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## Profitability and Stability of GCC Islamic Banks: The Role of Corporate Governance

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### Abstract

The purpose of this paper is to examine the impact of corporate governance on profitability and stability of the Gulf Cooperation Council (GCC) banking sector using panel data for Islamic banks over the period from 2003 to 2018. We estimate equations employing the pooled ordinary least square (OLS), the panel generalized least square (GLS) random effect (RE), the two-step system generalized method of moments (GMM), and the robust estimation approach to control for heterogeneity, endogeneity and outliers in the data. We find clear evidence that bank corporate governance matters in explaining the financial performance of Islamic GCC banks. We find a positive association between Shari'ah board and bank profitability and stability. We also find that board size loads positively on Z-score and negatively on bank profitability. The evidence also shows that CEO power has a negative impact on profitability and stability. However, board independence and shareholders independence do not exhibit a significant effect on both bank profitability and stability. These findings have implications for the authorities to establish several regulations related to Islamic finance in order to enhance the performance and soundness of Islamic banking industry as well as the stability of the whole financial system in the GCC region.

**Keywords:** Banking Stability, GCC, Governance, Islamic Bank, Performance

**JEL Classification Code:** G20, G21, G32

### 1. Introduction

The recent global financial crisis may be attributable to excessive risk-taking and serious shortcomings in governance mechanisms in the banking sector. Given the main role played by banks in the economy financing, the governance and regulation of banks are vitally important

(Levine, 2004). For these reasons, regulators worldwide have made necessary amendments in their respective codes to strength bank governance. For instance, in July 2015, the Basel Committee on Banking Supervision (BCBS) updated principles for enhancing bank governance in order to increase monitoring efficiency and to guarantee a sound banking system. Further, in September 2015, the OECD Corporate Governance Committee updated the G20/OECD Principles of Corporate Governance. Furthermore, most central banks and financial market regulators in the GCC countries issued corporate governance codes and guidelines for all financial services sector firms and listed companies.

The corporate governance of conventional banks has been studied extensively (e.g., Andres & Vallelado, 2008; John et al., 2016; Chen & Lin, 2016; Anginer et al., 2018; Ali et al., 2020; Harkin et al., 2020; Habtoor, 2020; Majeed et al., 2020; Tran et al., 2020). However, relatively little research has examined Islamic banks (e.g., Mollah & Zaman, 2015; Mollah et al. 2017; Farag et al., 2018; Safiullah & Shamsuddin, 2018), even though the mechanisms of internal control in conventional banks may be applied to Islamic banks (Shibani & Fuentes, 2017). The literature often distinguishes between Islamic and conventional banks into characteristics

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of their business models and moral foundations (e.g., Ćihak & Hesse, 2010; Beck et al. 2013; khediri et al., 2015; Bitar et al., 2017; Qayyum & Noreen, 2019; Maswadeh, 2020).

This paper contributes to the existing literature in several ways. First, we test the effect of each component of corporate governance mechanisms (Shari'ah board, board of directors) on performance and soundness separately. Second, we carry out our analysis in five GCC countries, a concentrated ownership environment (Ashraf et al., 2016). Moreover, the GCC banks operate under similar political and economic conditions, making the analysis more homogenous. The GCC region is also dominated by large Islamic banks and characterized by a substantial development of financial sector, including the Islamic banking industry, compared to other regions. The ratio of assets of Islamic banking to total assets of domestic banking sector is 69% in Saudi Arabia, 48% in Kuwait, 26% in Qatar, 20% in the UAE, and 15% in Bahrain as of 2019 (IFSI, 2020). According to the Islamic Finance Country Index Report (2019), the total assets of Islamic banks reached a total value of USD2.59 trillion as of 2019, and the average annual growth rate is 12.6% between 2012 and 2019. The GCC countries have the largest share (48.36%) of the global Islamic banking assets as of 2019 (IFSB, 2020). Third, this study covers a long period (2003–2018) that allows us to test the impact of the global financial crisis. Lastly, we use different techniques to estimate equations including pooled ordinary least square (OLS), robust estimation technique, panel generalized least square (GLS) random effect (RE) technique, and the generalized method of moments (GMM) approach.

The rest of the article is structured as follows: Section 2 presents the review of existing literature. Section 3 presents the methodology and data. Section 4 presents and discusses the results. Finally, section 5 concludes the article.

## 2. Literature Review

Jensen and Meckling (1976) explain the relation between principal and agent based on conflicts of interest and agency costs. Managers are risk-averse given their undiversified human capital (Saunders et al., 1990). Hence, they face a challenge to maintain the balance between making riskier decisions enhancing shareholders' value and protecting their self-interests (Ali et al., 2020). The fundamental role of corporate governance is to mitigate this agency problem by aligning the interests of shareholders and managers. There are two mechanisms of governance for this purpose. Motivate mechanisms linked to the compensation and constraint mechanisms based on the boards of directors. Adams and Mehran (2012) argue that financial performance may be positively associated with board considering the advising and monitoring role played by independent directors (Hermalin & Weisbach, 2003), and negatively

linked to independence due to outside directors' lack of relevant bank-specific knowledge as well as coordination and decision-making problems of larger board (Dalton et al., 1999). Strong board can potentially result in more risk-taking, as shareholders hold a put option (Merton, 1977).

More risk-prone bank's shareholders, bank regulation aiming to protect the interest of risk-averse depositors, and higher informational asymmetries due to the complexity of the banking activities make bank governance different from that of nonfinancial firms (Andres & Vallelado, 2008; John et al., 2016). Some papers have studied the issue of governance, performance and risk in the banking sector. For instance, Anginer et al. (2018) find that risk-taking is higher in large banks with shareholder-friendly corporate governance. Erkens et al. (2012) and Pathan and Faff (2013) provide evidence of negative impact of independent directors on performance. Anginer et al. (2018) find a positive impact of board independence on bank risk-taking. Pathan (2009) and Chen and Ling (2016) find that bank risk-taking is positively linked to strong boards (small size with more independent directors) which reflect the interests of shareholders. In contrast, it is negatively related to CEO power. Moreover, a higher degree of shareholders' independence makes the bank management-controlled, leading to lower risk-taking. In addition, separation of the roles of Chairman and CEO leads to more bank risk without significant effect on bank return (Harkin et al., 2020).

The prohibition of interest, excessive uncertainty, excessive gambling, financing for illicit sectors, and the ethical underpinning and the Shari'ah supervision boards make Islamic banks different from conventional banks (Mollah & Zaman 2015). Indeed, asymmetric information and costly monitoring in business model of Islamic banking lead to more agency problems. According to Safieddine (2009), the role and responsibilities of Shari'ah supervision boards typically include advising the boards of directors and insuring the Shari'ah compliance of assets and liabilities of banks. Thus, the governance of Islamic banks means that their services and business model are Shari'ah compliant.

With respect to empirical studies, Mollah and Zaman (2015) show that Shari'ah boards loads positively on bank performance. Farag et al. (2018) find that performance is positively associated with both the size of Shari'ah boards and board of directors, and negatively related to CEO power. However, board independence is found to be insignificant. Mollah et al. (2017) provide evidence that governance structure in Islamic banks leads to higher risk-taking and better performance given specificities of their services and transaction mechanisms. In a recent study, Safiullah and Shamsuddin (2018) provide evidence that the size of Shari'ah supervision boards decreases operational and insolvency risks in Islamic banks. Overall, prior empirical studies yield mixed results (See Ballester et al. (2020) for a comprehensive review).

### 3. Methodology

#### 3.1. Sample

We select Islamic banks from five GCC countries (Bahrain, Kuwait, Qatar, Saudi Arabia, and the United Arab Emirates). Our sample covers the period 2003–2018, including the crisis period (2007–2009). Our sample consists of an unbalanced panel of 351 bank-year observations for 24 fully-fledged Islamic banks. We use data from different sources: BankScope database; World Bank; and banks' annual reports. We use unconsolidated data in order not to double count subsidiaries of international banks.

#### 3.2. Measures of Dependent Variables

We measure bank performance by both return on asset (ROA) and return on equity (ROE). ROA is the rate of return for both bank's shareholders and debt-holders. ROE is our second measure of bank performance in terms of shareholders' equity. We measure bank stability by Z-score ( $Z$ ) as follows:

$$Z = (\text{ROA} + \text{ETA}) / \sigma \quad (1)$$

Where ETA is the equity to total assets ratio, and  $\sigma$  is the standard deviation of ROA as a proxy for return volatility. As in Čihák and Hesse (2010) and Beck et al. (2013), we use the standard deviation over the whole period since it is better suited for an unbalanced panel than the 3 or 5-year rolling average of the standard deviation. Z-score is viewed as the reverse of the bank default probability. Thus, a higher Z-score indicates that the bank is more stable. In this study we use the natural logarithm of Z-score because the simple Z-score is heavily skewed.

#### 3.3. Measures of Explanatory Variables

Following prior studies (e.g., Mollah & Zaman, 2015; and Chen & Ling, 2016), we consider Shari'ah board, board structure and CEO power as factors that affect Islamic bank's governance structure. We include natural logarithm of Shari'ah board size (ShB) as the proxy for Shari'ah supervision. As regard board structure, we include natural logarithm of board size (BS) and board independence (BInd). CEO power is a dummy variable equal to one when the CEO and the board chair is the same person (CEO). Ownership structure is assessed by shareholder independence (BvD) as measured by BvD independence indicators.

Additionally, as control variables, we include the natural logarithm of total assets as a measure of bank size (Size); equity to total assets (ETA) to measure the bank capitalization; and net loan to total assets (LTA) as an indicator of liquidity risk. We also include country

related variables such as real GDP per capita growth rate (GDPG), inflation rate (Inf) and country's institutional and governance quality, measured by the average of six governance indicators provided by the World Bank (See Kaufmann et al. (2011) for an overview of the methodology used to construct these indicators).

#### 3.4. Empirical Model

In order to test the relationship between governance and performance of Islamic banks, we use the following econometric model:

$$Y_{ijt} = \alpha_o + \beta_i X_{ijt} + \theta_j Z_{jt} + \sum \gamma_t \text{Year dummies}_t + \sum \delta_j \text{Country dummies}_j + \varepsilon_{ijt} \quad (2)$$

Where  $Y_{ijt}$  is the dependent variable (ROA, ROE, or Z-score) for bank  $i$  in country  $j$  at time  $t$ ;  $X_{ijt}$  are the bank-specific variables for bank  $i$  in country  $j$  at time  $t$ ;  $Z_{jt}$  are country-specific variables for country  $j$  at time  $t$ ; Year dummies are introduced to control for time fixed effects; and country dummies are country fixed effects. Further,  $\alpha_o$  is a constant, and  $\beta_i$ ,  $\theta_j$ ,  $\gamma_t$  and  $\delta_j$  are coefficients, while  $\varepsilon_{ijt}$  is an error term. The  $t$ -statistics are based on White (1980) heteroskedasticity adjusted robust standard errors clustered at the country level (Petersen, 2009). Another specification of equation (2) including crisis variable is estimated.

In this study, we estimate equation employing pooled OLS and panel random effect (RE) technique. To identify which empirical methodology is most suitable, we test the null hypothesis of zero unobservable individual effect by performing the LM test (Breusch & Pagan, 1980) of the RE model. The rejection of the null hypothesis indicates that pooling regression is not suitable in this case. Further, we also use the two-step system GMM (Arellano & Bover, 1995; Blundell & Bond, 1998). To test the dynamic panel model, we use Hansen's test for instrument validity and Arellano and Bond's (1991) test for serially uncorrelated error terms. To further control for the outliers, we use a robust estimation approach (see Hamilton (2002) and Street et al. (1988) for a detailed description of this technique).

## 4. Results

### 4.1. Summary Statistics and Correlation Matrix

Table 1 provides descriptive statistics for the whole period spanning from 2003 to 2018. We find that the mean ROA is 2.81 (with a standard deviation of 4.98), ROE is 10.58 (with a standard deviation of 4.98), and log Z-score is 2.41 (with a standard deviation of 0.83). The values of ROA are higher than those reported by Beck et al. (2013), Mollah

**Table 1:** Descriptive Statistics

Variables	Full Period (2003–2018)							Pre	During	Post
	Mean	Std. Dev.	Q <sub>1</sub>	Median	Q <sub>3</sub>	Skew.	Kurtosis	Mean	Mean	Mean
ROA (%)	2.817	4.980	0.701	1.739	3.378	1.700	7.723	4.876	3.312	1.526
ROE (%)	10.58	15.47	3.645	11.35	18.75	-1.095	6.472	19.491	10.682	6.218
Z	2.412	0.835	1.923	2.402	2.922	-0.382	4.612	2.599	2.469	2.287
BS	2.159	0.217	1.945	2.197	2.302	-0.225	3.602	2.120	2.159	2.177
ShB	1.477	0.315	1.098	1.609	1.609	-0.443	2.450	1.540	1.478	1.445
Blnd	0.259	0.256	0.000	0.300	0.500	0.263	1.555	0.202	0.278	0.277
CEO	0.375	0.485	0.000	0.000	1.000	0.513	1.263	0.357	0.423	0.356
BvD	1.856	1.028	1.000	2.000	2.000	1.150	3.176	1.857	1.846	1.862
Size	15.27	1.959	14.31	15.54	16.45	-0.838	4.587	14.692	15.164	15.612
LTA (%)	53.83	22.06	45.88	58.19	65.83	-0.640	3.383	53.227	51.300	55.638
ETA (%)	26.45	23.34	12.30	17.67	28.26	2.097	6.624	29.192	29.806	23.136
GDPG	0.036	4.800	-1.882	0.311	3.312	-1.008	4.277	0.795	-3.186	1.597
Inf (%)	4.117	5.650	1.961	3.082	5.343	0.030	5.491	4.721	5.005	3.294
Inst	0.137	0.377	-0.238	0.139	0.496	-0.012	1.678	0.121	0.162	0.131

and Zaman (2015) and Mollah et al. (2017) who document a mean ROA of 1.87, 1.24, and 1.5, respectively. The value of ROE is also higher than that reported by Mollah and Zaman (2015) who document an average ROE of 8.63. However, the value of Z-score is quite similar to that reported by Mollah et al. (2017) who document a mean log Z-score of 2.48, but lower than those of Beck et al. (2013) and Mollah and Zaman (2015) who report an average log Z-score of 3.29, and 2.8, respectively.

The mean number of members on board is 8.66, the mean number of members on Shari'ah board is 4.38, and the proportion of independent directors is 25.9%. These values are similar to those of Mollah and Zaman (2015) who find a mean of 9.08, 4.17 and 26.7%, respectively. CEO-Chair duality (CEO) is 37.5% (with a standard deviation of 48.5%). This value is higher than that of Mollah and Zaman (2015) who document an average percentage of 10.9. Three-quarters of banks have value equal to 2 or less, indicating that shareholders of most of them have a low degree of independence and thus banks are shareholder-controlled.

The means (standard deviation) for control variables are as follows: log total assets is 15.27 (1.96); Net loans to total assets ratio is 53.83% (22.07%); equity to total assets ratio is 26.45% (23.34%), GDP growth is 3.6% (4.8%); inflation is 4.11% (5.65%), and institution indicator is 0.13 (0.37).

Table 1 also reports summary statistics for the three sub-periods (pre-crisis, during crisis, and post-crisis). Descriptive statistics over sub-periods indicate that ROA and ROE has decreased over time. ROA (ROE) ranges from 4.87%

(19.49%) for the pre-crisis period to 1.52% (6.22%) for the post-crisis period. The mean ROA (ROE) of 3.31% (10.68%) in the crisis period demonstrates the sharp drop in profitability during the financial turmoil and beyond. At the same time, bank stability as measured by Z-score has also slightly decreased. It varies between 2.28 for the post-crisis period and 2.599 for the pre-crisis period.

Table 2 reports the mean of governance variable for more and less profitable banks as well as more and less stable banks (value higher than the median of the full sample and value lower than the median of the full sample), and the *p*-value for the *t*-test of differences in means as well as a Wilcoxon test. This later is a non-parametric test used when the variables are not normally distributed. The univariate analysis shows that ROA or ROE is slightly higher for banks having larger Shari'ah board and larger board of directors and lower degree of shareholder independence. Results also show that more stable banks tend to have slightly larger board, lower degree of independence, and lower CEO power. However, results indicate no significant differences between the profitability and stability of two groups in terms of the board independence. Moreover, more stable banks do not present significant difference of size of Shari'ah board compared to less sound banks.

The Pearson correlation coefficients are reported in Table 3. ROA is significantly and positively correlated with Shari'ah board size. ROE is shown to be significantly and negatively correlated with CEO power. Z-score has a significant and negative correlation with both board

**Table 2:** Univariate Analysis

Variables	Mean		P-value	
	ROA < Median	ROA > Median	t-test	Wilcoxon Test
ShB	1.088	1.455	0.081*	0.064
BS	2.133	2.184	0.109	0.099
Blnd	0.282	0.240	0.291	0.292
CEO	0.344	0.406	0.390	0.389
BvD	2.022	1.692	0.030**	0.001***

  

Variables	Mean		P-value	
	ROE < Median	ROE > Median	t-test	Wilcoxon Test
ShB	1.039	1.514	0.109	0.078*
BS	2.118	2.199	0.011**	0.021**
Blnd	0.284	0.238	0.249	0.261
CEO	0.377	0.373	0.954	0.954
BvD	2.066	1.648	0.005***	0.004***

  

Variables	Mean		P-value	
	Z < Median	Z > Median	t-test	Wilcoxon Test
ShB	1.453	1.500	0.322	0.493
BS	2.125	2.192	0.036**	0.083*
Blnd	0.278	0.243	0.384	0.494
CEO	0.600	0.153	0.000***	0.000***
BvD	1.988	1.725	0.084*	0.578

\*\*\*, \*\* and \*denote statistical significance at the 1%, 5%, and 10% levels, respectively.

**Table 3:** Pearson Correlation Matrix

	ROA	ROE	Z	ShB	BS	Blnd	CEO	BvD	Size	LTA	ETA	VIF
ROA	1											
ROE	0.73***	1										
z	0.19***	0.42***	1									
ShB	0.10*	0.04	0.04	1								1.81
BS	-0.02	0.06	0.01	0.23***	1							1.99
Blnd	-0.06	-0.09	-0.18***	0.15**	0.61***	1						2.04
CEO	-0.05	-0.13*	-0.48***	0.01	0.07	0.18***	1					1.86
BvD	0.008	-0.13*	0.03	-0.53***	-0.54***	-0.49***	-0.20***	1				3.04
Size	-0.28***	0.20***	0.25***	0.31***	0.21***	0.06	-0.24***	-0.36***	1			4.03
LTA	0.14**	0.23***	0.23***	-0.25***	-0.22***	-0.32***	-0.41***	0.34***	0.10	1		1.56
ETA	0.49***	0.05	0.04	-0.38***	-0.07	0.03	0.05	0.21	-0.76	0.01	1	2.98

\*\*\*, \*\* and \*denote statistical significance at the 1%, 5%, and 10% levels, respectively.

independence and CEO power. As expected, our dependent variables ROA, ROE and Z-score are positively correlated with each other. Results indicate that the coefficients of correlation between the remaining explanatory variables are not high. We further calculate the variance inflation factor (VIF) for all independent variables in order to assess the problem of multicollinearity. All computed VIF range from 1.56 to 4.03. They are below the rule of thumb threshold of 10 (Kutner et al., 2005), rejecting hence the potential problem of multicollinearity.

## 4.2. Regression Results

### 4.2.1. Baseline Results

In this section, we first present results for the whole sample. We next split our sample into groups to test whether our findings are the same over different period and different bank size (large and small banks). Table 4 depicts the results using GLS models. We do not report results using OLS models since they are in line with GLS ones, for brevity's sake.

The adjusted *R*-squared ranges from 53.48% to 60.62% and the Wald chi<sup>2</sup>- statistics are significant, suggesting a good fit of models. The estimated coefficients for Shari'ah board size are positive, though statistically significant only for ROA model, thereby suggesting that Shari'ah board improves bank profitability. The estimated coefficient for the board size is statistically highly significant and negative in the ROA regression, indicating that large board negatively loads on profitability. However, the board size is statistically insignificant in the ROE regression. The positive (negative) and significant coefficient on Shari'ah board (board size) is consistent with recent evidence reported by Mollah and Zaman (2015). The coefficient estimate on board independence is negative but statistically insignificant in all regression, suggesting no impact of independent directors on both performance and stability. In the Z-score regression, the coefficients for the board size and Shari'ah board are positive and statistically significant, suggesting that larger board of directors and larger Shari'ah board improve bank stability. The coefficient estimate on CEO is statistically significant and negative across all bank performance and stability measures, indicating that CEO power loads negatively on performance and stability. With respect to ownership structure, shareholders independence, as measured by BvD independence indicator, does not exhibit a significant effect on profitability and stability. Overall, our results are quite consistent with previous research regarding bank performance and stability (e.g., Mollah & Zaman, 2015, Farag et al., 2018).

In terms of control variables, the coefficients on bank-specific variables are statistically significant and positive and in both ROA and ROE regressions. This indicates that the performance of banks increases with increasing bank size, increasing amount of lending, and increasing equity. Furthermore, regarding the Z-score regression, only the coefficient on bank capital is statistically significant, implying that more capitalized banks are sounder.

Regarding the additional country-level control variables, the coefficient on inflation is statistically significant and negative, implying that higher inflation levels reduce bank performance and soundness. The coefficient on GDP growth is statistically significant only in the Z-score regression. This suggests that higher economic growth improves bank stability. The coefficient on institutional variable is statistically significant at least at 10% in all regressions, implying that banks in countries with better institutional and governance quality system are more profitable and sounder. This finding corroborates the result of John et al. (2008) who conclude that improvements in investor protection may induce less risky-behavior. Finally, the coefficient estimate on crisis dummy variable is negative and statistically significant in both ROA and ROE regressions, indicating that the recent global financial crisis affects negatively bank performance. However, it is statistically insignificant in Z-score regression. Taken together, the main results portrayed in Table 4 support the argument that the corporate governance of banks matters in explaining the profitability and stability of Islamic banks in GCC countries.

### 4.2.2. Small vs. Large Banks

Our prior results may be different for Islamic banks of different size. Small Islamic banks may differ considerably from the large Islamic banks. For instance, small banks might be more affected by the higher cost inefficiency as the compliance costs might involve scale economies (Beck et al., 2013). Moreover, Čihák and Hesse (2010) find that small (large) Islamic banks are more (less) stable than conventional peers. Beck et al. (2013) argue that smaller Islamic banks are more vulnerable than larger ones due to the absence of risk diversification tools. To account for differences in size, we split the sample of banks into two groups based on bank size, as measured by total assets. Specifically, we split the sample into banks above the median and banks below the median. We then estimate separate regressions for each group (small banks and large banks). Regression analysis for sub-samples is reported in Table 4. The adjusted *R*-squared of these regressions ranges from 62.07% to 85.60% and the Wald chi<sup>2</sup>-statistics are significant, suggesting a good fit of all models. It appears that some of our earlier findings hold for only one of the two groups of bank size.

**Table 4:** Regression Results

	All Banks			Small Banks			Large Banks		
	ROA	ROE	Z-score	ROA	ROE	Z-score	ROA	ROE	Z-score
BS	-1.533*** (0.312)	4.820 (5.408)	1.190** (0.576)	1.589 (1.676)	-19.40*** (7.713)	-0.727 (1.177)	-0.123 (1.142)	3.275 (4.449)	2.606*** (0.889)
ShB	3.047*** (1.156)	5.349 (7.816)	0.047* (0.025)	2.753*** (0.424)	-0.348 (5.010)	-0.021 (0.301)	2.309*** (0.340)	12.104*** (2.633)	0.197 (0.142)
Blnd	-0.567 (2.904)	-2.608 (8.717)	-0.223 (1.086)	-8.660* (5.417)	-23.48*** (8.714)	0.926* (0.666)	2.384*** (0.664)	14.415*** (2.663)	-1.095*** (1.015)
CEO	-0.666** (0.310)	-6.039*** (1.523)	-1.080*** (0.263)	-2.106** (1.111)	-9.188*** (3.243)	-0.956*** (0.286)	-1.570*** (0.113)	-8.481*** (1.127)	-1.773 (0.141)
BvD	-0.310 (1.254)	-1.261 (2.943)	0.103 (0.429)	-2.202 (1.941)	-4.902 (3.837)	0.302 (0.267)	0.521 (0.486)	2.066 (1.814)	-0.106 (0.441)
Size	0.931** (0.454)	4.975*** (1.073)	0.120 (0.126)	1.555** (0.724)	4.763 (2.764)	0.474*** (0.167)	0.993*** (0.163)	5.773*** (0.591)	-0.155*** (0.130)
LTA	0.058*** (0.016)	0.164*** (0.039)	-0.006 (0.007)	0.081*** (0.028)	0.171** (0.079)	-0.006* (0.004)	0.034*** (0.010)	0.161*** (0.019)	0.035 (0.010)
ETA	0.142*** (0.019)	0.302*** (0.051)	0.015*** (0.002)	0.165*** (0.016)	0.260*** (0.094)	0.025*** (0.003)	0.049*** (0.014)	0.0681*** (0.022)	0.038*** (0.011)
GDPG	-0.026 (0.056)	-0.005 (0.285)	0.016* (0.011)	-0.021 (0.108)	0.198 (0.325)	0.041 (0.033)	0.046 (0.039)	-0.101 (0.130)	0.013 (0.008)
Inf	-0.115*** (0.048)	-0.387** (0.171)	-0.011** (0.005)	-0.090 (0.220)	-0.632 (0.615)	-0.037 (0.032)	-0.010** (0.005)	-0.057 (0.065)	-0.007 (0.010)
Inst	3.968* (2.685)	1.901 (6.788)	0.685*** (0.180)	9.924*** (4.091)	20.612* (14.03)	1.280* (0.853)	-2.751*** (0.577)	-8.282* (4.423)	-0.190** (0.082)
Crisis	-6.045** (2.856)	-7.393** (3.557)	0.166 (0.105)	9.747 (1.121)	-13.203* (7.907)	0.306 (0.662)	2.807*** (0.571)	-2.341 (3.159)	-0.031 (0.329)
Cons	-20.23*** (6.774)	-105.18*** (18.410)	-2.138 (2.876)	-29.884** (11.921)	-96.74** (44.24)	-4.140 (4.574)	-24.77*** (0.352)	-138.04*** (5.503)	-3.417 (4.430)
Year dum.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country dum.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Wald $\chi^2$	18.30***	6.52***	39.08***	19.30***	4.58***	20.82***	65.60***	1161.32***	2257.06***
Overall $R^2$	0.5348	0.5767	0.6062	0.6207	0.6024	0.7711	0.8560	0.8334	0.6566

Robust standard errors in parentheses are clustered at the country level. \*\*\*, \*\* and \* denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Shari'ah board continues to load positively on financial performance, regardless of bank size. However, the coefficient is no longer significant in *Z*-score regression for both sub-samples, suggesting that bank stability is not associated with Shari'ah board. For small banks, board size is negatively related to performance as measured by ROE, but it has no significant effect on ROA and *Z*-score. Inversely, for large banks, board size positively impacts the bank stability, but not performance. The findings related to board independence for small and large banks are quite contradictory. It is negatively related to performance and positively linked to stability in small banks. Inversely, it is positively related to performance and negatively associated with stability in large banks. With regards to the impact of CEO power on bank performance, we find same evidence for small and large banks. CEO duality loads negatively on profitability. Regarding the *z*-score regression, the CEO duality has a significant and negative impact on bank stability for small banks, while it is statistically insignificant for large banks. With respect to ownership structure, the coefficient estimates on BvD independence are statistically insignificant in all regressions for both small and large banks, suggesting that shareholders independence does not impact on bank performance and bank stability.

#### 4.2.3. Normal vs. Crisis Period

The above specifications account for the impact of the global financial crisis. However, they do not allow the effect of corporate governance to differ during crisis and normal periods. To take these issues into account, we split the period into three sub-periods to distinguish the crisis period (2007–2009) from the pre-crisis (2003–2006) and post-crisis (2010–2018) and, then, estimate separate regressions for each sub-period.

Table 5 reports results for sub-periods. With respect to bank performance, the coefficient estimates on board size are negative over the pre-crisis period and during crisis, but positive over the post-crisis period. Shari'ah board loads positively on bank profitability and stability, notably in the post crisis-period. The coefficient on board independence is insignificant for all periods in both ROA and ROE regressions. The coefficient estimates on the CEO variable are negative and statistically significant for the post-crisis period, while not statistically significant during the crisis period and the pre-crisis period. The coefficient estimates on BvD independence are negative for the pre-crisis period, but it is positive for the crisis period only in the ROE regression. Results also indicate that bank performance increases with increased bank size, equity, and loans, regardless of the time period.

With respect to bank stability, we find significant and positive effect of board size on stability only over

the pre-crisis period. The coefficient on Shari'ah board is significant and positive only in the post crisis-period. However, it is insignificant for both the pre-crisis period and the crisis period. The coefficient on board independence is significant and positive for the pre-crisis period, but insignificant for the pre-crisis period and during the crisis period. The coefficient on the CEO variable is significant and negative for both pre-crisis and post-crisis periods. However, it is insignificant for the crisis period. The coefficient on BvD independence is statistically insignificant for all sub-periods.

#### 4.2.4. Robustness Checks

For robustness purposes, we employ identical specifications and re-estimate regressions using both the two-step system GMM approach and the robust estimation technique (iteratively re-weighted least squares for outliers). The model fit and diagnostics in Table 6 show the desirable significant AR(1) and insignificant AR(2). In addition, the Hansen *J*-statistics of over-identifying restrictions tests is insignificant, suggesting that the instruments are valid in our models. The outcomes of these two approaches as reported in Table 6 confirm the results displayed in Table 4. Overall, results show that, after controlling for unobserved heterogeneity, simultaneity and dynamic endogeneity as well as outliers, Shari'ah board, board size, and CEO power are related to the performance and stability of Islamic banks in the GCC region.

## 5. Conclusion

This paper examines the relationship between corporate governance and profitability and soundness of Islamic banks in GCC countries between 2003 and 2018. In particular, we focus on the effect of Shari'ah board, board structure (board size and board independence), CEO power, and shareholders independence on the performance and stability of Islamic banks. We find that corporate governance matter in explaining the performance and stability in the Islamic banking sector in GCC. In particular, we find a positive association between Shari'ah board and bank profitability and stability. We also find that board size is positively associated with *Z*-score and negatively linked to bank performance. The evidence also shows that CEO power negatively loads on bank profitability and stability. Nevertheless, there is no evidence suggesting that the board independence and shareholders independence improve bank performance and soundness. Overall, the results of our study support our hypothesis suggesting that corporate governance is an important determinant of Islamic bank performance and soundness in GCC countries. The findings of our research can be an important source of knowledge for financial policy makers and regulators that help to improve performance and



**Table 5:** Regression Results for Sub-Periods (Pre-, during and Post-Crisis)

	ROA			ROE			Z-score		
	Pre	During	Post	Pre	During	Post	Pre	During	Post
BS	-7.366*** (2.576)	-4.486*** (0.865)	1.503* (1.169)	-22.269*** (5.839)	-9.894 (9.355)	19.815*** (8.315)	1.107*** (0.211)	0.818 (0.819)	0.880 (1.221)
ShB	2.398* (1.792)	-1.100 (2.850)	4.079** (1.844)	-8.693 (11.332)	1.947 (8.026)	10.819*** (3.028)	-0.820 (1.052)	-0.204 (0.519)	0.401* (0.253)
Blnd	4.537 (3.740)	-0.861 (2.734)	-1.079 (2.569)	4.335 (3.846)	1.275 (9.437)	5.159 (6.224)	1.225 (0.784)	0.822 (1.127)	0.847*** (0.313)
CEO	8.494 (5.941)	-0.273 (1.568)	-2.999* (1.602)	9.999 (9.158)	-3.836 (7.769)	-9.183* (5.295)	-0.516*** (0.174)	0.242 (0.914)	-1.39*** (0.408)
BvD	-1.712*** (0.645)	-0.419 (1.625)	1.531 (1.616)	-5.568* (3.492)	4.921* (3.125)	2.632 (6.233)	-0.135 (0.330)	0.183 (0.499)	0.114 (0.431)
Size	-0.010 (0.372)	1.270*** (0.344)	0.976 (0.899)	4.147** (2.075)	7.557*** (1.450)	5.000* (3.835)	0.062*** (0.023)	0.282* (0.169)	0.328* (0.192)
LTA	0.156*** (0.036)	0.023*** (0.007)	0.055 (0.053)	0.317*** (0.082)	0.058* (0.032)	-0.011 (0.231)	-0.023*** (0.008)	-0.000 (0.003)	0.0003 (0.007)
ETA	0.214*** (0.012)	0.074*** (0.008)	0.161*** (0.046)	0.256*** (0.055)	0.121** (0.063)	0.683*** (0.210)	0.002 (0.002)	0.025*** (0.002)	0.035*** (0.005)
GDPG	0.214** (0.101)	-0.098 (0.376)	-0.137 (0.161)	0.492*** (0.116)	1.990 (2.739)	-0.586 (0.535)	0.0005 (0.001)	0.072 (0.070)	-0.006 (0.014)
Inf	0.020 (0.162)	-0.173* (0.117)	-0.189*** (0.075)	0.167 (0.458)	-0.378 (0.371)	-0.798*** (0.162)	-0.060*** (0.006)	-0.011* (0.007)	-0.018** (0.009)
Inst	-0.376 (4.288)	6.086 (9.382)	-6.646* (3.680)	-4.183 (25.145)	3.940 (22.792)	-23.07*** (8.794)	1.518*** (0.490)	-0.543 (0.548)	-0.010 (0.299)
Cons	12.809 (14.550)	-10.145 (9.516)	-11.45 (9.16)	-6.566 (73.429)	-118.8*** (32.984)	-9.66 (74.29)	4.298* (2.617)	-5.090 (5.111)	-7.021** (3.072)
Year dum.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country dum.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Wald $\chi^2$	955.51***	55.13***	16.87***	115.69***	76.42***	129.90***	86.96***	13.99***	180.49***
Overall $R^2$	0.910	0.624	0.701	0.870	0.641	0.631	0.830	0.490	0.727

Robust standard errors in parentheses are clustered at the country level. \*\*\*, \*\* and \*denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 6: Further Evidence

	GMM Model			Robust Regression		
	ROA	ROE	Z-score	ROA	ROE	Z-score
L.1	0.444*** (0.009)	0.706*** (0.110)	0.379*** (0.077)			
BS	-1.030** (0.607)	-3.348 (14.605)	0.799** (0.312)	-0.741* (0.431)	-0.390 (3.513)	1.998*** (0.305)
ShB	9.137*** (3.095)	14.885 (11.482)	0.375** (0.182)	2.253*** (0.453)	8.524*** (2.179)	0.523* (0.281)
Blnd	-7.632 (5.820)	13.557 (20.845)	0.404 (0.455)	1.310* (0.672)	0.915 (3.225)	-0.097 (0.281)
CEO	-1.759* (1.008)	-2.530** (1.417)	-0.053 (0.252)	-0.966*** (0.330)	-2.276 (1.589)	-0.902*** (0.138)
BvD	-2.957 (2.218)	3.942 (7.222)	0.467 (0.329)	0.508** (0.215)	0.843 (1.036)	0.005 (0.090)
Size	1.657** (0.812)	8.611*** (3.094)	0.214*** (0.058)	0.878*** (0.141)	4.954*** (0.679)	0.001 (0.059)
LTA	0.092*** (0.034)	0.150*** (0.136)	0.006** (0.003)	0.024*** (0.005)	0.116*** (0.026)	0.005** (0.002)
ETA	0.223*** (0.059)	0.493*** (0.215)	0.038*** (0.004)	0.069*** (0.007)	0.113*** (0.035)	0.020*** (0.003)
GDPG	-0.035 (0.119)	-0.203 (0.439)	-0.0002 (0.009)	0.031 (0.029)	-0.025 (0.143)	-0.0002 (0.025)
Inf	0.067 (0.070)	0.382 (0.262)	0.002 (0.005)	-0.014 (0.021)	0.047 (0.102)	-0.011 (0.008)
Inst	-0.417 (3.590)	8.678 (14.399)	-0.741 (0.290)	-0.331 (0.931)	1.190 (4.476)	0.726 (0.389)
Crisis	-2.566** (1.012)	-12.481*** (3.883)	-0.077 (0.081)	0.166 (0.627)	-6.857** (3.016)	0.097 (0.262)
cons	-38.05*** (20.494)	-184.8*** (74.689)	-2.808 (1.278)	-17.90*** (2.946)	-84.60*** (14.15)	-6.206*** (1.232)
Year dum.	Yes	Yes	Yes	Yes	Yes	Yes
Country dum.	Yes	Yes	Yes	Yes	Yes	Yes
Wald $\chi^2/F$	150.84***	100.99***	334.01***	17.10***	15.60***	16.11***
AR(1) P-value	0.008	0.009	0.011			
AR(2) P-value	0.635	0.576	0.606			
Hansen-J P-value	0.852	0.913	0.941			

Standard errors are in parentheses. \*\*\*, \*\* and \* denote statistical significance at the 1%, 5%, and 10% levels, respectively.

soundness of the Islamic banking sector in GCC countries. For instance, the independent directors do not seem to improve bank board effectiveness. Hence, regulators should carefully reconsider some of the requirements of being an independent director in order to enhance the competition of qualified and independent directors.

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