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Determinants of Banks Profitability: An Evidence from GCC Countries

Abstract: The research objective of the study is to investigate the determinants of profitability of banks' operating in GCC (Gulf Cooperation Council) countries. The existing studies highlight the banks' internal attributes and external factors that significantly influence profitability. The unbalanced panel data of 59 banks from the Bank scope database operating in six countries of GCC is used. Profitability is measured as return on assets (ROA) and return on equity (ROE) that have been used as dependent variables. Pooled OLS, fixed and random effects estimations are employed to explore the effect of explanatory variables internal factors, i.e. bank size, capital adequacy, asset quality, deposits ratio, asset management, operating efficiency and financial risk, and external factors, namely macroeconomic variables, GDP growth rate and inflation rate on dependent variables. Bank size and GDP growth have a significant and positive association with ROA. While Bank size and asset management have significant and positive impact, capital adequacy, financial risk, operating efficiency, and asset quality have a negative and significant impact on ROE. Fixed effects results are used for interpretation based on the Hausman test.

Keywords: Banks, profitability, macroeconomic, GCC, return on assets, return on equity.

JEL Classification: G 21; D02; E 50.

1. Introduction

Financial sector growth and development are crucial for the economic progress of an individual economy and regional economic blocks. Financial intermediaries' role is evident in the allocation of capital to the productive sector by pooling the savings in the economy, and banks are one of these intermediaries that act as depository institutions. Banks collect deposits, give loans and earn profit from interest spread. The role of banks as the financial intermediary has increased in the era of globalization to finance production and trade activities. The availability of enough capital with banks and its supply to various economic players increases economic activities. This has resulted in an increase in banks' efficiency that contributes to their growth and success. And in most economies, the banks' role in channeling funds is larger than that of the capital markets. A sound and efficient banking system is the prerequisite for financial stability. Therefore, several studies explored various factors, such as profitability, efficiency, performance, and so forth of banks to find out the financial status of the banking industry. Profitability is assumed to help banks to absorb risks and contribute to stability. Despite this, the financial sector has shown its fragility and contributed to several financial crises, including the most recent one that originated in the USA during 2007-2008. Hence, financial stability and a strong banking system are very important for the growing / emerging economies with great demand and appetite present for capital and banks have to keep the balance between capital demand and financial stability. It is assumed that profitable banks are partly contributing to a sound banking system, which is a prerequisite for financial stability.

The GCC is an important regional block for world economies. Most of the world's energy demand is dependent on this region. The region consists of oil-producing rich economies, such as Saudi Arabia, United Arab Emirates (UAE), Qatar, Bahrain, Kuwait, and Oman. According to the (IMF, 2018) report, the financial system of GCC is large and dominated by banks. The banking industry is highly concentrated and is dominated by domestically owned banks (Al-Hassan, Oulidi, & Khamis, 2010). Even though these economies rely heavily on revenues from the oil industry, they have transformed their focus to diversify their economic activities by increasing investment in the non-oil industry. The region has diversified economies with different worth and sizes of the economy. As per the IMF report, the UAE has the largest banking sector, Saudi Arabia is the largest regional economy, and Bahrain ranks first in terms of banking system depth among the GCC countries.

Based on the economic importance of the GCC region for the world's economy as a large exporter of crude oil, all economies heavily rely on trade. Therefore, an

efficient and sound banking system is very important for these countries. Therefore, investigation about the safety and soundness of the banking system in the GCC region is of significant importance to regulators and policymakers around the globe. Hence, the objective of this study is to explore the factors that affect the banks' probability of operating in the GCC economies. The study is unique because it explores the internal and external factors of profitability of banks functioning in all six GCC regional economies using the data of the period 2011-2017. It is assumed that the study could facilitate policymakers to articulate an effective role of banks for the economic growth of the regional economies, particularly when the countries are focusing on diversification of the economic sectors. This economic diversification is taking place under a certain country-specific plan, such as vision 2030 of Saudi Arabia, Oman's vision 2040, and so forth.

The rest of the article is structured as below, with the relevant literature review presented in section 2, data, variables description, and research methods adopted by the study are explained in section 3, section 4 present and discusses the findings of the study, followed by the conclusion in section 5.

2. Literature review

Banks are an important component of an economic system and the existing literature has explored the various aspects of banks to find out the status of the banking industry. Studies have been conducted to explore the determinants of capital structure (Gropp & Heider, 2010; Khan, Bashir & Islam, 2020), determinants of banks' operational efficiency (Lotto, 2019), credit risk management practices in banks (Caprio & Klingebiel, 1996), lower cost of borrowings (Bernauer & Koubi, 2002), the impact of market structure on banks profitability (Arif & Awwaliyah, 2019) and determinants of bank profitability (Sufian & Habibullah, 2009; Al-Homaidi, Tabash, Farhan & Almaqtari. 2018), the impact of capital structure on the bank performance (Khan, 2022).

As financial intermediaries, banks collect capital and use it to earn profit that they share with suppliers of capital, by managing the risk and liquidity. Hence, profitability is an important factor for banks to keep a balance between suppliers and demanders of capital. Existing studies use dependent variables, return on assets (ROA) and return on equity (ROE) as proxies of profitability (Garcia & Guerreiro 2016). According to Al-Harbi (2019), the existing studies classify the factors as internal and external attributes of profitability. The internal factors consist of the bank's internal determinants such as capital adequacy, asset quality (nature of loan), deposits, operational efficiency, asset management, and so forth. Ad-

ditionally, as per (Karadžić & Đalović, 2021) "Profitability, being a key aspect of business efficiency, is especially important when observed in the context of banks because they, as financial intermediaries, play a very important role in the economic system." While external factors are macroeconomic factors such as GDP growth rate, inflation rate, interest rate, and regulatory framework (Al-Harbi, 2019; Al-Homaidi et al., 2018). Adapting from the existing literature, this study explores the effects of internal factors as explanatory variables i.e. bank size, capital adequacy ratio, asset quality, deposits, asset management, operational efficiency and external macroeconomic factors, GDP growth rate, and inflation rate.

2.1. Bank size

The firm size proxy is measured by taking the natural logarithm of total assets as used by several studies on financial and non-financial firms (Sheikh, Wang & Khan, 2013; Bougatef, 2017; Al-Homaidi et al., 2018; Khan et al., 2020; Bashir, Khan, Jones & Hussain, 2020). According to Bashir et al., (2020), the larger size of a bank ensures access to various sources of external financing. Moreover, larger banks are assumed to perform better than medium and small banks, under the assumption of economies of scale. Theoretically, the loans issued by banks are their main assets and the issuance of more loans depends on the availability of capital, and deposits are assumed to be the cheapest source of capital for banks. Hence, the bigger the size of the bank means the bank is accessible to more depositors which increases the available capital base at a bank. Empirically, following studies have found a significant effect of bank size on its profitability, Gul, Irshad & Zaman (2011), Lee & Isa (2017); Ahamed, (2017); Al-Homaidi et al. (2018); Yao, Haris & Tariq (2018). On the other hand, the study by Sufian & Habibullah, (2009) reported a significant negative and significant and positive relationship with ROE and ROA, respectively. The study by Growe, DeBruine, Lee & Maldonado (2014) reported a positive association between last year's bank size and ROA, while the current year's bank size has no association with ROA. Contrary to this, Al-Harbi (2019) found no relationship between bank size and profitability of the banks operating in the Organization of Islamic Cooperation (OIC). Karadžić & Đalović, (2021) also reported bank size as a significant factor for banks profitability in big European banks.

2.2. Capital Adequacy

Capital adequacy refers to a capital ratio that presents the availability of capital. It is also a part of banks' regulation that ensures the banks' safety and prevents it

from going bankrupt. Capital adequacy is implemented in almost all the countries under the BASEL accords by the BIS (Bank for International Settlements). Its ultimate objective is to prevent the *bank run*. There are various measures to calculate capital ratios. The ratio of total equity to total assets is one of the primary ratios to measure the bank's capital strength or solvency (Growe et al., 2014). Like other factors, capital adequacy showed mixed results with profitability. For instance, Anbar & Alper (2011) reported no relationship between capital adequacy and profitability in Turkish banks. In contrast, Sayilgan & Yildirim, (2009) reported a positive association between capital adequacy and ROA The study by Berger (1995) found a positive association between capital adequacy and ROE in the case of the US during the mid- to late 1980s. It further suggests that higher capital adequacy ratio results in higher profitability. The empirical relationship between profitability and capital adequacy is inconclusive. Ebenezer, Omar & Kamil`s (2017) study on Nigerian banks and Al-Harbi`s (2019) study on OIC countries reported a positive and significant association. However, Saona`s (2016) study on Latin American banks reported a negative and significant relationship between capital adequacy and profitability.

2.3. Asset Quality

Bank loans are the assets of a bank. The quality of loans will contribute to the bank's earnings and its credit risk. Hence, the assets and related factors are important components of a bank's business stability (Žunić, Kozarić & Dželihodžić, 2021). Therefore, this measure helps to explore the nature of a bank's loan portfolio. Several studies have used the loans to total assets ratio as a proxy of a bank's asset quality (Anbar & Alper, 2011; Growe et al., 2014; Al-Homaidi et al., 2018; Al-Harbi, 2019). Like other internal attributes, empirical studies reported mixed findings on the impact of asset quality on a bank's profitability. The study by Anbar & Alper, (2011) on Turkish banks reported asset quality is negatively related to ROA and ROE. The study on OIC countries by Al-Harbi (2019) found a weak and negative effect of asset quality on profitability, while the study on US banks by Growe et al. (2014) reported a negative and significant association between asset quality and profitability. Contrary to this, Al-Homaidi et al. (2018) reported a positive relationship between asset quality and profitability in Indian commercial banks.

2.4. Deposits

Deposits are the main source of capital for banks. Customers' deposits are considered liabilities for banks. Except for time deposits, most of the deposits are non-

classified liabilities where depositor can withdraw their money anytime from the bank without prior notice. Bank uses these deposits to finance loans, hence, it is assumed that deposits can increase profitability as long as there is a demand for loans. Several empirical studies use the total deposits to total assets ratio as one of the determinants of bank profitability and also consider it as a liquidity indicator (Anbar & Alper, 2011; Gul et al., 2011; Al-Homaidi et al., 2018), and liquidity is an important factor for banks (Vučinić, 2020). Existing studies stated mixed findings on the impact of deposit to total asset ratios on banks' profitability. The study on Turkish banks by Anbar & Alper, (2011) found no effect of deposit to total assets ratio on banks' profitability. Likewise, the study by Al-Homaidi et al. (2018) on Indian commercial banks reported no association between deposit ratio and ROA and ROE, while Al-Harbi (2019) reported that deposit interest expense could lower the profitability of the banks. On the other hand, Shah & Khan (2017) and Gul et al. (2011) have reported a significant and positive relationship between deposit ratio and profitability in Pakistani banks.

2.5. Asset management

Asset management refers to asset utilization. The primary objective of a profit-oriented entity is to use assets for revenue generation. In the case of banks, assets management refers to the capability of asset managers to generate revenue. A higher asset management ratio is beneficial for banks and asset management is used as the ratio of operating income to total assets (. Masood & Ashraf, 2012; Al-Homaidi et al. 2018). Masood & Ashraf also reported a positive and significant association between asset management and the profitability of Islamic banks. Likewise, Al-Homaidi et al. found a positive and significant relationship between assets management and the profitability of Indian commercial banks.

2.6. Operating efficiency

Operating efficiency refers to efficient management. The lower operating efficiency depicts efficient bank management. Principally, operational efficiency refers to the ratio of expenses required for a business to revenue generated by the business. In the case of a bank, studies use the ratio of operating expenses to interest income (Petria, Capraru & Ihnatov 2015; Rashid & Jabeen, 2016; Al-Homaidi et al. 2018). Al-Homaidi et al. reported an adverse and significant association between operational efficiency and ROE in Indian commercial banks. Likewise, Rashid & Jabeen found a negative and significant association between operational efficiency and financial performance of Islamic banks operating in Pakistan. Contrary

to this, Petria et al. reported operational efficiency as one of the important factors for banks' profitability in the EU.

2.7. Financial risk

According to Abbas and Younas (2021), theoretically, the capital of the bank and risk have both positive and negative associations. Financial/capital risk is measured as the ratio of total debt to total assets (Masood & Ashraf, 2012; Shah & Khan, 2017; Al-Homaidi et al., 2018). This ratio is also known as the debt to asset ratio, which refers to the proportion of assets financed by debt. Theoretically, a lower ratio means higher use of equity. In such a case, ROA will be higher and ROE will be lower. Higher the ratio shows that most assets are financed with leverage, which could result in financial distress. The study by Al-Homaidi et al. (2018) found a negative and significant relationship with the profitability of Indian commercial banks. Likewise, Shah & Khan (2017) reported a positive and significant association between financial risk and profitability of Pakistani banks. On the contrary, Masood & Ashraf (2012) reported a positive and significant relationship with profitability measures, i.e. ROE and ROA in the case of Islamic banks.

It is expected that macroeconomic activities have an impact on banks' performance. Therefore, to explore the effects of macroeconomic indicators on banks' profitability several studies use annual GDP growth rate and inflation rate (Demirgüç-Kunt & Huizinga, 1999; Masood & Ashraf, 2012; Al-Homaidi et al., 2018). The annual GDP growth rate highlights the overall economic activities in the economy, and the inflation rate predicts the increasing demand for services and goods in the economy. Hence, it is assumed that these variables affect the supply and demand of capital by affecting the loans and deposits in banks.

3. Data, variables, and research design

3.1. Data

The study uses GCC countries, Saudi Arabia, UAE, Qatar, Bahrain, Kuwait, and Oman banks' data to investigate the factors that affect their profitability. The annual data of banks' specific variables is taken from the Bank Scope database. The final data of the GCC countries is an unbalanced data of 59 banks from the period of 2011-2017. It results in a total of 404 bank year's observations. The data of macroeconomic variables have been taken from the World Bank database.

3.2. Variables

The study used variables and their computation from the present literature, for significant evaluation of the existing studies. By following the studies of Masood & Ashraf, (2012); Petria et al. (2015), and Al-Homaidi et al. (2018), Return on Assets (ROA) and Return on Equity (ROE) are used as proxies of bank profitability and as dependent variables. The internal attributes of the bank, i.e. bank size, capital adequacy, assets quality, deposits ratio, assets management, operational efficiency, financial risk, and the external attributes i.e. macroeconomic variables annual GDP growth, and inflation rate are used as explanatory. The variables' description is given in Table 1.

3.3. Research design

The final data set is unbalanced panel data, which includes bank data over time. Hence, panel data estimations were employed to find the effects of independent variables on dependent variables. It includes pooled *OLS* (ordinary least squares), random effects, and fixed effects. Pooled OLS is suitable for the simpler case, i.e. for no time specific and bank effects. The fixed effects estimation for all the banks and period allows the intercept for the individual banks to vary but restricts the slope parameters to be fixed or constant.

Table 1: Description of variables

Variables	Definition
Dependent Variables	
Return on Assets (ROA_{it})	Profit before taxes$_t$ to total assets$_t$
Return on Equity (ROE_{it})	Profit before taxes$_t$ to total equity$_t$
Explanatory variables	
Banks Size (BS_{it})	Natural logarithm of total assets$_t$
Capital Adequacy (CAR_{it})	Total equity$_t$ to total assets$_t$
Asset Quality ($ASQT_{it}$)	Net income$_t$ to total assets$_t$
Deposits ($DEPO_{it}$)	Total deposits$_t$ to total assets$_t$
Asset Management ($AMGT_{it}$)	Operating incomet to total assets$_t$
Operating efficiency ($OPEF_{it}$)	Total operating expensist to total assets$_t$
Financial Risk (FRS_{it})	Total liabilities$_t$ to total assets$_t$
GDP growth ($GDPG_t$)	Annual Gross Domestic Products growth rate
Inflation ($INFL_t$)	Annual inflation rate

Source: Author's compilation based on Masood & Ashraf, (2012); Petria et al. (2015), and Al-Homaidi et al. (2018)

Contrary to this, random effects estimation hypothesizes the deviation to be random and uncorrelated with the dependent variables across banks. To select the appropriate estimation from random or fixed effects, the study uses the Hausman test (1978).

The regression's estimation equation is as follows.

$$y_{it} = \alpha + X_{it}\beta + \mu_{it}$$

The y_{it} denotes the dependent variable in the framework, i is a cross-sectional expression and t denotes the time-series feature. For independent variable K for ith bank during the ith period, vector of observation is 1xK presented by X_{it} in the equation, the y-intercept is denoted by α, while 1xK vector parameters are represented by β, and disturbance term is denoted by μ_{it}. The definition of the disturbance is $\mu_{it} = \mu_i + v_{it}$ where μ_i is indistinct individual effects and the remainder disturbance of the model is v_{it}. The estimations for employed panel data methods are specified as follows, pooled *OLS* (equations 1 and 3), fixed effects (equations 2 and 4), and random effects (equations 3 and 6).

$$ROA_{it} = \beta_0 + \beta_1 BS_{it} + \beta_2 CA_{it} + \beta_3 ASQT_{it} + \beta_4 DEPO_{it} + \beta_5 AMGT_{it} + \beta_6 OPEF_{it} + \beta_7 FRS_{it} + \beta_8 GDPG_t + \beta_9 INFL_t + \varepsilon_{it} \quad (1)$$

$$ROA_{it} = \beta_0 + \beta_1 BS_{it} + \beta_2 CA_{it} + \beta_3 ASQT_{it} + \beta_4 DEPO_{it} + \beta_5 AMGT_{it} + \beta_6 OPEF_{it} + \beta_7 FRS_{it} + \beta_8 GDPG_t + \beta_9 INFL_t + \mu_{it} \quad (2)$$

$$ROA_{it} = \beta_0 + \beta_1 BS_{it} + \beta_2 CA_{it} + \beta_3 ASQT_{it} + \beta_4 DEPO_{it} + \beta_5 AMGT_{it} + \beta_6 OPEF_{it} + \beta_7 FRS_{it} + \beta_8 GDPG_t + \beta_9 INFL_{tt} + \varepsilon_i + \mu_{it} \quad (3)$$

$$ROE_{it} = \beta_0 + \beta_1 BS_{it} + \beta_2 CA_{it} + \beta_3 ASQT_{it} + \beta_4 DEPO_{it} + \beta_5 AMGT_{it} + \beta_6 OPEF_{it} + \beta_7 FRS_{it} + \beta_8 GDPG_t + \beta_9 INFL_t + \varepsilon_{it} \quad (4)$$

$$ROE_{it} = \beta_0 + \beta_1 BS_{it} + \beta_2 CA_{it} + \beta_3 ASQT_{it} + \beta_4 DEPO_{it} + \beta_5 AMGT_{it} + \beta_6 OPEF_{it} + \beta_7 FRS_{it} + \beta_8 GDPG_t + \beta_9 INFL_t + \mu_{it} \quad (5)$$

$$ROE_{it} = \beta_0 + \beta_1 BS_{it} + \beta_2 CA_{it} + \beta_3 ASQT_{it} + \beta_4 DEPO_{it} + \beta_5 AMGT_{it} + \beta_6 OPEF_{it} + \beta_7 FRS_{it} + \beta_8 GDPG_t + \beta_9 INFL_{tt} + \varepsilon_i + \mu_{it} \quad (6)$$

The expected sign, i.e. the predicted nature of the relationship between explanatory and dependent variables based on existing empirical studies is presented in Table 2. Moreover, the actual outcome of the regression results of this study is also summarized in it.

4. Empirical findings and discussion on results

4.1. Descriptive summary

The descriptive summary of the variables is given in Table 3. The mean of profitability proxies for ROA and ROE is 1.4% and 9.9%, respectively. The mean value of ROA and ROE of GCC banks is slightly lower than the Indian commercial banks reported in Al-Homaidi et al. (2018). Moreover, this mean is also lower than the mean value of ROA and ROE of Islamic banks reported by Masood & Ashraf (2012). The mean bank size is 16.67. The mean of capital adequacy a proxy for capital strength has a mean value of 16.73%, representing that on average 16.73% of assets are financed with equity. The mean values of asset quality and deposit ratio are 1.59 and 1.38, respectively. The mean value of asset management, operational efficiency, and financial risk is 1.4%, 19.6%, and 83%, respectively. The mean of financial risk i.e. ratio of total liabilities to total assets shows that on average 83% of assets of GCC banks' are financed with leverage, which is an anticipated value for the banking industry. The summary also shows that the average GDP growth rate of the region during the period 2011-2017 was 3.77% and the inflation rate was 2.48%.

Table 2: Expected signs and the actual result

Variables	Expected results		Actual results	
	ROA_{it}	ROE_{it}	ROA_{it}	ROE_{it}
BS_{it}	±	±	+	+
CAR_{it}	±	±	+	-
$ASQT_{it}$	+	+	+	-
$DEPO_{it}$	+	+	+	+
$AMGT_{it}$	+	+	+	+
$OPEF_{it}$	-	-	+	-
FRS_{it}	±	±	+	-
$GDPG_{t}$	±	±	+	+
$INFL_{t}$	+	+	+	+

Source: Author's compilation based on literature (see. Masood and Ashraf, 2012; Al-Homaidi et al. 2018) and regression analysis.

Table 3. Descriptive summary

Variables	*Obs.*	*Mean*	*Std. Dev.*	*Min*	*Max*
ROA_{it}	404	0.0143	0.0138	-0.0714	0.0553
ROE_{it}	404	0.0995	0.0691	-0.2504	0.2562
BS_{it}	404	16.674	2.0039	10.919	20.513
CAR_{it}	404	0.1673	0.1088	0.0601	0.9926
$ASQT_{it}$	404	1.5904	0.1538	0.0062	0.8265
$DEPO_{it}$	404	1.3839	0.3082	0.0048	1.7865
$AMGT_{it}$	404	0.0144	0.0135	-0.0714	0.0601
$OPEF_{it}$	404	0.196	0.0188	0.0052	0.1190
FRS_{it}	404	0.8300	0.1125	0.0073	0.9398
$GDPG_{t}$	404	3.7725	2.9243	-4.7121	13.375
$INFL_{t}$	404	2.4816	2.0882	-0.8381	12.375

Source: Author's compilation

4.2. Correlation matrix

The pair-wise correlation of the variables is presented in Table 4. The correlation shows that return of equity, bank size, asset management, and financial risk have a positive correlation, while capital adequacy and operational efficiency have a negative and significant correlation with return on assets. Return on assets has a positive and significant correlation with bank size, deposits, asset management, and financial risk.

Table 4: Pairwise correlation

Variables	ROA_{it}	ROE_{it}	BS_{it}	CAR_{it}	$ASQT_{it}$	$DEPO_{it}$	$AMGT_{it}$	$OPEF_{it}$	FRS_{it}	$GDPG_{t}$	$INFL_{t}$
ROA_{it}	1.000										
ROE_{it}	0.834***	1.000									
BS_{it}	0.351***	0.419***	1.000								
CAR_{it}	-0.235***	-0.3071**	-0.332***								
$ASQT_{it}$	0.0281	0.0871**	0.2407***	-0.3710***	1.000						
$DEPO_{it}$	0.0683	0.213^{5}***	0.3525***	-0.6990***	0.5076***	1.000					
$AMGT_{it}$	0.9861***	0.8187***	0.3392***	-0.2130***	-0.0091	0.0402	1.000				
$OPEF_{it}$	-0.186***	-0.306***	-0.440***	0.5548***	-0.4064***	-0.6712***	0.0219**	1.000			
FRS_{it}	0.180***	0.270***	0.344***	-0.984***	0.440***	0.770***	0.150***	-0.609***	1.000		
$GDPG_{t}$	0.0593	0.0813*	0.0346	0.0723	-0.0792	-0.0342	0.0440	-0.0088	-0.0691	1.000	
$INFL_{t}$	-0.0411	-0.0248	-0.130***	0.0046	-0.0220	0.0444	-0.0482	-0.0669	0.0001	0.326****	1.000

Source: Author's compilation, *, **, *** significant at 10%, 5% and 1% level respectively.

The multicollinearity is assumed to be negligible due to lower values of cross-correlation among variables.

4.3. Empirical results

The regression results between dependent and explanatory variables estimated by pooled *OLS*, fixed effects (FE), and random effects (RE) are shown in table 5. As per the Hausman test (1978), the value of (*chi-square 68.80* and *p=0.000*) for ROA and the value of (*chi-square 60.41* and *p=0.000*) the fixed effects results are used for explanation. All explanatory variables show a positive association with profitability proxy ROA. However, the asset management relationship is highly significant and the GDP growth rate has a significant relationship at 10%. In other regression models, several other variables also show a significant association of the explanatory variable with ROA.

The explanatory variables of banks size, deposits, asset management, GDP growth rate, and inflation have a positive association with profitability proxy, i.e. ROE. The association is significant with bank size, asset management, and GDP growth rate. Contrary to this, capital adequacy, asset quality, operating efficiency, and financial risk have a negative and significant relationship with ROE.

4.4. Discussion of results

Table 5: Estimation results

Variables	ROA_{it}			ROE_{it}		
	OLS	*FE*	*RE*	*OLS*	*FE*	*RE*
BS_{it}	-0.0001	0.0006	-0.0001	0.0023	0.0004	0.0008
	[0.0006]**	[0.0004]	[0.00009]	[0.0011]**	[0.0077]*	[0.0019]
CAR_{it}	0.0171	0.0023	0.0212	-0.0459	-0.6911	-0.3216
	[0.0068]***	[0.0111]	[0.0082]***	[0.1259]	[0.1773]***	[0.1442]**
$ASQT_{it}$	0.0015	0.0017	0.0014	-0.0043	-0.0822	-0.0223
	[0.0007]**	[0.0018]	[0.0011]	[0.0145]	[0.0298]***	[0.0208]
$DEPO_{it}$	0.0027	0.0003	-0.0023	0.0176	0.0244	0.0240
	[-0.0006]***	[0.0011]	[0.0008]***	[0.0114]	[0.0183]	[0.1477]*
$AMGT_{it}$	1.0134	1.0544	1.0344	3.933	4.7293	4.3866
	[0.0085]***	[0.0105]***	[0.0092]***	[0.1572]***	[0.1679]***	[0.1537]***
$OPEF_{it}$	-0.0726	0.0087	-0.0624	-0.5599	-0.9294	-0.8941
	[0.0077]***	[0.0143]	[0.0092]***	[0.1419]***	[0.2283]***	[0.1663]***
FRS_{it}	0.0186	0.0008	0.0220	-0.0527	-0.7299	-0.3891
	[0.0073]***	[0.0117]	[0.0088]***	[0.1356]	[0.1866]***	[0.1547]***
$GDPG_{t}$	0.00008	0.00006	0.00006	0.0011	0.0002	0.0005
	[0.00003]**	[0.00003]*	[0.00003]**	[0.0006]*	[0.0005]	[0.0005]
$INFL_{t}$	-0.00003	7.8e-06	-6.31e-06	-0.0002	0.0002	0.0001
	[0.00005]	[0.00004]	[0.00004]	[0.0009]	[0.0007]	[0.0007]
C	-0.0123	0.0108	-0.0164	0.0407	0.7764	0.3943
	[0.0068]*	[0.0128]	[0.0083]**	[0.1265]	[0.2035]***	[0.1459]***
ADJ R^2	0.9798	0.9688	0.9796	0.7184	0.6631	0.7096
PROB(F-STAT)	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hausman test chi-sq		68.80			60.41	
Hausman test prob		0.0000			0.0000	
No. of obs	404	404	404	404	404	404
No. of groups	59	59	59	59	59	59

Source: Author's compilation; *,**,*** refers to significance levels at 10%, 5%, and 1% respectively, coefficient values are given and standard error is given in parenthesis.

The results presented in Table 5 show a positive association of banks' size and profitability, the result is significant only with ROE. This shows that the larger bank could have higher profitability, by accessing more customers to collect more capital for lending. The findings are in line with the findings of Masood & Ashraf, (2012), Growe et al. (2014) Ahamed, (2017); Al-Homaidi et al. (2018), Yao et al. (2018), and Karadžić & Đalović, (2021). The capital adequacy ratio is positive but

insignificantly related to ROA and the finding is in line with the results of Al-Homaidi et al. (2018) study on Indian commercial banks. While it has a negative and significant relationship with ROE, this result is congruent with the findings of Masood & Ashraf (2012) study on Islamic banks. Asset quality i.e. loan quality has a positive association with ROA but is insignificant. While asset quality has a negative and significant impact on ROE, which means bad loans increases the ROE, it might be true that risky loans with higher interest margin may contribute to banks' return on equity, this result is similar to the findings of Anbar & Alper, (2011) and Growe et al. (2014) and contradictory to Masood & Ashraf (2012). The deposits to asset ratio show a positive but insignificant association with both ROA and ROE. These results are in line with the findings of Anbar & Alper, (2011), Masood & Ashraf (2012), and Al-Homaidi et al. (2018).

Asset management is positively related to ROA and ROE and the relationship is significant. It refers to the efficient management by portfolio managers to generate sufficient revenue. These results are in line with the findings of Masood & Ashraf (2012), and Al-Homaidi et al. (2018) and contradictory to the findings of Anbar & Alper, (2011). Operating efficiency has a positive but insignificant relationship with ROA and this finding is similar to the result of Petria et al. (2015). While operating efficiency has a negative and significant association with ROE, this is in line with the findings of Rashid & Jabeen, (2016) study on Islamic banks and Al-Homaidi et al. (2018) study on commercial banks. Financial risk has a positive but insignificant and negative but significant association with ROA and ROE, respectively. The negative relationship is congruent with the findings of Shah & Khan (2017) and Al-Homaidi et al. (2018). External attributes, i.e. macroeconomic variables GDP growth rate and inflation rate are positively related to ROA and ROE. This relationship is insignificant, except for the GDP growth rate with ROA where it is significant. These findings are congruent with the results of Masood & Ashraf (2012), Growe et al. (2014), Petria et al. (2015), and Al-Homaidi et al. (2018).

5. Conclusion

The study uses the bank data of GCC countries, namely Saudi Arabia, UAE, Qatar, Bahrain, Kuwait, and Oman to explore the factors that affect their profitability. The data of 59 banks from the period 2011-2017 the six GCC countries has been used to examine the effects of the explanatory variable on profitability. The findings endorse the results of earlier studies on bank profitability. All the explanatory variables have a positive association with bank profitability, i.e. ROA. However, asset management and GDP growth have a significant impact on ROA.

The efficient management of asset managers to generate sufficient revenue, and overall economic activities are significant factors to increase the ROA of GCC banks from 2011 to 2017.

The explanatory variables banks size, deposits, asset management, GDP growth rate, and inflation have a positive association with profitability proxy, i.e. ROE. The association is significant with bank size, asset management, and GDP growth rate. It further shows that more deposits for large banks can contribute to the capital and improves the ROE. While revenue generation through efficient asset management and expanding economic activities has a significant effect on banks; return on equity. Contrary to this, capital adequacy, asset quality, operational efficiency, and financial risk have a negative and significant relationship with ROE. A higher capital reserve may mitigate the credit risk for a bank, but the bank may have to give up earnings on that reserve capital. Poor asset quality may result in more non-performing loans that would drain out the banks' capital.

The overall findings suggest that banks in the GCC region can improve their profitability by focusing on the factors such as bank size (expanding their business to access more deposits), and improving the performance of their portfolios through efficient management. Keeping more capital reserves to keep a sufficient capital base could result in the opportunity cost of capital in the form of low earnings. Even though banks have to heavily rely on liabilities (deposits), therefore, a careful balance between debt obligations and earnings is desired.

This study contributes to the existing literature by exploring the factors that affect the profitability of banks operating in the GCC region. However, further research on a comparative study with other economic regions is suggested. Moreover, the research could be extended to MENA (the Middle East and North Africa) region by differentiating between emerging and developing economies of the same regional block.

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