ISLAMIC AND CONVENTIONAL BANKS' GOVERNANCE IN THE GCC REGION: A COMPARATIVE ANALYSIS OF RISK-BASED FINANCIAL PERFORMANCE

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Abstract

This study measures the risk-taking behaviour of banks in the Gulf Cooperation Council (GCC). Then, it investigates how this risk-taking leads to enhanced financial performance for Islamic banks compared to conventional banks. Our sample includes all locally incorporated 63 chartered banks, including 22 Islamic banks and 41 conventional banks in the six GCC countries for 13 years between 2003 and 2015. We adopt regression analysis, whereas the mean difference test is used to evaluate the variance of performance. The analysis shows that banks' internal growth significantly determines risk-taking and financial performance. GCC's Islamic banks are riskier than their conventional counterparts. Two measures of risk have rarely been observed as statistically significant factors for determining the profitability of conventional banks. Ultimately, the category of the bank in the GCC region significantly impacts financial performance as a whole, and therefore, bank policy must be considered. The results provided valuable perceptions to Islamic and conventional banks across the GCC, allowing them to improve their financial performance by considering risk-taking behaviour. It likewise provides information that supports investors, regulators and executive managers in GCC countries. The study's originality lies in its contribution to GCC nations by presenting a comparative view of the two clusters of banks.

Keywords: Bank Risk-Taking, Return on Assets, Return on Equity, Conventional Bank, Islamic Banks, GCC Region

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1. INTRODUCTION

Banking is important for financing the growth of businesses and enabling economic growth, thereby leading to economic stability (Siraj & Pillai, 2012). Moreover, the collapse of some banks may lead to a global financial crisis or a recession, as evidenced in the financial crises of 2008 (Dullien et al., 2010). Bank performance is volatile as many disruptions, such as technology and other socio-political conditions, disrupt banking services consistently. In this regard, the role of the central bank's policy is important as it determines the flow of financing and the ultimate shape of the financial ecosystem, as banks need to adhere to many regulations that include capital adequacy requirements (Ullah & Al-Karaghouli, 2017; Alqatan, 2024, 2025).

Related to lending behaviour and banking sector dynamics, Tran et al. (2024), based on a large sample of the United States (US) bank holding businesses, document reliable evidence that well-capitalized banks are more likely to raise loan growth. Similarly, they found one of the first pieces of evidence signifying the absence of an association between lending and capital for banks throughout this period. Based on data from 17 non-Islamic and 17 Islamic countries from 2005 to 2013, Mushtaq and Siddiqui (2016) propose that individuals in Islamic countries are not anxious about the interest rate on saving. However, in non-Islamic nations, the interest rate has positive influences. Additionally, national credit provided by banks negatively impacts investment in non-Islamic countries, whereas, in Islamic countries, remittances positively influence investment.

In the Gulf Cooperation Council (GCC) context, the dichotomy of banking being Islamic and conventional seems to be another performance factor (AlHares & AlBaker, 2023; Elbahar et al., 2021; Michael et al., 2023; Sbeiti & Alqatan, 2021; Rhanoui & Belkhoutout, 2019; Uddin, 2015). This is because both bank types' banking structures and associated risk profiles vary significantly. Therefore, the extent of variety between the two is subject to research (Aman et al., 2016). In addition, there are some commonalities (Ariff & Lewis, 2014). These comparisons are, however, yet to be explored more in the countries of interest in this study, i.e., Bahrain, Saudi Arabia, Kuwait, Qatar, and the United Arab Emirates (UAE). The risk measures include the bank risk assets ratio and loan-to-assets ratio. Furthermore, return on assets (ROA) and return on equity (ROE) are used as performance metrics rather than the risk measure as standard deviation (Alqatan et al., 2025).

Despite the influence of Islamic banks in GCC countries, there is limited research exploring the differences between them and conventional banks. This is even though the proportion of assets of Islamic banks to the total assets of the banking sector in each of the GCC countries at the end of the second quarter of 2017 was substantial. Specifically, the proportions were: Saudi Arabia (26%), Kuwait (45%), Qatar (26%), the UAE (20%), Bahrain (30%), and Oman (4%). One of the most important factors in compiling this research is the rapid growth of Islamic finance, which reached 1,509 billion dollars in 2017. Specifically, we chose to focus on the GCC countries due to the reason that they contributed around 49% of this share, with the breakdown being: Saudi Arabia (23.4%), the UAE (10.3%), Qatar (6.1%), Kuwait (5.1%), and Bahrain (4%) (King, 2017).

The GCC countries controlled five of the top 10 Islamic banks (wholly or with Islamic windows) worldwide in 2016. Al Rajhi Bank (Saudi Arabia) ranked first globally in Islamic assets, reaching 90.6 billion dollars by the end of 2016. It was followed by the National Commercial Bank (Saudi Arabia) with Islamic assets amounting to 55.7 billion dollars (representing 47.3% of its total assets and, therefore, classified as a bank with an Islamic window), followed by Kuwait Finance House (53.2 billion dollars) in fifth place, and Dubai Islamic Bank (47.6 billion dollars) in sixth place. Finally, Qatar Islamic Bank (38.4 billion dollars) ranked as the tenth biggest Islamic bank.

How does this study differ from the previous related studies? While Abu ALHaija et al. (2024) present insights into preparing ethical practices in the banking industry of GCC countries for profit maximization, this study focuses on risk behaviour. While El-Chaarani et al. (2024) compare the Islamic and conventional banking sectors in the GCC, this study explores the key success factors that might affect their performance in just four years. We extend the analysis time frame to 13 years, presenting the trend over a long period. While this study investigates risk and financial performance, other studies, such as Alsharif (2025), only explore liquidity risk drivers. Correspondingly, none of the previous studies presents the results per country to clarify the performance of banks in each country in the GCC for a long time (13 years), as we present in this current study. Evaluating the performance and risk of the two bank types suffers from a lack of common understanding even from some specialists, especially in the case of mergers or acquisitions. Based on 63 banks (22 Islamic and 41 conventional banks) across the GCC countries for 13 years, the banks' growth significantly determines risk-taking and financial performance. Based on our analysis, we found that Islamic banks are riskier than conventional banks. Our adopted risk measures have been observed as significant factors in determining the financial performance of conventional banks.

This paper is structured as follows. The literature review is presented in Section 2. The methodology is detailed in Section 3. The results are shown and discussed in Section 4. The conclusion is outlined in Section 5.

2. LITERATURE REVIEW

Investors tend to consider whether to go for Islamic or conventional banking, as both offer different risk structures (Bollen, 1998; Arslan et al., 2021; Hichri & Alqatan, 2024). Banks use risk management tools to deal with speculative risks in particular (Chance & Brooks, 2016). Islamic banks have fewer hedging tools, consequently making them riskier. Despite this, many banks have added Islamic windows as they are in demand in the market (Siddiqi, 1998). Additionally, when banks are riskier for investors, they absorb the risks of the businesses to whom they provide finance. Therefore, they are considered suitable risk-sharing structures (Ullah et al., 2017; Ullah & Al-Karaghouli, 2017). As such, Islamic banks have shown stability in mortgage finance (Rashwan & Ehab, 2016). Similarly, on the performance side, a study of 265 Islamic funds in 20 countries, consisting of the GCC and Malaysia, concluded that Islamic funds outperformed international equity market benchmarks and were a strong competitor

globally (Hoepner et al., 2011). Dridi and Hasan (2010) agreed with these studies when they demonstrated the preference of Islamic banks over conventional banks during the 2008 global crisis in terms of profitability and growth as a measure of performance in eight countries. However, alternative views opposing Islamic banks argue that they were not severely affected during the global crisis only because they possess a higher percentage of liquid assets (Abdulle & Kassim, 2012).

2.1. Risk management

Risk is defined in pure mathematics as the measurable uncertainty surrounding the conceivable results of a random variable or stochastic process. This involves examining the probability of deviations from a predictable value and the probability distribution of these occurrences. Risk can be characterized mathematically using a variety of metrics, each of which captures a distinct facet of uncertainty and possible loss. Using risk measures, which are functional and interpret a random variable *X* (signalling probable benefits or losses) to an actual value that signifies the risk connected with *X*, is one basic strategy. Among these, the cohesive risk measures are a distinguished class. Additionally, Cascos and Molchanov (2007) inspected the risk in a multivariate setting, where the authors present a framework for calculating risks that take values in an abstract cone. This method simplifies classical risk measures and establishes a connection between risk measures and statistical depth functions, providing a regular clarification of risk in multivariate contexts.

In mathematical finance, risk is quantitatively well-defined as the possible variability in an investment's earnings, often linked with the possibility and degree of adverse outcomes. This quantification is critical for informed decision-making below the uncertainty. One introductory tactic to counting risk is using risk measures, which are mathematical functions that assign an actual number to a portfolio's possible losses and show the level of risk. A broadly documented class of these is the coherent risk measures, presented by Artzner et al. (1999), which mollify properties such as translation invariance, subadditivity, homogeneity, and monotonicity. These features ensure that the risk measure aligns with intuitive concepts of risk. For instance, the appraised risk should drop by a given amount if a convinced amount is added to each portfolio outcome (translation invariance). Assembly portfolios should inspire diversification rather than substantially levitation general risk (subadditivity).

Risk-taking has been associated with variables other than performance, as it has been tested for governance and culture (Stulz, 2016; Makni Fourati et al., 2024), and it has been shown that risk-taking is associated with ownership structure and competition in the UAE (Hassan et al., 2003). One of the most important findings is that there is a significant difference between risk-taking appetites among Islamic and conventional banks. Similarly, in China, Albitar et al. (2019) found similar results regarding ownership structure, which may indicate the comparability of the same banking system in most countries and their influence on the same variables in many ways (Dong et al., 2014). The possibility of agency problems and increased insider holdings ownership structures are also associated with increased risk (Demsetz et al., 1997). Therefore, we will control the previously studied variables and avoid others whose results have been repeated in different studies in different countries.

Additionally, similar comparisons are made in other studies to understand the determinants of risk (Cornett et al., 2010). On the other hand, numerous studies have been undertaken to determine if one of the two types of banks outperformed the other in performance using different numerical measures such as profitability, efficiency, and liquidity. For example, an interesting study compares the two banking systems in Pakistan based on efficiency, asset quality, and bank stability position (Aman et al., 2016). The results varied between the superiority of conventional banks to Islamic banks and vice versa. In another study based on 66 banks in 12 African and Asian countries, conventional banks were better than Islamic based on cost, returns, and profitability (Rashwan & Ehab, 2016).

In contrast, some studies show opposing views. For example, Islamic banks have been proven to outperform conventional banking on six profitability ratios in the GCC region from 2000 to 2005 (Olson & Zoubi, 2011). Furthermore, a study in Bahrain that included 13 Islamic and 13 conventional banks for five years from 2010 to 2014 found no significant difference between performance concerning their dependent variables (Hawaldar et al., 2017). In addition, data from 10 banks in Bangladesh have shown that conventional banks dominate in all their components except for earning quality (Rashid, 2020). The comparison of banks in our study is in terms of capital adequacy, asset quality, management, earnings, liquidity, and sensitivity. The two types of banks share the importance of asset quality in influencing ROE, capital adequacy, and earning quality, which are significant determinants of profitability for Islamic banks.

2.2. Challenges to risk management

Islamic banks still follow some of the same accounting standards as conventional banks because of the lack of adoption and standardization of their Sharia alternatives, which led to the lack of clarity of their transactions and the fluctuation of their practices, as claimed in recent studies (El-Hawary et al., 2007; Noman, 2002; Siddiqi, 1998, 2000). Noman (2002) declared a lack of Islamic banks' record of innovations and weaknesses in research and development. Therefore, without standards, they have no choice, but to adopt the theories and ratios used in conventional banks regarding their profitability calculation.

Among the other challenges that Islamic banks face, in general, is a lack of experts and specialists who are crucially needed to manage potential risks. It is recommended that the Islamic financial sector's supervisory, regulatory, and human resources aspects be strengthened to manage the mortgage crisis and any other future crises better. This is what Dridi and Hasan (2010) emphasized when they explained a more severe deterioration in the profitability of Islamic banks compared to conventional banks in the year after the crisis due to poor risk management (Rhanoui & Belkhoutout, 2019). Rhanoui and Belkhoutout (2019) suggested that what makes these recommendations essential is the exposure of Islamic banks to higher risks than their traditional counterpart since Islamic bank risks are equal to conventional bank common risks plus risks specific

to Islamic banks that arise from their unique asset classes and liability structures. The narrow number of tools available for hedging these risks in Islamic banks further exacerbates that matter.

Additionally, the GCC region has an inefficient capital market, which will impede the growth of Islamic banks (Olson & Zoubi, 2011). For example, the Kuwait Stock Exchange is inefficient even though it is classified as an emerging market (Hassan et al., 2003).

Furthermore, there is a monopoly in Bahrain, Qatari, and Omani markets (Al-Muharrami et al, 2006). We did not include any foreign banks in this study since most of these banks were recently established, resulting in a lack of longitudinal data to evaluate the model. This research aims to compare the differences, if any, in banking risks and performance for Islamic and conventional banks in the GCC countries. As such, the following two hypotheses are formulated:

H1a: Islamic banks in GCC countries have a positive relationship between risk-taking behaviour and performance.

H1b: Conventional banks in GCC countries have a positive relationship between risk-taking behaviour and performance.

H2: Islamic banks are less profitable and riskier than conventional banks in the GCC countries.

3. METHODOLOGY

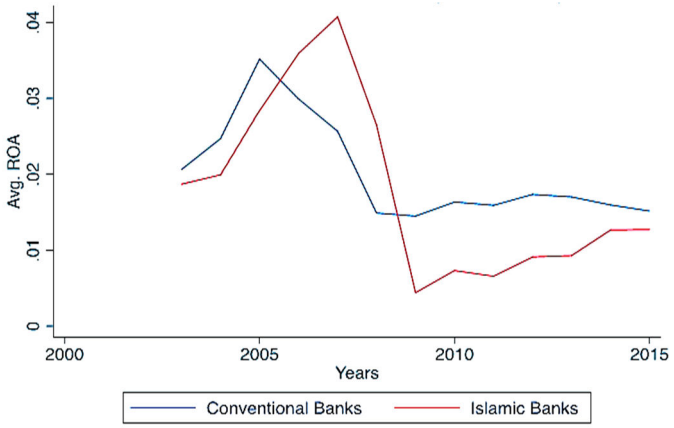
The data for this research is collected from the Institute of Banking Studies, spanning 2003–2015. The data includes domestic conventional and Islamic banks in the GCC countries. The total number of banks covered is 63, 22 of which are Islamic and 41 of which are conventional. *ROA* and *ROE* are used as measures for banks' performance.

$$Bank\ risk\ assets\ (BRA) = BRA/Assets \quad (1)$$

$$Loan\ to\ asset\ ratio\ (LA) = Loans/Assets \quad (2)$$

Equations (1) and (2) are used as measures of risk. Banks are classified according to financial ratios in the five GCC countries. Bahrain has six Islamic banks and seven conventional banks. In Kuwait, there are 10 banks, five of which are conventional and five of which are Islamic. In the UAE, there are 18 banks, four of which are Islamic and 14 conventional. Qatar has six conventional and six Islamic banks. Saudi Arabia has the lowest number of Islamic banks among the five countries, which include three Islamic banks and nine conventional banks. As is evident in Figure 1, from 2003 to 2005, the conventional banks outperformed their Islamic counterparts to reach the highest average ROA during the study period, which exceeds 3.5%. However, in 2006, just before the mortgage crisis, we saw better performance in Islamic banks than in conventional banks. The graph shows that the Islamic bank's outperformance peaked in 2007 with an average return of just over 4%. This is in line with the findings of Aman et al. (2016), Rashwan and Ehab (2016) and Abdulle and Kassim (2012).

Figure 1. GCC Banks performance (i.e., *ROA*) (2003–2015)



Source: Authors' elaboration.

Thereafter, the curve decreased sharply to around 0.45% in 2009, the lowest average return recorded by Islamic banks during the 13 years under study. This corresponds to what is documented by Dridi and Hasan (2010). In 2009, conventional banks achieved the lowest returns, reaching about 1.45%. However, it was the beginning of the recovery of their returns when they resumed outperforming their Islamic counterparts until the end of the research period. To describe the variables in the study in more detail, we use the following statistical tables to show the internal determinants of risk and performance used. The numbers in the following three descriptive tables represent the mean values of each variable.

The data shows that conventional banks are older and have a more widespread business (as indicated by more observations and a higher number of branches). Furthermore, conventional banks are more significant than Islamic banks in terms of volume of assets. The average *ROA* are higher for conventional banks (except for Qatar), indicating better performance. At the same time, our risk measurements *(BRA* and *LA)* are higher for Islamic banks. Conventional banks' higher internal growth rate makes them act like growth companies, while Islamic banks may act as mature institutions. Islamic banks have a more limited pool of investment opportunities and channels than conventional banks. This is because they must stay within Islamic law (i.e., Shariah-compliant investments only). Consequently, Islamic banks take higher risks or enter riskier projects to get a higher or at least acceptable return.

Table 1. Descriptive statistics of the GCC conventional and Islamic banks

Variables	*N*	*Mean*	*SD*	*Min*	*Max*
Panel A: All banks in the GCC					
Assets	750	1.718e+10	2.026e+10	1.891e+08	1.480e+11
ROA	750	0.0190	0.0169	-0.0727	0.126
ROE	750	0.111	0.365	-9.464	0.528
BRA	750	0.655	0.136	0.0696	0.940
LA	750	0.615	0.139	0.00271	0.914
CAR	750	0.158	0.0712	0.00768	0.799
CR	750	0.0837	0.0616	3.88e-05	0.420
IGR	687	0.0894	0.121	-0.725	1.064
FAR	750	0.0534	0.169	0	0.867
Log Assets	521	23.10	1.166	20.07	25.72
Panel B: Conventional banks					
Assets	521	1.940e+10	2.176e+10	5.204e+08	1.480e+11
ROA	521	0.0201	0.0148	-0.0727	0.126
ROE	521	0.120	0.430	-9.464	0.471
BRA	521	0.617	0.127	0.0696	0.930
LA	521	0.578	0.128	0.00271	0.841
CAR	521	0.149	0.0530	0.00768	0.390
CR	521	0.0906	0.0630	0.00428	0.420
IGR	480	0.0960	0.116	-0.725	0.636
FAR	521	0.00948	0.00690	0.000415	0.0828
Log Assets	521	23.10	1.166	20.07	25.72
Panel C: Islamic banks					
Assets	229	1.214e+10	1.523e+10	1.891e+08	8.427e+10
ROA	229	0.0163	0.0206	-0.0539	0.117
ROE	229	0.0915	0.121	-0.593	0.528
BRA	229	0.739	0.118	0.108	0.940
LA	229	0.701	0.124	0.0803	0.914
CAR	229	0.178	0.0983	0.0634	0.799
CR	229	0.0682	0.0552	3.88e-05	0.220
IGR	207	0.0741	0.131	-0.367	1.064
FAR	229	0.153	0.281	0	0.867
Log Assets	229	22.51	1.282	19.06	25.16

Note: CAR — capital adequacy ratio, measured as Equity / Assets; CR — cash ratio, measured as Cash / Assets; FAR — fixed asset ratio, measured as Fixed assets / Assets; IGR — internal growth rate, measured as Retained income$_{End}$ / Equity$_{Beg}$.

Although higher risk is expected to result in a higher return, we noticed a lower return for Islamic banks paradoxically. This is coupled with the inability of Islamic banks to hedge risk as effectively as conventional banks. On the other hand, Islamic banks seem to be more efficient or have better assets, especially loans that generate the largest percentage of return in the banking sector, as Islamic banks surpass conventional banks in their fixed assets and loans to total assets ratio (*FAR* and *LA*). Finally, Islamic banks are financially stronger since they have a higher capital adequacy ratio. They can deal with unanticipated risks more than conventional banks, which are more liquid than their Islamic counterparts, as indicated by the *CR* ratio. This particular finding supports Etab's and El-Moslemany's (2020) conclusion.

To test *H1a* and *H1b*, we must identify the most important factors affecting the risk scale under study. Table 2 is a descriptive table of the five countries tested in terms of the variables used in the research. In order to test the hypotheses, there will be four ordinary least squares (OLS) regressions. In the first and second regressions, we examine the important factors in determining risk. The mean difference test is used to test *H2*. This is done by calculating the mean performance and risk measures for each conventional and Islamic banking system and, thereafter, comparing these values to determine the higher ones. This test will be carried out for all GCC banks and then for banks in each country. To avoid being affected or overdrawn by growth and leverage, they are controlled in our regressions to have new, specific, and accurate results. Besides controlling for firm size, capital structure, and internal growth, the third and fourth regressions represent the relation between risk and performance.

$$BRA = a_0 + a_1 CAR + a_2 Log\ Assets + a_3 CR + a_4 FAR + a_5 IGR \quad (3)$$

$$LA = b_0 + b_1 CAR + b_2 Log\ Assets + b_3 CR + b_4 FAR + b_5 IGR \quad (4)$$

$$ROA = c_0 + c_1 BRA + c_2 LA + c_3 CAR + c_4 CR + c_5 Log\ Assets + c_6 FAR + c_7 IGR \quad (5)$$

$$ROE = d_0 + d_1 BRA + d_2 LA + d_3 CAR + d_4 CR + d_5 Log\ Assets + d_6 FAR + d_7 IGR \quad (6)$$

4. EMPIRICAL RESULTS

The empirical analysis starts by examining what determines banking risks in GCC countries. The required test is carried out, and the results are displayed in Table 2, which shows that both banking systems are opposite in terms of the factors that affect their risk level. For example, the results show that the most important factors that affect the conventional banks in GCC countries are mainly capital adequacy and operating efficiency. On the other hand, this is not the case for Islamic banks, as the cash level, bank size, and bank growth rate mainly influence their risk. The effect of

growth rate on the bank loan-to-asset ratio refers to the fact that the bank's growth essentially needs financing, which usually comes from the profits generated by loan investments.

Table 2. Risk determinants of GCC banks

Variables	*Conventional banks*		*Islamic banks*	
	BRA regression	*LA regression*	*BRA regression*	*LA regression*
CAR	-0.5089*** (0.000)	-0.6751*** (0.000)	0.0692 (0.499)	-0.0920 (0.405)
CR	0.0667 (0.452)	0.0543 (0.544)	-0.3608*** (0.003)	-0.4939*** (0.000)
Log Assets	0.0016 (0.788)	0.00002 (0.997)	0.0290*** (0.000)	0.0224*** (0.001)
FAR	4.4794*** (0.000)	3.5891*** (0.000)	0.0029 (0.900)	-0.0005 (0.984)
IGR	0.0758 (0.113)	0.0972** (0.045)	0.2103*** (0.000)	0.2385*** (0.000)
Constant	0.6062*** (0.000)	0.6336*** (0.000)	0.0853 (0.557)	0.2301 (0.143)
Observations	480	480	207	207
Adj. R-squared	0.0813	0.0886	0.1795	0.1951

*Note: P-value in parentheses. Significant levels: *** p < 0.01, ** p < 0.05, * p < 0.1.*

Modigliani-Miller theorem does not apply to our risk measurements here for conventional banks as banks are highly controlled by regulators concerning their capital structure as indicated by their capital adequacy ratios, which affect bank risks. As shown in Table 2, the equity ratio is more statistically significant for conventional banks, the fixed asset ratio and partially the internal growth rate. In contrast, the main determinants of Islamic banks' risks are the available cash level, with negative effects on risk, the bank size, and the internal bank growth rate, and with positive effects on Islamic bank risk measures. Notably, bank size significantly affects bank risk for Islamic banks, but not conventional banks. At the same time, conventional banks are larger than Islamic banks, as noted in Table 2. This might emphasize the risk inherent in Islamic banks' operations relative to their conventional counterparts. The Islamic bank model is more fitted than conventional banks, as indicated by the higher adjusted R-squared.

The difference in risk determinants between conventional and Islamic banks might refer to the difference in business models, as explained earlier, as well as to the risk management tool each banking system employs in mitigating the banking risks. For example, conventional banks suffer a lot when the interest rates go up and down. Some of these banks have a positive or negative gap and would employ different hedging techniques to mitigate interest rate risks. On the other hand, Islamic banks do not deal with interest at all. Hence, their hedging techniques differ substantially from those adopted by conventional banks. Islamic banks mainly employ operational hedging procedures regarding covenants imposed on the financing and the investment contracts they deal with.

The performance effects for both banking systems differ regarding the factors influencing bank performance in each country. For example, the results in Table 3 show that the size variable is the most influential for conventional banks' *ROE* in the UAE and individually in Saudi Arabia. The fixed asset ratio (*FAR*) is the most influential for conventional banks in Qatar. At the same time, the growth rate remains positively statistically significant in affecting the performance of both banking systems in all the GCC countries. Furthermore, there is a noticeable increase in the coefficient values for *ROE*.

New variables that affect the *ROE* in conventional banks have been introduced, such as the cash ratio (*CR*) in Saudi Arabia and the capital adequacy ratio (*CAR*) in Qatar. Additionally, in conventional Saudi banks, the *CAR* effect has shifted from positive statistical significance for *ROA* to a negative effect of statistical significance for *ROE*. The empirical results are consistent with some previous studies, but opposing to others. The results agree with Etab and El-Moslemany (2020) and Rashid (2020) on the statistical significance of capital adequacy for profitability. This is typical of what we have reached in conventional and Islamic banks. In addition, we found the same conclusion in other studies, for example, Aman et al. (2016), who have confirmed a positive significant relationship between profitability and *CAR* when considering all GCC countries together. The importance of the capital structure with *ROA* has been repeated in Olson and Zoubi (2011) and was in line with this paper's findings, in the sense that there is a direct relationship between the two variables and a statistical significance for *ROE*. However, our findings disagree with the type of inverse relationship that exists only in the cases of Saudi Arabia and Qatar (Assous, 2022).

Table 3a. Factors determining the performance (*ROE*) of Islamic banks in the GCC countries

Variables	*Coef.*	*Std. error*	*t-value*	*p-value*	*[95% conf. interval]*		*Sig.*
Panel A: Linear regression — Bahrain							
LA	0.045	0.091	0.49	0.623	-0.138	0.227	
CAR	0.106	0.119	0.89	0.378	-0.133	0.345	
CR	0.297	0.2	1.49	0.143	-0.104	0.698	
Log Assets	-0.002	0.016	-0.11	0.913	-0.033	0.03	
FAR	0.199	1.266	0.16	0.875	-2.344	2.743	
IGR	0.947	0.069	13.82	0	0.809	1.085	***
Constant	-0.035	0.343	-0.10	0.92	-0.725	0.655	
Mean dependent var		0.026		SD dependent var		0.137	
R-squared		0.839		Number of observations		56.000	
F-test		42.649		Prob > F		0.000	
Akaike crit. (AIC)		-153.126		Bayesian crit. (BIC)		-138.948	
Panel B: Linear regression — Saudi Arabia							
LA	-0.179	0.171	-1.05	0.308	-0.537	0.179	
CAR	-0.439	0.277	-1.59	0.129	-1.018	0.14	
CR	-0.392	0.396	-0.99	0.334	-1.221	0.436	
Log Assets	0.027	0.011	2.45	0.024	0.004	0.051	**
FAR	0.857	1.683	0.51	0.616	-2.665	4.379	
IGR	0.785	0.086	9.17	0	0.606	0.964	***
Constant	-0.358	0.359	-1.00	0.331	-1.11	0.394	
Mean dependent var		0.149		SD dependent var		0.112	
R-squared		0.885		Number of observations		26.000	
F-test		24.350		Prob > F		0.000	
AIC		-83.258		BIC		-74.451	
Panel C: Linear regression — Kuwait							
LA	-0.074	0.102	-0.73	0.47	-0.28	0.132	
CAR	-0.062	0.183	-0.34	0.736	-0.434	0.309	
CR	0.141	0.091	1.55	0.129	-0.043	0.324	
Log Assets	0.008	0.008	1.00	0.322	-0.008	0.024	
FAR	0	.	.	.	.	.	
IGR	1.318	0.089	14.83	0	1.138	1.498	***
Constant	-0.13	0.244	-0.53	0.598	-0.624	0.365	
Mean dependent var		0.069		SD dependent var		0.121	
R-squared		0.906		Number of observations		43.000	
F-test		71.190		Prob > F		0.000	
AIC		-149.879		BIC		-139.312	
Panel D: Linear regression — Qatar							
LA	0.135	0.12	1.13	0.269	-0.11	0.38	
CAR	0.272	0.172	1.58	0.124	-0.079	0.623	
CR	1.141	0.933	1.22	0.231	-0.768	3.05	
Log Assets	0.003	0.014	0.18	0.86	-0.026	0.031	
FAR	2.182	2.133	1.02	0.315	-2.181	6.545	
IGR	0.33	0.058	5.66	0	0.21	0.449	***
Constant	-0.138	0.354	-0.39	0.699	-0.861	0.585	
Mean dependent var		0.168		SD dependent var		0.078	
R-squared		0.769		Number of observations		36.000	
F-test		16.120		Prob > F		0.000	
AIC		-120.949		BIC		-109.864	
Panel E: Linear regression — UAE							
LA	0.066	0.062	1.05	0.299	-0.06	0.192	
CAR	0.082	0.115	0.71	0.479	-0.151	0.316	
CR	0.229	0.177	1.29	0.204	-0.129	0.586	
Log Assets	0.015	0.009	1.62	0.113	-0.004	0.033	
FAR	0.264	0.385	0.69	0.496	-0.513	1.042	
IGR	0.814	0.08	10.24	0	0.653	0.975	***
Constant	-0.381	0.199	-1.92	0.062	-0.782	0.021	*
Mean dependent var		0.101		SD dependent var		0.074	
R-squared		0.778		Number of observations		46.000	
F-test		22.753		Prob > F		0.000	
AIC		-165.796		BIC		-152.995	

*Note: *** p < 0.01, ** p < 0.05, * p < 0.1.*

Table 3b. Factors determining the performance (*ROE*) of conventional banks in the GCC countries (Part 1)

Variables	*Coef.*	*Std. error*	*t-value*	*p-value*	*[95% conf. interval]*		*Sig.*
Panel A: Linear regression — Bahrain							
LA	-0.056	0.063	-0.88	0.382	-0.182	0.07	
CAR	-0.014	0.173	-0.08	0.934	-0.359	0.33	
CR	-0.062	0.095	-0.66	0.511	-0.251	0.126	
Log Assets	-0.007	0.008	-0.91	0.364	-0.024	0.009	
FAR	-0.114	1.324	-0.09	0.931	-2.754	2.525	
IGR	1.128	0.056	20.26	0	1.017	1.239	***
Constant	0.243	0.211	1.15	0.252	-0.177	0.663	
Mean dependent var		0.076		SD dependent var		0.136	
R-squared		0.857		Number of observations		80.000	
F-test		73.112		Prob > F		0.000	
AIC		-234.896		BIC		-218.222	

Table 3b. Factors determining the performance (*ROE*) of conventional banks in the GCC countries (Part 2)

Variables	*Coef.*	*Std. error*	*t-value*	*p-value*	*[95% conf. interval]*		*Sig.*
Panel B: Linear regression — Saudi Arabia							
LA	-0.101	0.062	-1.63	0.106	-0.224	0.022	
CAR	-0.672	0.187	-3.59	0.001	-1.043	-0.301	***
CR	-0.188	0.109	-1.73	0.087	-0.404	0.028	*
Log Assets	0.013	0.007	1.80	0.075	-0.001	0.028	*
FAR	0.32	1.723	0.19	0.853	-3.098	3.737	
IGR	0.702	0.045	15.43	0	0.611	0.792	***
Constant	-0.089	0.186	-0.48	0.635	-0.458	0.281	
Mean dependent var		0.175		SD dependent var		0.082	
R-squared		0.753		Number of observations		108.000	
F-test		51.289		Prob > F		0.000	
AIC		-372.414		BIC		-353.639	
Panel C: Linear regression — Kuwait							
LA	-0.325	1.907	-0.17	0.865	-4.151	3.501	
CAR	14.106	5.273	2.67	0.01	3.531	24.682	**
CR	-0.07	3.265	-0.02	0.983	-6.618	6.478	
Log Assets	-0.034	0.225	-0.15	0.879	-0.485	0.417	
FAR	-45.371	55.661	-0.81	0.419	-157.013	66.27	
IGR	4.945	0.869	5.69	0	3.202	6.688	***
Constant	-0.604	5.139	-0.12	0.907	-10.912	9.704	
Mean dependent var		-0.034		SD dependent var		1.241	
R-squared		0.577		Number of observations		60.000	
F-test		12.032		Prob > F		0.000	
AIC		157.554		BIC		172.215	
Panel D: Linear regression — Qatar							
LA	-0.003	0.074	-0.03	0.973	-0.151	0.146	
CAR	-0.718	0.152	-4.73	0	-1.022	-0.414	***
CR	0.048	0.087	0.56	0.578	-0.125	0.222	
Log Assets	0.004	0.005	0.76	0.453	-0.006	0.013	
FAR	2.927	1.007	2.91	0.005	0.912	4.943	***
IGR	0.342	0.048	7.04	0	0.244	0.439	***
Constant	0.121	0.111	1.08	0.283	-0.102	0.343	
Mean dependent var		0.154		SD dependent var		0.053	
R-squared		0.636		Number of observations		64.000	
F-test		16.587		Prob > F		0.000	
AIC		-245.187		BIC		-230.074	
Panel E: Linear regression — UAE							
LA	0.105	0.038	2.81	0.006	0.031	0.18	***
CAR	0.059	0.08	0.74	0.462	-0.099	0.216	
CR	0.15	0.052	2.90	0.004	0.048	0.252	***
Log Assets	0.008	0.004	2.30	0.023	0.001	0.015	**
FAR	0.289	0.349	0.83	0.408	-0.4	0.978	
IGR	0.563	0.033	17.18	0	0.499	0.628	***
Constant	-0.21	0.101	-2.08	0.039	-0.409	-0.01	**
Mean dependent var		0.140		SD dependent var		0.072	
R-squared		0.665		Number of observations		168.000	
F-test		53.221		Prob > F		0.000	
AIC		-580.212		BIC		-558.345	

*Note: *** p < 0.01, ** p < 0.05, * p < 0.1.*

The superiority of one banking system over the other in terms of bank performance, the risk level of both banking systems, and the mean difference test are applied. The difference in mean value is zero, against the alternative hypothesis that the mean difference is significantly different from zero. Table 4 shows the mean test results, which investigate the performance and risk level of conventional banks in the GCC countries compared to those of Islamic banks. The GCC conventional banks enjoy higher profitability than their Islamic counterparts when considering the *ROA* or *ROE* as a measure of profitability. On the other hand, Islamic banks are riskier than conventional banks in terms of both risk measures employed. This result seems contradictory with the positive return-risk logical relationship.

Table 4. Mean difference test for GCC banks' performance and risk (Part 1)

Variables	*Bank types*		*Number of observations*		*Sig. p-value*
	Conventional	*Islamic*	*Conventional*	*Islamic*	
All GCC					
ROA	0.0201225	0.0163203	521	229	0.0124*
ROE	0.1197004	0.0915296			0.1693*
BRA	0.6173522	0.7394865			0.0000*
LA	0.5778234	0.7011415			0.0000*
Bahrain					
ROA	0.0115179	0.01092	87	62	0.8788*
ROE	0.0796758	0.0248041			0.0170*
BRA	0.4618493	0.683569			0.0000*
LA	0.4237757	0.638662			0.0000*
Saudi Arabia					
ROA	0.0222432	0.021799	117	29	0.9011*
ROE	0.1772155	0.141991			0.1323*
BRA	0.5981502	0.8619301			0.0000*
LA	0.5655554	0.8243381			0.0000*

Table 4. Mean difference test for GCC banks' performance and risk (Part 2)

Variables	*Bank types*		*Number of observations*		*Sig. p-value*
	Conventional	*Islamic*	*Conventional*	*Islamic*	
Kuwait					
ROA	0.0150179	0.0092078	65	48	0.0372*
ROE	-0.0196112	0.0707076			0.5461*
BRA	0.6267399	0.723313			0.0000*
LA	0.5979053	0.686136			0.0000*
Qatar					
ROA	0.0218492	0.0324797	70	40	0.0033*
ROE	0.1528077	0.1699839			0.2273*
BRA	0.6350522	0.7175594			0.0000*
LA	0.6106429	0.6885096			0.0000*
UAE					
ROA	0.0240315	0.0137397	182	50	0.0000*
ROE	0.1388796	0.1022272			0.0018*
BRA	0.6938698	0.7708754			0.0005*
LA	0.6395533	0.7316728			0.0000*

*Note: *** p < 0.01, ** p < 0.05, * p < 0.1.*

The results are very similar if each GCC country is considered alone or combined. These results support those of Etab and El-Moslemany (2020) and Rashwan and Ehab (2016) studies conducted in Egyptian Islamic and traditional banking systems from 2004 to 2010. The results conflict with Hawaldar et al. (2017), who claimed that there is no statistical difference in performance between the two bank types in Bahrain. Only in Qatar do we find that Islamic banks statistically significantly outperform conventional counterparts based on *ROA*. However, Islamic banks still have a higher risk in Qatar than conventional banks, just like the rest of the GCC banks.

5. CONCLUSION

Because all institutions have to bear some of the inevitable risks of obtaining returns from different projects, research on this topic remains important. This study, in particular, is valuable as it contributes to ongoing reform in the GCC banking sector that struggles to generate better returns. Despite the influence of Islamic banks in GCC countries, limited research explores the differences between the two bank types per country. However, the proportion of Islamic banks' assets to the banking sector's total assets in this pool and many common economic agreements and cooperation endow them with a similar and homogeneous nature. In this study, a comparison is made between Islamic banks and conventional banks in the GCC based on their risk-taking and their performance, which is measured by profitability variables. The results suggest that conventional banks are less risk-taking entities, and risk-taking was an insignificant variable in determining bank performance. However, it is only significant for banks in Saudi Arabia and the UAE. This significance is not found in the case of Islamic banks except for banks in the UAE, where it also emerged as an influential component of conventional banks' performance as measured through *ROE*. Banking practices in the UAE are more consistent with international standards in applying generally acceptable accounting ratios and adhering to financial theories, as reflected in this study's statistically significant relationships between returns and independent variables. On the other hand, the rest of the banks in other GCC countries show no significant association between risk-taking and bank performance.

This might be due to some GCC governments' interference concerning controlling the interest rate level. Another important result of this study is the role that internal growth plays in influencing the profitability and risk-taking of all banks in the GCC countries and capital adequacy in most cases. Our variables used in the research answer the questions of investors and clients concerned with banks' financial strength as measured by *CAR* and the quality of the assets, which is a source of revenue generation and predictability from *LA* or *FAR*. The paper also investigates the efficiency of management, which appears in the quality of returns measured through *ROA* and *ROE*. All banks in GCC countries accepted the *H2* except for Qatar. This might be due to the efforts by Qatari regulators to make Qatar the Capital of Islamic Finance. At the same time, we could not prove a real difference between the returns of Islamic and conventional banks in Saudi Arabia. The failure to ratify some standards for Islamic banking by global authorities compels Islamic banks to adopt the ratios and standards used in conventional banks, as this is the solution available to carry out their transactions, especially with the scarce record of Islamic banks with recent financial innovations. In addition, there appears to be a weakness in risk management and a lack of specialists in Islamic finance, which were the causes of the decline in the returns of Islamic banks one year after the global crisis in 2008. This is in addition to Islamic banks bearing more risks than conventional banks due to the unique characteristics of their assets and transactions and, simultaneously, the lack of hedging instruments available to them compared to conventional banks. Finally, concerning the Gulf market, in particular, the inefficiency of some markets and the monopoly that exists in others represent a challenge to our study.

One of the most important policy implications related to this study's results is that Islamic GCC banks can employ cash ratio (*CR*) for their benefit since it is the only variable that, if increased, would decrease the banking risk without affecting the return. Conventional GCC banks, on the other hand, may reduce their banking risk and increase their return by increasing their capital adequacy ratio. More research is needed in this area, as banks play a vital role in the economies of the GCC countries and the position that Islamic banks occupy in these countries in the Islamic banking sector worldwide. Future research can include Omani banks, if their information is available, and study new variables that may affect banking risk. One can also re-examine the study hypotheses over critical

periods (for instance, 2019–2021) or more recent periods in different Middle East and North Africa (MENA) regions or foreign countries and compare these results with banks in the GCC region. This paper is limited by using data for Islamic banks only across GCC, which asks future research to include other forms of Islamic Financial Institutions such as Takaful. Future research may consider Islamic banks outside the GCC's context, such as in other MENA regions and Malaysia. This study is limited by time frame until 2015, which ignores the effect of the COVID-19 crisis and asks future research to investigate the impact of the crisis as a global financial crisis and COVID-19 as a moderator variable on this association. Future research should consider the impact of macroeconomic factors on this association, such as gross domestic product, inflation, and culture.

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