucial for understanding the overall state of the economy (Menicucci & Paolucci, 2016). Although several studies have addressed this, most have focused on conventional or interest-based banking industries (Chowdhury & Rasid, 2016). Ibrahim (2015) stated that even though Islamic banking is becoming increasingly popular, Islamic banking performance needs to be further examined in academic literature to better understand the soundness of the industry. Thus, this study identifies the factors that contribute to bank profitability in the Gulf Cooperation Council (GCC) region, consisting of the United Arab Emirates, Bahrain, Kuwait, Oman, Qatar, and Saudi Arabia. Dual banking is a key feature of the GCC banking industry, as Islamic and conventional banks co-exist; Islamic banks have assets of \$1,343 billion, accounting for 60% of the total Islamic banking sector worldwide (Islamic Financial Services Board [IFSB], 2023). Moreover, the financial systems of all GCC countries are bank-based, and their financial markets are comparatively underdeveloped (A. Maghyreh & Abdoh, 2021). Due to this economic reliance, the banking industry in these nations plays a critical role by providing a diverse array of financial services beyond traditional lending (AlKhouri & Arouri, 2019). These particular aspects emphasise the need to look at research on the banking sector in the GCC region from different angles.

However, by using data from 38 conventional and 23 Islamic GCC banks from 2005 to 2022, our research adds to the current body of knowledge by examining the factors that determine the profitability of these banks as well as the impact of global financial and non-financial crises. Although several previous studies have investigated the factors affecting the profitability of GCC banks (Al-Matari, 2023; Alqahtani et al., 2017; Chowdhury & Rasid, 2016; Khan, 2022), these existing studies have not conducted a direct comparative analysis of how conventional and Islamic banks differ in terms of profitability factors, nor have

they considered the impact of global financial and non-financial crises in a single study. In addition to addressing these gaps, the current study employs the generalized method of moments (GMM), a robust econometric method, to overcome the potential endogeneity caused by omitted variables and causality issues, as well as take into account the persistence and dynamic nature of bank profitability. The present study also conducts a comprehensive analysis by considering various internal and external factors that contribute to banks' profitability and using interaction variables to differentiate the slope coefficients between conventional and Islamic GCC banks in order to identify and compare their profitability determinants. Finally, to increase robustness, the dynamic bias-corrected LSDVC estimator is used to confirm our results. The insights of this study are of great importance to managers, investors, policymakers, and regulators of GCC banks.

The following is an overview of the remaining sections of this paper: Section 2 presents the relevant literature, while Sections 3 and 4 define the study methodology and sample, respectively. Section 5 provides the empirical results and a discussion of the study, and Section 6 outlines the study's conclusions and implications.

2. LITERATURE

The existing literature has offered varying views regarding the factors contributing to bank profitability and their impacts as a result of using different samples, study periods, and estimation methods. Some studies have examined factors affecting bank profits in a specific country (e.g., Al-Homaidi et al., 2020; Bolarinwa et al., 2019; Dietrich and Wanzenried, 2011; Pervana et al., 2015; Sufian and Habibullah, 2009), whereas others have examined these factors in a multi-country setting (e.g., Djalilov and Piesse, 2016; Islam and Nishiyama, 2016; Kohlscheen et al., 2018; Le and Ngo, 2020; Menicucci and Paolucci, 2016). Nevertheless, most studies have identified internal and external factors contributing to bank profitability. This literature review therefore aims to identify the key determinants of GCC bank profitability through an analysis of recent academic research.

2.1 THE DRIVERS OF BANK PROFITABILITY IN THE GCC

From the perspective of the GCC banking industry, Chowdhury and Rasid (2016) analyzed the determinants of the operational performance (return on assets; ROA) of GCC Islamic banks between 2005 and 2013 by employing static and dynamic regression models. They found that bank capital and size were positively associated with bank performance, whereas money supply and inflation had an adverse effect on bank performance. In addition, Alqahtani et al. (2017) examined the determinants of GCC bank performance from 1998 to 2012, focusing on the impact of the last global financial crisis using static and dynamic regression models. They pointed out that Islamic banks were more profitable, efficient, and capitalized over the sample period on average. They also found that oil prices had a favorable impact on the operational performance (ROA) of GCC banks, despite having an unfavorable impact on the financial performance (return on equity; ROE) of GCC banks. Moreover, Al-Matari (2023) investigated the factors that affect GCC banks' profitability, which was quantified by the net interest margin (NIM) ratio between 2000 and 2018 using a pooled ordinary least squares (OLS) regression. He found that bank size was negatively associated with the profitability of GCC banks, while asset management exerted a favorable influence on the profitability of GCC banks. He also found that bank capitalization, liquidity, and asset quality had an insignificant influence on GCC banks' profitability. Khan (2022) used static pooled OLS and random and fixed effects regression methods to examine the profitability determinants of 59 GCC banks from 2011 to 2017. He found that asset management, bank size, and GDP growth had a significant positive influence on the profitability of GCC banks, whereas capital adequacy, operating efficiency, asset quality, and financial risk had a substantial negative influence on GCC bank profitability.

However, the literature has not directly compared and contrasted the profitability factors of conventional and Islamic GCC banks, nor has it considered the impact of global financial and non-financial crises in a single study. Consequently, this study significantly extends the existing body of research by comprehensively analyzing the profitability factors of 61 GCC banks

from 2005 to 2022 using the system GMM estimator, a robust econometric method that is only asymptotically efficient. This study also examines many different factors, including the impact of the last two global crises on banks' profits as well as factors within and outside banks' control. It also uses the interaction variable method to determine the difference between the slope coefficients of the two types of GCC banks.

3. METHODOLOGY

The present research uses the system GMM estimator, originally proposed by Arellano and Bover (1995) and Blundell and Bond (1998), for several reasons: (1) The system GMM estimator addresses the endogeneity problem, which is likely to occur when identifying the determinants of bank profitability (Alqahtani et al., 2017; García-Herrero et al., 2009); (2) It also addresses the dynamic nature and persistence of bank profitability (Dietrich & Wanzenried, 2011; Kumar & Bird, 2022); (3) The system GMM allows for estimations of time-invariant variables, such as the bank business model; and (4) The robust standard errors are computed to have unbiased standard errors. Therefore, the estimated regression models are as follows:

$$Profit_{ijt} = \alpha + \beta_1 Profit_{ijt-1} + \beta_2 IF_{ijt} + \beta_3 ID_i + \beta_4 EF_{jt} + \beta_5 GFC_t + \beta_6 COVID - 19_t + \varepsilon_{it} \quad (1)$$

where the i , j and t subscripts are the dimensions of the bank entity, country, and time, respectively. $Profit_{ikt}$ is the profitability of bank i in country j in year t , and $Profit_{ijt-1}$ is the profitability of bank i in country j in year $t-1$, IF_{ikt} is a vector of internal determinants, ID_i is a dummy variable where Islamic banks assign a value of one and traditional banks assign a value of zero, and EF_{kt} is a vector of external determinants. GFC_t and $COVID - 19_t$ are year dummies for controlling the influence of financial and non-financial crises, respectively. Table 1 presents the study variables and description.

Table 1: Variables description

Variable	Symbol	Description
<i>Bank profitability</i>		
Return on assets	ROA	Net income divided by total assets.
<i>Internal factors</i>		
Capitalization	ETA	Equity divided by total assets.
	CAP	Sum of Tier I and Tier II capital divided by risk-weighted assets.
Liquidity	LATA	Liquid assets divided by total assets.
Diversification	NIITA	Non-interest income divided by total assets.
Asset quality	LLPTL	Loan-loss provision divided by total loans.
Management efficiency	CTI	Cost divided by income.
Size	Size	The natural logarithm of total assets.
Business model	ID	A value of one for Islamic banks and zero otherwise.
<i>External factors</i>		
Market structure	HHI	The Herfindahl–Hirschman Index.
Inflation	INF	The annual percentage change of the price index.
GDP real growth	GDPG	The annual percentage change of the country's GDP.
Oil prices	OIL	The natural logarithm of annual oil prices.
Global financial crisis	GFC	A value of one for the period 2007-2008 and zero otherwise.
Global non-financial crisis	COVID-19	A value of one for the year 2020 and zero otherwise.

As far as profitability is concerned, we use the return on assets (ROA), which indicates how much profit was made per unit of assets. The profitability of the two types of GCC banks can be better compared using return on assets (ROA), which evaluates the efficiency with which a bank turns its assets into profits (Chowdhury & Rasid, 2016). Other profitability scales, such as net interest margin (NIM) and return on equity (ROE), are not appropriate for this study for two reasons: (1) ROE is affected by capital structure, and Islamic banks tend to have significantly lower leverage compared to their conventional peers (Alqahtani et al., 2017); (2) the Islamic banking model is not interest-based (Beck et al., 2013), so NIM would be an inappropriate measure of its performance.

However, for internal factors, six measures (bank capitalization, liquidity, diversification, size, management efficiency, and asset quality) are used to capture the internal causes of bank profitability. Additionally, five external factors were employed to capture the external determinants of bank profitability: market

structure, inflation rate, GDP growth, and oil prices. Oil prices are included because the GCC countries rely heavily on oil revenue and the GCC banking sector depends heavily on oil sector activities (Olson & Zoubi, 2008). The oil price has a systemic influence on the performance of banks in oil-exporting countries and must therefore be brought under control (Alqahtani et al., 2017; Hesse & Poghosyan, 2009). The Organization of the Petroleum Exporting Countries (OPEC) basket price of oil is chosen as a proxy for oil prices because GCC countries are the largest oil producers and members of OPEC, so they are possibly going to be impacted by fluctuations in OPEC basket prices.

Next, in order to address the question of whether the bank's business model has an effect on modifying the impact of financial and non-financial crises on bank profitability, we expand our model to incorporate the interaction between the Islamic dummy and the financial and non-financial crises:

$$Profit_{ijt} = \alpha + \beta_1 Profit_{ijt-1} + \beta_2 ID_i + \beta_3 GFC_t + \beta_4 GFC_t \times ID_i + \beta_5 COVID - 19_t + \beta_6 COVID - 19_t \times ID_i + \beta_7 IF_{ijt} + \beta_8 EF_{jt} + \varepsilon_{it} \quad (2)$$

Lastly, we also examines how the determinants of profitability vary between conventional and Islamic banks in the GCC region using the following equation:

$$Profit_{ijt} = \alpha + \beta_1 Profit_{ijt-1} + \beta_2 ID_i + \beta_3 IF_{ijt} + \beta_4 IF_{ijt} \times ID_i + \beta_5 EF_{jt} + \beta_6 EF_{jt} \times ID_i + \varepsilon_{it} \quad (3)$$

β_3 and β_5 are the profitability determinants of conventional GCC banks, whereas β_4 and β_6 are the coefficients of differences for the profitability determinants between conventional and Islamic GCC banks. The sum of β_3 and β_4 and the sum of β_5 and β_6 are the coefficients for the profitability determinants of GCC Islamic banks. The author used the Wald test to determine their significance (i.e., H_0 : the sum coefficients = 0). However, the use of the interaction dummy variable technique has several advantages over running a separate regression for each of the two groups: (1) It provides an efficient and simple method to determine the effects of different business models between the two groups; (2) Using the entire sample observations in a single regression makes the regression estimates more efficient because it reduces the standard errors of the coefficients (Dougherty, 2007); and (3) This approach satisfies the empirical GMM technique condition that the size of individuals ($N = 61$) is considerably

greater than the total number of periods ($T = 18$); (4) Small samples are unsuitable for GMM analysis, which is only asymptotically efficient (Ibrahim & Rizvi, 2017).

4. SAMPLE AND DATA DESCRIPTIVES

The Bloomberg database is the main source of study data, which provides financial data for listed firms and the annual reports used for missing observations. Additionally, information on macroeconomic metrics are taken from the World Bank repository. The study sample includes 38 conventional and 23 Islamic GCC banks from 2005 to 2022. Nonetheless, the study specifically examines the GCC region due to its dominant position in the global Islamic banking sector, holding a significant share of 60%. Moreover, the Islamic banking sector in the GCC is highly developed. Furthermore, Islamic banks' compliance with Sharia law varies greatly from one Islamic country to another. Therefore, it is more accurate to focus the estimates on the Islamic banks in the GCC, as the member states of this region are remarkably similar in terms of culture, language, and government (Alsharif, 2021). Table 2 shows the sample distribution.

Table 2: The sample distribution across GCC countries

Country	All	Conventional banks	Islamic banks
Bahrain	9	4	5
Kuwait	10	5	5
Oman	7	6	1
Qatar	6	3	3
Saudi Arabia	12	8	4
United Arab Emirates	17	12	5
All	61	38	23

Table 3 shows descriptive data on research variables for all GCC countries; it shows that Qatari, Saudi, and Emirati banks are the most profitable. Moreover, Bahraini banks have the highest capital adequacy ratio, whereas Omani banks have the lowest ratio of capital adequacy. Kuwaiti banks have the highest ratio of liquidity, whereas Omani and Saudi banks have the lowest ratio of liquidity. Qatari, Omani, and Saudi banks have the lowest loan provision ratios, whereas

Emirati, Bahraini, and Kuwaiti banks have the highest loan provision ratios. Regarding management efficiency, Bahraini banks seem to be the least efficient because, on average, they have the highest cost-to-income ratio. In terms of size, Saudi banks are by far the largest, which is likely because Saudi Arabia is the most populous country in the sample and has the largest economy and capital market in the GCC region.

Regarding the two types of GCC banks, conventional GCC banks seem more profitable and have lower costs than their Islamic counterparts. This result is inconsistent with that reported by Beck et al. (2013) and Khediri et al. (2015) implying that Islamic GCC banks have lost their superiority. This implication was also pointed out by Alqahtani et al. (2017), who found that after the 2007-08 financial crisis, Islamic banks in the GCC region lost their standing. This finding also concurs with the results of Alsharif (2021) and Alsharif et al. (2019), who demonstrated that conventional banks in the GCC are more productive and efficient than Islamic banks. Nonetheless, Islamic banks in the GCC region were found to be better capitalized, liquid, and diversified, which is consistent with most previous studies (Alqahtani et al., 2017; Alsharif, 2021; Beck et al., 2013). Across GCC countries, Qatari conventional banks seem to be the most profitable and have the lowest cost, while Kuwaiti banks are the least profitable and have the highest cost-to-income ratio. Additionally, Qatari Islamic banks are the most profitable, whereas Omani Islamic banks are the least profitable. Furthermore, loan loss provisions are highest in the Islamic banks of Bahrain, the Emirates, and Kuwait, while they are lowest in Qatar, the Sultanate of Oman, and the Kingdom of Saudi Arabia.

However, the correlation matrix between the variables is displayed in Table 4. Consequently, the independent variables do not show significant signs of multicollinearity, except for the regular equity ratio and the capital adequacy ratio, which are regressed separately to mitigate or avoid the multicollinearity problem (as they are highly correlated). Using these two capitalization measures increases the robustness of the analysis and helps us better understand the profitability determinants of the two types of GCC banks. Finally, following Beck et al. (2013) and previous studies, data were winsorized at the 1st and 99th

percentiles to make sure that outliers were eliminated and that the study results were not influenced by extreme values.

Table 3: Descriptive statistics of the study variables across the GCC countries

All banks	Mean	Bahrain	Kuwait	Oman	Qatar	Saudi Arabia	UAE
ROA	1.67	1.23	1.08	1.38	2.68	2.11	1.68
ETA	15.12	15.22	13.60	14.76	16.61	15.36	15.39
CAP	19.97	22.58	20.17	17.74	18.94	20.32	19.43
LATA	17.97	18.05	20.29	14.37	18.65	15.00	19.77
NIITA	1.29	1.62	1.06	0.93	1.15	1.33	1.39
LLPTL	1.09	1.39	1.29	0.47	0.51	0.71	1.53
CTI	73.99	248.38	56.48	48.76	28.18	39.30	40.32
Size	\$27,070	\$12,146	\$22,475	\$8,111	\$41,482	\$44,536	\$27,917
HHI	1954	2043	1894	2671	3585	1231	1578
INF	2.93	1.90	3.55	2.45	3.36	3.01	3.12
GDPG	3.55	3.65	1.92	3.26	7.80	3.12	3.32
OIL	\$73.46						

Conventional banks	Mean	Bahrain	Kuwait	Oman	Qatar	Saudi Arabia	UAE
ROA	1.71	1.37	1.22	1.49	2.14	2.05	1.80
ETA	14.23	12.42	12.73	14.04	14.02	14.17	15.64
CAP	18.43	20.53	17.71	17.34	17.12	17.96	19.20
LATA	17.20	17.17	19.56	14.62	18.31	13.02	19.91
NIITA	1.18	0.98	1.09	0.92	1.11	1.17	1.45
LLPTL	1.04	0.77	1.46	0.46	0.68	0.67	1.58
CTI	41.42	42.98	58.07	45.78	30.53	35.10	38.58
Size	\$32,063	\$18,658	\$26,377	\$8,610	\$63,666	\$49,153	\$31,590

Islamic banks	Mean	Bahrain	Kuwait	Oman	Qatar	Saudi Arabia	UAE
ROA	1.60 ^a	1.11	0.92	0.05	3.24	2.25	1.39
ETA	16.68 ^a	17.49	14.54	23.23	19.25	17.80	14.76
CAP	22.65 ^a	24.23	22.83	22.48	20.81	25.19	20.01
LATA	19.32 ^a	18.76	21.08	11.40	18.98	19.07	19.42
NIITA	1.46 ^a	2.13	1.04	1.10	1.20	1.65	1.23
LLPTL	1.18	1.88	1.11	0.59	0.35	0.78	1.41
CTI	130.80 ^a	414.55	54.76	83.94	25.78	47.95	44.70
Size	\$18,359 ^a	\$6,879	\$18,244	\$2,235	\$18,879	\$35,027	\$18,734

Notes: Size (in USD million). ^a indicates that the mean is statically different between GCC Islamic and conventional banks at the 1% level according to the non-parametric Kolmogorov-Smirnov test.

Table 4: The correlation matrix

	ROA	ETA	CAP	LATA	NIITA	LLPTL	CTI	Size	HHI	INF	GDPG	OIL
ROA	1											
ETA	0.34	1										
CAP	0.27	0.81	1									
LATA	0.16	0.39	0.40	1								
NIITA	0.50	0.36	0.30	0.26	1							
LLPTL	-0.44	-0.10	-0.10	0.03	0.05	1						
CTI	-0.58	0.09	0.12	0.06	-0.02	0.18	1					
Size	-0.04	-0.38	-0.35	-0.20	-0.28	-0.09	-0.35	1				
HHI	0.04	0.02	-0.03	-0.01	-0.10	-0.15	-0.07	-0.10	1			
INF	0.27	0.08	-0.03	0.13	0.21	-0.13	-0.07	-0.15	-0.04	1		
GDPG	0.36	0.17	0.06	0.17	0.20	-0.23	-0.11	-0.14	0.16	0.39	1	
OIL	-0.01	0.01	0.01	0.03	-0.05	-0.07	0.08	-0.02	0.00	0.22	0.37	1

Notes: ROA, the ratio of net income to total assets; ETA, the ratio of equity to total assets, CAP, the ratio of Tier I and Tier II capital to risk-weighted assets; LATA, the ratio of liquid assets to total assets; NIITA, the ratio of non-interest income to total assets; LLPTL, the ratio of loan-loss provision to total loans; CTI, the ratio of cost to income; Size, the natural logarithm of total assets; HHI, the Herfindahl–Hirschman Index.; INF, the annual percentage change of the price index; GDPG, the annual percentage change of the country’s GDP; OIL, the natural logarithm of annual oil prices.

5. DISCUSSION AND EMPIRICAL RESULTS

This section provides a comprehensive analysis of our research findings on the factors affecting bank profitability in the GCC region. Following the initial estimates, we provide further estimates and conduct rigorous testing to ensure the reliability and validity of our results.

5.1 PROFITABILITY FACTORS OF GCC BANKS

Table 5 displays the empirical results of Equation (1) for all GCC banks. For all models 1 to 8, the lagged dependent variables are statistically significant, therefore justifying the use of a dynamic model. Moreover, for all models, the estimation results are consistent and unbiased because the Wald test shows that the model fits well, the Sargan test suggests no sign of over-identifying restrictions, second-order autocorrelations cannot be detected, and robust standard errors were calculated. We include the three country-level control factors (i.e., HHI, inflation, and GDP growth) and then replace them with the country-level dummy variables to account for cross-country variances and strengthen the

reliability of the results. We also divide the entire sample into two groups, small banks and large banks, based on the median total assets. We then repeat the regression analysis for each subgroup to see if there are any differences in the results.

However, after controlling for internal and external factors, the difference in profitability between conventional and Islamic banks becomes insignificant, indicating that our model has succeeded in controlling for the different aspects of the two business models. Higher liquidity and diversity seem to improve the profitability of GCC banks, whereas higher loss provisions and costs negatively affect the profitability of GCC banks. Small banks seem to be most affected by liquidity, which means that large banks have easier access to liquidity in times of stress. These results are similar to those reported by Alqahtani et al. (2017) but contrast those reported by Al-Matari (2023), who found that bank liquidity and asset quality had an insignificant effect on GCC banks' profitability. Al-Matari (2023) relied exclusively on the pool OLS estimator, which neglects the endogeneity problem and the dynamic nature and persistence of bank profitability. Nonetheless, bank size has a significant negative impact on the profitability of GCC banks, which agrees with the results of Batten and Vo (2019), who analyzed another emerging market. According to Alsharif (2020), scale inefficiency is the major cause of inefficiency in GCC banks, and most of these banks demonstrate decreasing returns to scale, which means that a higher level of inputs results in a lower level of output. This could be because a higher level of competition leads banks to have more branches as they attempt to provide convenience to their customers in return for higher revenue and market share (Berger et al., 1987).

In terms of external factors, market structure and inflation seem to be irrelevant and insignificant for the profitability of banks in the GCC region, while GDP growth has a positive impact, especially for large banks. Moreover, as we had already expected, oil prices seem to have an impact on banks in the GCC region, as increased oil prices result in greater returns, this supports the conclusions drawn by Alqahtani et al. (2017). According to Hesse and Poghosyan (2009), oil prices have an indirect effect on bank profitability in oil-exporting countries by

increasing public spending, which in turn affects bank profits through lending to the private sector and improves sentiment in the economy. This effect seems to be very pronounced for large banks, which means that the large GCC banks benefit the most from the rise in oil prices. However, the global financial crises in 2007 and 2008 did not have a significant influence on the profitability of GCC banks, while the latest non-financial crisis (i.e., the COVID-19 epidemic in 2020) had an adverse influence on them. This suggests that GCC banks have withstood the financial crises, which is not the case for the non-financial crises. This is in line with the study by Abdulla and Ebrahim (2022), who argue that the pandemic has affected the profitability of GCC banks.

5.2 GLOBAL CRISES EFFECT AND GCC BANK'S BUSINESS MODEL

For further analysis, we address the question of whether the bank's business model has an effect on modifying the impact of financial and non-financial crises on GCC bank profitability. Table 6 shows the result of Equation 2. We first estimate the model without a control variable and then include different combinations of control variables to examine their influence on the relationships. We find that after including the internal variables, the Islamic dummy is no longer significant, indicating that our control variables successfully controlled for the different aspects of the two business models. We also found that the regression estimates begin to improve when we include additional control variables, as indicated by the decrease in the Sargan statistic. This allows us to observe the net impact of the two global crises.

Regarding the impact of the global financial crisis, our earlier conclusion that the last global financial crises in 2007 and 2008 had no significant influence on the profitability of GCC banks still holds, and this conclusion also holds for Islamic banks as the interaction term is not statistically different from zero. This is in contrast to the findings of Alqahtani et al. (2017), who argue that Islamic GCC banks performed better than their conventional counterparts during the global financial crisis. However, their regression model was misspecified as they omitted the Islamic dummy variable and included only the interaction term. Thus, the condition that all constitutive terms must be included was not met, as the Islamic

dummy variable and the interaction terms were included in the model independently (Ibrahim & Arundina, 2022).

Table 5: The GMM regression results for all GCC banks (Equation 1), 2005–2022

Variables	All GCC banks				Small GCC banks		Large GCC banks	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	ROA	ROA	ROA	ROA	ROA	ROA	ROA	ROA
Lag	0.228*** (0.0614)	0.239*** (0.0558)	0.233*** (0.0549)	0.217*** (0.0670)	0.239*** (0.0719)	0.189*** (0.0705)	0.225** (0.104)	0.260** (0.103)
ETA	0.0148 (0.0160)		0.0210 (0.0193)		0.0388 (0.0259)		0.0129 (0.0211)	
CAP		0.0193 (0.0237)		0.0162 (0.0160)		0.0019 (0.0198)		0.00662 (0.0177)
LATA	0.0162 (0.00989)	0.0180 (0.0125)	0.0204** (0.00823)	0.0182** (0.00919)	0.0210** (0.0107)	0.0291* (0.0173)	-0.00159 (0.0132)	-0.00126 (0.0104)
NIITA	0.354** (0.147)	0.345* (0.177)	0.372** (0.148)	0.382*** (0.122)	0.235 (0.200)	0.293* (0.169)	0.631*** (0.140)	0.654*** (0.140)
LLPTL	-0.481*** (0.0476)	-0.471*** (0.0386)	-0.488*** (0.0294)	-0.481*** (0.0296)	-0.531*** (0.0507)	-0.537*** (0.0648)	-0.492*** (0.0701)	-0.492*** (0.0812)
CTI	-0.0340*** (0.00413)	-0.0344*** (0.00348)	-0.0347*** (0.00403)	-0.0344*** (0.00424)	-0.0346*** (0.00352)	-0.0347*** (0.00356)	-0.0381*** (0.00929)	-0.0401*** (0.0114)
Size	-0.385*** (0.105)	-0.324*** (0.0991)	-0.287*** (0.110)	-0.357*** (0.0939)	-0.0305 (0.268)	-0.460 (0.317)	-0.284 (0.195)	-0.216 (0.242)
ID	0.00664 (0.259)	0.0135 (0.314)	0.129 (0.616)	-0.0474 (0.399)	0.0404 (0.563)	0.00342 (0.452)	-0.217 (0.759)	0.0452 (0.829)
HHI	0.000169 (0.000282)	0.000128 (0.000359)			-0.000131 (0.000229)	4.65e-05 (0.000382)	-3.29e-05 (0.000170)	-1.51e-05 (0.000167)
INF	0.000241 (0.0135)	0.00606 (0.0231)			0.0326 (0.0412)	0.0286 (0.0118)	-0.00733 (0.0123)	-0.00846 (0.0123)
GDPG	0.00940 (0.00643)	0.00908 (0.00910)			0.00438 (0.00944)	0.00524 (0.00955)	0.00812 (0.00534)	0.0103* (0.00619)
OIL	0.0463 (0.0758)	0.0369 (0.0731)	0.0949* (0.0550)	0.0832 (0.0519)	0.0442 (0.114)	-0.0190 (0.121)	0.0811* (0.0455)	0.0784 (0.0491)
GFC	-0.0769 (0.129)	-0.0846 (0.209)	-0.0840 (0.160)	-0.0638 (0.134)	-0.148 (0.409)	-0.145 (0.229)	-0.0646 (0.130)	-0.0802 (0.140)
COVID-19	-0.247*** (0.0546)	-0.255*** (0.0836)	-0.222*** (0.0599)	-0.257*** (0.0855)	-0.108 (0.110)	-0.215* (0.120)	-0.145 (0.0987)	-0.122* (0.0673)
Constant	5.347*** (1.851)	4.729*** (1.444)	4.136*** (1.326)	5.033*** (1.423)	2.212 (2.627)	6.304** (3.016)	5.114* (2.700)	4.333 (2.761)
Observations	1,001	1,001	1,001	1,001	487	487	514	514
Robust errors	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Winsorized	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country Dummy	No	No	Yes	Yes	No	No	No	No
Sargan test	46.32	55.08	48.95	48.62	13.23	12.03	21.61	22.50
AR(1) test	-3.78***	-3.99***	-3.94***	-3.99***	-2.69***	-2.89***	-2.87***	-2.91***
AR(2) test	-1.33	-1.42	-1.40	-1.45	-1.22	-1.39	-1.04	-1.25
Chi ²	3807***	3307***	3151**	1467***	1690***	1337***	739.3***	1006***

Notes: ***, **, and * are indicating statistical significance at the 1%, 5%, and 10% levels, respectively

According to Gujarati and Porter (2009), the omission of a relevant variable can have serious consequences, one of which is that it leads to misleading conclusions about the statistical significance of the estimates. This could explain why their results are different. In addition, the recent non-financial crisis (COVID-19) seems to have a less negative impact on the profitability of Islamic banks as the interaction term is positive (Model 4: COVID-19×ID = 0.247). However, to

reach a clear conclusion about the relationship between the profitability of Islamic banks and the impact of COVID-19, we need to test the sum of the coefficients of the Islamic dummy and its interaction with COVID-19. The results show that the sum coefficient is not statistically significant (sum coefficient = -0.0711, Std.error = 0.0968, $z = -0.73$ and $p\text{-value} = 0.463$). This indicates that COVID-19 has no impact on the profitability of GCC Islamic banks, which means that, unlike their conventional counterparts, GCC Islamic banks have also withstood the non-financial crises. This confirms the finding of Abdulla and Ebrahim (2022) that in the midst of the COVID-19 pandemic, Islamic GCC banks exhibited superior performance in comparison to conventional GCC banks.

Table 6: The GCC banks' business model and the impact of the global financial and non-financial crises, 2005–2022

Variables	(1) ROA	(2) ROA	(3) ROA	(4) ROA	(5) ROA
Lag	0.660*** (0.0532)	0.659*** (0.0564)	0.234*** (0.0525)	0.218*** (0.0458)	0.214*** (0.0486)
ID	-1.051** (0.459)	-1.008** (0.473)	-0.00748 (0.275)	-0.00180 (0.301)	0.231 (0.472)
GFC	-0.121 (0.240)	-0.131 (0.240)	-0.117 (0.123)	-0.151 (0.117)	-0.116 (0.106)
GFC×ID	0.172 (0.572)	0.184 (0.684)	0.0454 (0.496)	0.115 (0.352)	0.142 (0.367)
COVID-19	-0.891*** (0.133)	-0.885*** (0.173)	-0.301*** (0.0812)	-0.318*** (0.0788)	-0.275*** (0.0831)
COVID-19×ID	0.378 (0.293)	0.410** (0.200)	0.159 (0.112)	0.247** (0.107)	0.126 (0.106)
OIL		0.0665 (0.0922)	0.0848* (0.0491)	0.0561 (0.0584)	0.0881* (0.0534)
Constant	0.873*** (0.163)	0.574 (0.452)	4.843*** (1.340)	5.268*** (1.307)	4.643*** (1.079)
Observations	1,001	1,001	1,001	1,001	1,001
Robust errors	Yes	Yes	Yes	Yes	Yes
Internal controls	No	No	Yes	Yes	Yes
External controls	No	No	No	Yes	No
Country dummy	No	No	No	No	Yes
Sargan test	56.94	58.68	48.37	39.98	39.12
AR(1) test	-4.15***	-4.16***	-3.91***	-3.89***	-3.85***
AR(2) test	0.25	0.26	-1.37	-1.34	-1.39
Chi ²	347.42***	311.56***	2616***	3383***	3054***

Notes: ***, **, and * are indicating statistical significance at the 1%, 5%, and 10% levels, respectively.

5.3 A COMPARISON OF THE PROFITABILITY FACTORS OF CONVENTIONAL AND ISLAMIC GCC BANKS

For a comparison of the profitability factors of conventional and Islamic GCC banks, Table 7 shows the regression results of Equation (3). However, in terms of liquidity, Islamic GCC banks experience a significantly higher increase in profitability when they have a higher level of liquid assets ($Liquidity_{IB} = 0.0224$ compared to $Liquidity_{CB} = 0.0109$). This is not surprising as Islamic banks lack adequate liquidity risk management systems, making it difficult for them to access liquidity in times of crisis (Ali, 2013; Alsharif et al., 2019). However, the profitability of GCC banks is significantly affected by an increase in non-interest income. This effect is larger for GCC conventional banks because a one percentage point increase in the non-interest income ratio, *ceteris paribus*, will increase the ROA by 0.719 units on average, respectively, whereas for GCC Islamic banks, the ROA will increase by 0.356 units, respectively, on average. Ekpu and Paloni (2016) pointed out that due to financialization, which disrupts the relationship between financial institutions and non-financial borrowers, business lending has contributed marginally to the profits of major banks. This result implies that large banks with a higher proportion of non-lending activities are more profitable. This explains the large positive coefficient impact of the non-interest income ratio on the profitability of GCC conventional banks compared to GCC Islamic banks, as conventional banks in the GCC are larger, with assets roughly twice the size of Islamic banks (see Table 2).

In addition, risky assets (i.e., low credit quality) negatively impact the profitability of conventional and Islamic GCC banks, with the former being more affected due to their larger coefficients. In other words, the ROA of conventional GCC banks would decline by 0.640 units on average, respectively, if the loan loss provision ratio increased by one percentage point, *ceteris paribus*, whereas the ROA of Islamic banks in the GCC would decrease by 0.357 units on average, respectively. According to Alsharif (2021), the effect on GCC Islamic banks is lower because the risk-taking behavior of GCC Islamic banks is mainly driven by the incentives of their shareholders, such that GCC Islamic banks have less high-risk assets that do not require a high level of provision in times of crisis. Nevertheless, the impact of size and operating inefficiency remains negative

regardless of the type of bank, indicating that both conventional and Islamic GCC banks suffer from scale inefficiency (Alsharif, 2020).

In terms of external factors, GDP growth only has a positive impact on the profitability of Islamic GCC banks. Islamic finance requires that all transactions be accompanied by real economic transactions that involve tangible fixed assets (Beck et al., 2013). Therefore, higher GDP growth will increase the demand for Islamic banking products to fund their customers' needs for fixed assets and heavy equipment, which, in turn, increases their profitability. According to Alqahtani et al. (2017), the Islamic GCC banks tend to be more vulnerable to changes in the actual economic conditions than to changes in the global financial industry compared to conventional banks.

Table 7: The GMM regression results for all GCC banks with interaction dummy (Equation 2), 2005–2022

Variables	GCC Conventional banks				GCC Islamic banks			
	(1) ROA	(2) ROA	(3) ROA	(4) ROA	(1) ROA	(2) ROA	(3) ROA	(4) ROA
Lag	0.219*** (0.0729)	0.195*** (0.0612)	0.214*** (0.0481)	0.198*** (0.0546)	0.219*** (0.0729)	0.195*** (0.0612)	0.228*** (0.0582)	0.195*** (0.0544)
ETA	-0.00330 (0.0238)		-0.00520 (0.0317)		0.010706 (0.01612)		0.00650 (0.01839)	
CAP		-0.00141 (0.0180)		-0.00537 (0.0136)		0.00270 (0.01275)		0.01863 (0.02090)
LATA	0.0107 (0.00653)	0.0109** (0.00473)	0.00862 (0.00616)	0.0100 (0.00709)	0.0245 (0.02073)	0.0204 (0.01276)	0.0224* (0.01287)	0.02048 (0.01802)
NIITA	0.719*** (0.151)	0.698*** (0.161)	0.657*** (0.141)	0.675*** (0.137)	0.356** (0.162)	0.326* (0.182)	0.373* (0.20973)	0.2538 (0.15634)
LLPTL	-0.640*** (0.0419)	-0.640*** (0.0319)	-0.641*** (0.0380)	-0.655*** (0.0317)	-0.3566*** (0.05139)	-0.357*** (0.04729)	-0.3765*** (0.04830)	-0.3765*** (0.04956)
CTI	-0.0395*** (0.00601)	-0.0415*** (0.00443)	-0.0403*** (0.00622)	-0.0409*** (0.00709)	-0.0304*** (0.00460)	-0.0299*** (0.00445)	-0.0319*** (0.00368)	-0.0310*** (0.00354)
Size	-0.237 (0.289)	-0.365* (0.214)	-0.200 (0.252)	-0.351 (0.271)	-0.19865 (0.52179)	-0.2988* (0.40161)	-0.3953 (0.39057)	-0.2833 (0.40886)
HHI	-5.43e-05 (0.000310)	5.24e-05 (0.000215)			0.000476 (0.00050)	0.00051 (0.00032)		
INF	-0.0160 (0.0137)	-0.0174 (0.0124)			0.01078 (0.02978)	0.0130 (0.02797)		
GDPG	0.00178 (0.00856)	-0.00191 (0.00717)			0.03353** (0.01431)	0.03925*** (0.01411)		
OIL	-0.0184 (0.181)	0.119 (0.183)	-0.00224 (0.132)	0.00528 (0.0958)	0.1375 (0.30812)	-0.1499 (0.37310)	0.208359 (0.27788)	0.19803 (0.24788)
Constant	5.068 (3.312)	5.720** (2.243)	5.100 (3.651)	7.521** (3.240)	5.068 (3.312)	5.720** (2.243)	5.100 (3.651)	7.521** (3.240)
Observations	1,001	1,001	1,001	1,001	1,001	1,001	1,001	1,001
Robust errors	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country Dummy	No	No	Yes	Yes	No	No	Yes	Yes
Winsorized	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Crises controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Sargan test	35.12	28.91	29.47	33.13	35.12	28.91	29.47	33.13
AR(1) test	-3.91***	-3.76***	-3.96***	-3.56***	-3.91***	-3.76***	-3.96***	-3.56***
AR(2) test	-1.52	-1.62	-1.64	-1.55	-1.52	-1.62	-1.64	-1.55
Chi ²	2779***	5437***	3239***	3216***	2779***	5437***	3239***	3216***

Notes: ***, **, and * are indicating statistical significance at the 1%, 5%, and 10% levels, respectively.

5.4 ROUBSTNESS CHECK WITH THE LSDVC DYNAMIC ESTIMATOR

To confirm our results, following Ibrahim and Rizvi (2017), we reestimate our main model for conventional ($N = 38$) and Islamic ($N = 23$) GCC banks separately using the LSDVC estimator, which stands for the bias-corrected least squares dummy variable. However, Kiviet (1995), Judson and Owen (1999), and Bun and Kiviet (2003) have developed the LSDVC, which is a dynamic estimator. Subsequently, Bruno (2005) modified the LSDVC estimator for unbalanced panel sets and showed that the LSDVC outperforms other estimators (e.g., system GMM, first-difference GMM, Anderson-Hsiao instrumental variable, and original LSDV) in terms of bias and squared error for small sample sizes. Therefore, when GMM cannot be employed efficiently, the LSDVC method has been explicitly proposed as a viable dynamic panel method (Meschi & Vivarelli, 2009). However, the Arellano-Bond and Blundell-Bond estimators are used to initialize the bias correction in the estimation process. The bias correction in the estimation is set to an order of magnitude of 3, and 200 Monte Carlo simulations are used to bootstrap the standard errors of the estimates. Both Ibrahim and Rizvi (2017) and Meschi and Vivarelli (2009) used this procedure when applying the LSDVC.

Table 8 contains our re-estimated regression results with the LSDVC method. Our main results remain the same, with minor differences. For instance, higher equity and regulatory capital seem to enhance the profitability of both banks, especially Islamic banks. This result is in accordance with those reported by Saeed et al. (2020), who found that there is an inverse relationship between capitalization and cost efficiency for conventional banks, and this substitution effect between capitalization and cost efficiency does not exist in Islamic banks. They argue that higher efficiency for conventional banks enables them to increase their leverage to pursue highly profitable risky assets, which is not the case for Islamic banks as their business model prohibits them from traditional debt instruments. Thus, for Islamic banks, a higher level of capital is essential to support their ability to pursue highly profitable risky assets as a complementary relationship. This result also concurs with those of Chowdhury and Rasid (2016), who showed that capital ratio positively impacts the ROA in GCC

Islamic banks. However, according to Alsharif (2021), higher capital seems to mitigate the moral hazard problem in all GCC banks and make them more cost-efficient.

In contrast to conventional banks, the profitability of Islamic banks is not influenced by market structure or inflation. The results show that the profitability of conventional GCC banks is negatively correlated with increasing market concentration and inflation. According to the quiet-life hypothesis, managers in a less competitive market show diminished incentive to improve the company's efficiency (Hicks, 1935). In addition, the interest-based business model of conventional banks is disadvantageous in an inflationary climate where there is usually a lot of money in the system and interest rates are low. This result concurs with that of Maghyereh and Awartani (2014). GDP growth continues to be relevant only for Islamic banks, confirming our earlier findings. However, the positive impact of oil price appears to be relevant only for conventional GCC banks, which is consistent with our earlier finding that the positive effect appears to be very pronounced for large banks, as conventional banks in the GCC are larger and their assets are about twice as large as those of Islamic banks (see Tables 2 and 5). Finally, the global financial crisis still has no significant impact on the two types of banks, while the non-financial crisis only negatively affects conventional banks. This confirms our earlier observation that, unlike their conventional counterparts, the GCC Islamic banks have withstood the non-financial crises (see Table 6)

Table 8: Results of the estimation with the bias-corrected (LSDVC) dynamic method, 2005–2022

Variables	GCC Conventional banks				GCC Islamic banks			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
	ROA	ROA	ROA	ROA	ROA	ROA	ROA	ROA
Lag	0.177*** (0.0201)	0.183*** (0.0201)	0.181*** (0.0213)	0.188*** (0.0216)	0.303*** (0.0256)	0.304*** (0.0256)	0.304*** (0.0256)	0.306*** (0.0255)
ETA	0.0177*** (0.00667)		0.0171** (0.00725)		0.0171** (0.00835)		0.0168** (0.00842)	
CAP		0.00808 (0.00493)		0.00760 (0.00545)		0.0163** (0.00747)		0.0161** (0.00752)
LATA	0.00612 (0.00373)	0.00576 (0.00373)	0.00613 (0.00402)	0.00577 (0.00410)	0.0127** (0.00547)	0.0112** (0.00557)	0.0127** (0.00551)	0.0112** (0.00560)
NIITA	0.627*** (0.0550)	0.616*** (0.0549)	0.624*** (0.0594)	0.614*** (0.0606)	0.366*** (0.0403)	0.370*** (0.0403)	0.364*** (0.0407)	0.367*** (0.0407)
LLPTL	-0.603*** (0.0201)	-0.610*** (0.0195)	-0.602*** (0.0216)	-0.609*** (0.0213)	-0.326*** (0.0289)	-0.316*** (0.0296)	-0.327*** (0.0290)	-0.317*** (0.0297)
CTI	-0.0437*** (0.00214)	-0.0443*** (0.00211)	-0.0436*** (0.00230)	-0.0442*** (0.00231)	-0.0304*** (0.00226)	-0.0305*** (0.00226)	-0.0304*** (0.00227)	-0.0306*** (0.00226)
Size	-0.208*** (0.0473)	-0.207*** (0.0480)	-0.207*** (0.0513)	-0.204*** (0.0531)	-0.271** (0.128)	-0.276** (0.122)	-0.278** (0.129)	-0.284** (0.124)
HHI	-0.000195** (7.56e-05)	-0.000220*** (7.49e-05)	-0.000192** (8.21e-05)	-0.000217*** (8.29e-05)	0.000337 (0.000223)	0.000334 (0.000217)	0.000344 (0.000228)	0.000340 (0.000221)
INF	-0.0179*** (0.00689)	-0.0167** (0.00696)	-0.0180** (0.00743)	-0.0168** (0.00765)	0.0168 (0.0177)	0.0179 (0.0178)	0.0168 (0.0177)	0.0180 (0.0178)
GDPG	-0.00289 (0.00491)	-0.00296 (0.00493)	-0.00286 (0.00528)	-0.00298 (0.00542)	0.0387*** (0.0109)	0.0424*** (0.0105)	0.0386*** (0.0109)	0.0421*** (0.0105)
OIL	0.139** (0.0581)	0.131** (0.0582)	0.139** (0.0628)	0.131** (0.0641)	-0.0764 (0.131)	-0.0960 (0.133)	-0.0758 (0.132)	-0.0953 (0.134)
GFC	-0.0610 (0.0666)	-0.0754 (0.0671)	-0.0633 (0.0718)	-0.0791 (0.0737)	-0.145 (0.163)	-0.142 (0.164)	-0.143 (0.163)	-0.140 (0.164)
COVID-19	-0.155** (0.0732)	-0.149** (0.0732)	-0.157** (0.0789)	-0.152* (0.0805)	0.0556 (0.170)	0.0490 (0.170)	0.0528 (0.170)	0.0454 (0.171)
Observations	637	637	637	637	364	364	364	364
Winsorized	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Initializing corrected bias	AB	AB	BB	BB	AB	AB	BB	BB
Bootstrapped errors	200	200	200	200	200	200	200	200

Notes: ***, **, and * are indicating statistical significance at the 1%, 5%, and 10% levels, respectively.

6. CONCLUSION

In conclusion, this study analyzes the factors that contribute to bank profitability in the GCC dual banking industry by considering various internal and external factors as well as the impact of the global financial and non-financial crises that influence the profitability of a bank. Our sample was made of 38 GCC conventional banks and 23 GCC Islamic banks, with data taken from 2005 to 2022. This study employs the system GMM estimator to address the endogeneity problem and the dynamic nature and persistence of bank profitability. While Islamic GCC banks are better capitalized, liquid, and diversified, they are less profitable and have a higher level of operating costs than conventional GCC banks. Overall, higher capital seems to enhance the profitability of GCC Islamic

banks. Liquidity was also found to be positively linked to the profitability of Islamic GCC banks because of the lack of an adequate liquidity risk-management system. Moreover, diversification supposedly enhances the profitability of the two types of GCC banks, although conventional banks are more influenced due to their large size. However, conventional and Islamic GCC banks are adversely affected by higher operating costs and low asset quality. It was also found that both types of GCC banks suffer from scale inefficiency as a result of the adverse influence that their size had on their profitability.

Regarding external factors, inflation and market structure have no discernible effect on the profitability of Islamic GCC banks, but they do impair the profitability of conventional ones. However, only a positive effect of GDP expansion can be observed on the profitability of Islamic GCC banks. This suggests that GCC Islamic banks benefit more from an improving economy as they rely on Sharia-compliant fixed-charge loan contracts that are linked to real assets and based on real economic transactions. Finally, the global financial crisis has no significant impact on the two types of banks, while the non-financial crisis only negatively affects conventional banks. This suggests that Islamic banks operating in the GCC have proven to be resilient in financial and non-financial crises.

The results of our study shed light on the mechanisms underlying the determinants of bank profitability in the GCC region. Several factors make our findings relevant. First, various internal and external factors affecting bank profitability are considered. Second, the study period covers all booms and busts in GCC banks' business cycles as well as global financial and non-financial crises. Third, this study directly compares and contrasts the determinants of profitability between Islamic and conventional GCC banks, which have not been addressed in the existing literature using the interaction variable technique. Fifth, by using the GMM framework, a robust econometric method, we can address the issues of profit persistence and inherent endogeneity, which could lead to biased and inconsistent estimates if they are not taken into account when estimating the determinants of bank profitability. Finally, to increase robustness, the dynamic bias-corrected LSDVC estimator is used to confirm our results.

The insights provided by this study have significant implications for managers, investors, policymakers, and regulators of GCC banks. One of the primary policy implications arising from this study is the need for GCC banks to improve their profitability by developing cost-efficient strategies. In addition, the study's results show that GCC banks suffer from scale inefficiency, suggesting that policymakers and regulators in the GCC region should pay greater attention to the expansionary strategies in their banking sector. Moreover, given the strong credit growth in the GCC region, policymakers and regulators should also pay closer attention to how banks manage their risks, especially for conventional GCC banks, as they are directed toward high-risk assets compared with GCC Islamic banks. Additionally, policymakers and regulators of GCC Islamic banks should be aware that a higher level of liquidity enhances their banks' profitability because of the absence of an adequate Sharia-compliant liquidity risk management system. Finally, regulators in the GCC region need to closely monitor their conventional banks, as they are more vulnerable to global non-financial crises such as the COVID-19 pandemic.

However, even though our study includes various internal and external factors affecting bank profitability, details on corporate governance mechanisms, including the composition of boards and audit committees, their qualifications, education, and diversity in terms of gender and background, would be helpful in understanding the determinants of bank profitability in the GCC region. Future studies are needed to address this issue.

REFERENCES

- Abdulla, Y., & Ebrahim, Y. (2022). Effect of COVID-19 on the performance of Islamic and conventional GCC banks. *Review of Financial Economics*, 40(3), 239–258. <https://doi.org/10.1002/rfe.1151>
- Al-Homaidi, E. A., Almaqtari, F. A., Yahya, A. T., & Khaled, A. S. D. (2020). Internal and external determinants of listed commercial banks' profitability in India: Dynamic GMM approach. *International Journal of Monetary Economics and Finance*, 13(1), 34–67. <https://doi.org/10.1504/IJMEF.2020.105333>
- Al-Matari, E. M. (2023). The determinants of bank profitability of GCC: The role of bank liquidity as moderating variable—Further analysis. *International Journal of Finance & Economics*, 28(2), 1423–1435. <https://doi.org/10.1002/ijfe.2485>
- Ali, S. S. (2013). State of Liquidity Management in Islamic Financial Institutions. *Islamic Economic Studies*, 21(1), 63–98. <https://doi.org/10.12816/0000240>
- AlKhouri, R., & Arouri, H. (2019). The effect of diversification on risk and return in banking sector: Evidence from the Gulf Cooperation Council countries. *International Journal of Managerial Finance*, 15(1), 100–128. <https://doi.org/10.1108/IJMF-01-2018-0024>
- Alqahtani, F., Mayes, D. G., & Brown, K. (2017). Reprint of Economic turmoil and Islamic banking: Evidence from the Gulf Cooperation Council. *Pacific-Basin Finance Journal*, 42(1), 113–125. <https://doi.org/10.1016/j.pacfin.2016.06.013>
- Alsharif, M. (2020). Banks Efficiency, Ownership Type and Listing Status in Gulf Cooperation Council Countries: A cross-countries analysis. *Journal of Critical Reviews*, 7(16), 309–319. <https://doi.org/10.31838/jcr.07.16.38>
- Alsharif, M. (2021). Risk, efficiency and capital in a dual banking industry: evidence from GCC banks. *Managerial Finance*, 47(8), 1213–1232. <https://doi.org/10.1108/MF-10-2020-0529>

- Alsharif, M., Nassir, A. M., Kamarudin, F., & Zariyawati, M. A. A. (2019). The productivity of GCC Islamic and conventional banks after Basel III announcement. *Journal of Islamic Accounting and Business Research*, 10(5), 770–792. <https://doi.org/10.1108/JLABR-04-2017-0050>
- Arellano, M., & Bover, O. (1995). Another look at the instrumental variable estimation of error-components models. *Journal of Econometrics*, 68(1), 29–51. [https://doi.org/10.1016/0304-4076\(94\)01642-D](https://doi.org/10.1016/0304-4076(94)01642-D)
- Batten, J., & Vo, X. V. (2019). Determinants of Bank Profitability—Evidence from Vietnam. *Emerging Markets Finance and Trade*, 55(6), 1417–1428. <https://doi.org/10.1080/1540496X.2018.1524326>
- Beck, T., Demirgüç-Kunt, A., & Merrouche, O. (2013). Islamic vs. conventional banking: Business model, efficiency and stability. *Journal of Banking and Finance*, 37(2), 433–447. <https://doi.org/10.1016/j.jbankfin.2012.09.016>
- Berger, A. N., Hanweck, G. A., & Humphrey, D. B. (1987). Competitive viability in banking. *Journal of Monetary Economics*, 20(3), 501–520. [https://doi.org/10.1016/0304-3932\(87\)90039-0](https://doi.org/10.1016/0304-3932(87)90039-0)
- Blundell, R., & Bond, S. (1998). Initial conditions and moment restrictions in dynamic panel data models. *Journal of Econometrics*, 87(1), 115–143. [https://doi.org/10.1016/S0304-4076\(98\)00009-8](https://doi.org/10.1016/S0304-4076(98)00009-8)
- Bolarinwa, S. T., Obembe, O. B., & Olaniyi, C. (2019). Re-examining the determinants of bank profitability in Nigeria. *Journal of Economic Studies*, 46(3), 633–651. <https://doi.org/10.1108/JES-09-2017-0246>
- Bruno, G. S. F. (2005). Estimation and Inference in Dynamic Unbalanced Panel-data Models with a Small Number of Individuals. *The Stata Journal: Promoting Communications on Statistics and Stata*, 5(4), 473–500. <https://doi.org/10.1177/1536867X0500500401>
- Bun, M. J. G., & Kiviet, J. F. (2003). On the diminishing returns of higher-order terms in asymptotic expansions of bias. *Economics Letters*, 79(2), 145–152. [https://doi.org/10.1016/S0165-1765\(02\)00299-9](https://doi.org/10.1016/S0165-1765(02)00299-9)

- Chowdhury, M. A. F., & Rasid, M. E. S. M. (2016). Determinants of Performance of Islamic Banks in GCC Countries: Dynamic GMM Approach. In *Advances in Islamic Finance, Marketing, and Management* (pp. 49–80). Emerald Group Publishing Limited. <https://doi.org/10.1108/978-1-78635-899-820161005>
- Dietrich, A., & Wanzenried, G. (2011). Determinants of bank profitability before and during the crisis: Evidence from Switzerland. *Journal of International Financial Markets, Institutions and Money*, 21(3), 307–327. <https://doi.org/10.1016/j.intfin.2010.11.002>
- Djalilov, K., & Piesse, J. (2016). Determinants of bank profitability in transition countries: What matters most? *Research in International Business and Finance*, 38(1), 69–82. <https://doi.org/10.1016/j.ribaf.2016.03.015>
- Dougherty, C. (2007). *Introduction to Econometrics* (3rd ed.). Oxford University Press.
- Ekpu, V., & Paloni, A. (2016). Business lending and bank profitability in the UK. *Studies in Economics and Finance*, 33(2), 302–319. <https://doi.org/10.1108/SEF-04-2015-0097>
- García-Herrero, A., Gavilá, S., & Santabárbara, D. (2009). What explains the low profitability of Chinese banks? *Journal of Banking and Finance*, 33(11), 2080–2092. <https://doi.org/10.1016/j.jbankfin.2009.05.005>
- Gujarati, D. N., & Porter, D. C. (2009). *Basic Econometrics* (5th ed.). MacGraw-Hill.
- Hesse, H., & Poghosyan, T. (2009, October). *Oil Prices and Bank Profitability: Evidence From Major Oil-Exporting Countries in the Middle East and North Africa* (IMF Working Papers No. 09/220). <https://doi.org/10.5089/9781451873672.001>
- Hicks, J. R. (1935). Annual survey of economic theory: the theory of monopoly. *Econometrica*, 3(1), 1–20.

- Ibrahim, M. H. (2015). Issues in Islamic banking and finance: Islamic banks, Shari'ah-compliant investment and sukuk. *Pacific Basin Finance Journal*, 34(1), 185–191. <https://doi.org/10.1016/j.pacfin.2015.06.002>
- Ibrahim, M. H., & Arundina, T. (2022). *Practical panel modelling*. National Committee of Islamic Economy and Finance (KNEKS).
- Ibrahim, M. H., & Rizvi, S. A. R. (2017). Do we need bigger Islamic banks? An assessment of bank stability. *Journal of Multinational Financial Management*, 40(1), 77–91. <https://doi.org/10.1016/j.mulfin.2017.05.002>
- Islam, M. S., & Nishiyama, S. I. (2016). The determinants of bank net interest margins: A panel evidence from South Asian countries. *Journal of Applied Finance & Banking*, 6(3), 77–97.
- Islamic Financial Services Board. (2023). *Islamic Financial Services Industry Stability Report*. <http://www.ifsb.org/seco3.php>
- Judson, R. A., & Owen, A. L. (1999). Estimating dynamic panel data models: a guide for macroeconomists. *Economics Letters*, 65(1), 9–15. [https://doi.org/10.1016/S0165-1765\(99\)00130-5](https://doi.org/10.1016/S0165-1765(99)00130-5)
- Khan, S. (2022). Determinants of Banks Profitability: An Evidence from GCC Countries. *Journal of Central Banking Theory and Practice*, 11(3), 99–116. <https://doi.org/10.2478/jcbtp-2022-0025>
- Khediri, K. Ben, Charfeddine, L., & Youssef, S. Ben. (2015). Islamic versus conventional banks in the GCC countries: A comparative study using classification techniques. *Research in International Business and Finance*, 33(1), 75–98. <https://doi.org/10.1016/j.ribaf.2014.07.002>
- Kiviet, J. F. (1995). On bias, inconsistency, and efficiency of various estimators in dynamic panel data models. *Journal of Econometrics*, 68(1), 53–78. [https://doi.org/10.1016/0304-4076\(94\)01643-E](https://doi.org/10.1016/0304-4076(94)01643-E)
- Kohlscheen, E., Murcia, A., & Contreras, J. (2018, January). *Determinants of bank profitability in emerging markets* (BIS Working Papers No. 686). <https://www.bis.org/publ/work686.htm>

- Kumar, V., & Bird, R. (2022). Factors influencing the profitability of banks in India and China. *Applied Economics Letters*, 29(5), 371–375. <https://doi.org/10.1080/13504851.2020.1869153>
- Le, T. D., & Ngo, T. (2020). The determinants of bank profitability: A cross-country analysis. *Central Bank Review*, 20(2), 65–73. <https://doi.org/10.1016/j.cbrev.2020.04.001>
- Maghyereh, A., & Abdoh, H. (2021). The effect of structural oil shocks on bank systemic risk in the GCC countries. *Energy Economics*, 103(1), 105568. <https://doi.org/10.1016/j.eneco.2021.105568>
- Maghyereh, A. I., & Awartani, B. (2014). The effect of market structure, regulation, and risk on banks efficiency: Evidence from the Gulf cooperation council countries. *Journal of Economic Studies*, 41(3), 405–430. <https://doi.org/10.1108/JES-05-2012-0067>
- Menicucci, E., & Paolucci, G. (2016). The determinants of bank profitability: empirical evidence from European banking sector. *Journal of Financial Reporting and Accounting*, 14(1), 86–115. <https://doi.org/10.1108/JFRA-05-2015-0060>
- Meschi, E., & Vivarelli, M. (2009). Trade and Income Inequality in Developing Countries. *World Development*, 37(2), 287–302. <https://doi.org/10.1016/j.worlddev.2008.06.002>
- Mohamed, W. M. H. (2018). Difference between Conventional Banks and Islamic Banks in the Middle East Region: A Risk Management Approach. *Journal of Alexandria University for Administrative Sciences*, 55(1), 49–76. <https://doi.org/10.21608/acj.2018.37209>
- Olson, D., & Zoubi, T. A. (2008). Using accounting ratios to distinguish between Islamic and conventional banks in the GCC region. *The International Journal of Accounting*, 43(1), 45–65. <https://doi.org/10.1016/j.intacc.2008.01.003>

- Pervana, M., Pelivan, I., & Arnerić, J. (2015). Profit persistence and determinants of bank profitability in Croatia. *Economic Research-Ekonomska Istrazivanja*, 28(1), 284–298. <https://doi.org/10.1080/1331677X.2015.1041778>
- Saeed, M., Izzeldin, M., Hassan, M. K., & Pappas, V. (2020). The inter-temporal relationship between risk, capital and efficiency: The case of Islamic and conventional banks. *Pacific Basin Finance Journal*, 62(1), 101328. <https://doi.org/10.1016/j.pacfin.2020.101328>
- Selim, S., & ElSady, H. M. (2024). The Impact of Foreign Banks entry in Egyptian Banking Sector on Local Banks Profitability and Performance. *Journal of Alexandria University for Administrative Sciences*, 61(2), 197–219. <https://doi.org/10.21608/acj.2024.348628>
- Sufian, F., & Habibullah, M. S. (2009). Determinants of bank profitability in a developing economy: Empirical evidence from Bangladesh. *Journal of Business Economics and Management*, 10(3), 207–217. <https://doi.org/10.3846/1611-1699.2009.10.207-217>

العوامل المساهمة في ربحية البنوك في منطقة دول مجلس التعاون الخليجي خلال الأزمات المالية وغير المالية العالمية

د. محمد الشريف

ملخص البحث باللغة العربية

تم استخدام طريقة الفروق العامة للعووم (GMM) مع تقنية التفاعل الوهمي المتغير لتحليل العوامل المساهمة في ربحية البنوك في القطاع المصرفي المزدوج لدول مجلس التعاون الخليجي وتأثير الأزمات المالية وغير المالية العالمية. تغطي بياناتنا 38 بنكا تقليدياً في دول مجلس التعاون الخليجي و23 بنكا إسلامياً في دول مجلس التعاون الخليجي في الفترة من 2005 إلى 2022. وفي حين أن البنوك الإسلامية في دول مجلس التعاون الخليجي تتمتع برسملة وسيولة وتنوع أفضل، إلا أنها أقل ربحية ولديها تكاليف تشغيل أعلى من نظيراتها التقليدية. وتشير نتائجنا إلى أن الأزمة المالية العالمية ليس لها تأثير كبير على هذين النوعين من البنوك، في حين أن الأزمة غير المالية تؤثر سلباً على البنوك التقليدية فقط. ويشير هذا إلى أن البنوك الإسلامية العاملة في دول مجلس التعاون الخليجي أثبتت مرونتها في مواجهة الأزمات المالية وغير المالية. علاوة على ذلك، فإن تأثير العوامل الرئيسية التي تساهم في ربحية البنوك الخليجية يختلف بشكل كبير بين البنوك التقليدية والإسلامية. إضافة إلى ذلك، تم استخدام طريقة تقدير بديلة، مثل مقدر LSDVC المصحح للتحيز الديناميكي، لتأكيد النتائج التي توصلنا إليها. توفر نتائج هذه الدراسة رؤى قيمة للمديرين والمستثمرين وصانعي السياسات والمنظمين في البنوك الخليجية.

الكلمات الدالة: ربحية البنك، البنوك الخليجية، البنوك الإسلامية، GMM، LSDVC.

Suggested Citation according to APA Style

Alsharif, M. (2024). Factors Contributing to Bank Profitability in the GCC Region during Global Financial and Non-Financial Crises. *Journal of Alexandria University for Administrative Sciences*, 61(5), 255-283.

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