DETERMINANTS OF CAPITAL STRUCTURE IN THE FINANCIAL SECTOR: EVIDENCE FROM GCC COUNTRIES

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ABSTRACT

This article aimed at investigating the determinants of capital structure in financial sector companies in six Gulf Cooperation Council (GCC) countries. By using the data of 84 companies from subsectors including banks, insurance, investment banking, and investment holding companies of the financial sector for 20 years from 2001 to 2020, making 1596 firm-year observations, we run panel data regressions for the whole sample, in country and subsector breakdowns. The results revealed that profitability has a negative relationship with leverage, while earnings volatility, tangibility, growth opportunities, and size are positively related to the whole sample. The findings are mixed in country and subsector details. The study has important implications for managers, regulators, policy makers, and academics regarding the determinants of capital structure, as well as the capital structure decisions taken by financial sector managers. To the best of our knowledge, this is the first study analyzing determinants of capital structure in the GCC context and subsector detail of financial companies.

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1. INTRODUCTION

One of the most debated topics in corporate finance is firms' capital structure decisions. The combination of debt and equity on the right-hand side of the balance sheet, whether this combination affects firm value, the search for an optimal level, and the determinants of capital structure decisions attracted great attention. Beginning from Modigliani and Miller's proposition 1 (1958) and 2 (1963), several theoretical explanations have been presented, including trade-off theory, pecking order theory, free cash flow theory, and some others. Most of the capital structure studies focused on non-financial companies and excluded the financial sector. Several arguments have been proposed for this exclusion. First, financial companies, especially banks, are more regulated and they must comply with the regulatory authority capital adequacy requirements set by central banks. Second, the financial sector business model is very different from that of the non-financial or real sector. While the latter is focused on providing goods and/or services, the former is focused on provision of funds and related financial services.

Use of high leverage in non-financial companies is regarded as an increased risk and is an undesired situation, especially from the equity holder perspective. Risk, however, is the core concept for financial sector companies; their business is based on risk-taking. By the nature of business, they operate by a small portion of equity, and they obtain a greater portion of the capital from deposits. Despite those factors, some variations exist in financial company capital structure. This article aimed at investigating the determinants of financial companies' capital structure. Khan et al. (2021) researched the determinants of bank capital structure in a GCC country, Saudi Arabia, and they suggested that future research be conducted covering all GCC countries. Following this suggestion and even adding more, we aimed at exploring the determinants of financial companies'capital structure in six GCC countries.

The article makes significant contributions by making the analyses for a multi-country sample and also by using the data of several subsectors of financial companies; it does not only focus on banks, but also other financial companies including banks, insurance, investment banking, and investment holding companies.

The topic of the article is important in several aspects and its results might have significant practical implications. The financial sector, especially banks, performs very important functions for the economic system and stability of any country; their financial

soundness is critically important for the national economy, and even for the international financial system. Capital structure is one of the most important factors affecting the financial status of those companies. A good understanding of the determinant factors of capital structure may help design and develop appropriate financial management policies, such as deciding on the optimal debt-equity mix in the capital structure.

Gulf Cooperation Council (GCC) countries present a unique institutional framework that affords a compelling opportunity to examine the determinants of capital structure. The economic and social characteristics of these nations are highly analogous. First, the GCC nations rely heavily on hydrocarbon revenues, which comprise more than 70 percent of their respective governments' revenues and total goods exports (World Bank, 2021). Second, corporate taxes in the GCC are markedly lower compared to other countries, and this variance may significantly influence company capital structure (Zeitun et al., 2017). Third, GCC markets do not impose taxes on dividends and capital gains (Al-Ghazali, 2014). This may incentivize financial enterprises to obtain funds from capital markets at lower cost in comparison to other markets.

The rest of the article is organized as follows; the next section provides a review of related literature. The third section provides the details of the sample, data, and methodology. The fourth section presents the results of the analyses and the discussion. The last section concludes.

2. LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

Seminal work of Modigliani and Miller (1958) sets one of the milestones in the theory of capital structure. In their proposition one which has been known as irrelevance theory, they claimed that the capital structure decision does not affect firm value under unrealistic assumptions. Later, in proposition two (1963), they relaxed the assumptions and included taxes in the models and concluded that as firms use debt, they benefit from tax shields, and they should use more debt financing. They ignored the potential risks of debt. The theory which considers the benefits and the risks of debt financing is known as the trade-off theory introduced by Kraus and Litzenberger (1973) and developed further by Myers (1984). Trade-off theory proposes that the firm may use debt till the point at which the tax shield benefits outweigh the bankruptcy costs. The other important theory on capital

structure is the pecking order theory introduced by Myers and Majluf (1984), which claims that there must be a hierarchy of financing sources and that the firms must first use internal resources (retained earnings), then issue debt, and lastly issue new equity. Pecking order theory implies that managers have no specific leverage targets, and they make the decisions based on cost, by not considering future outcomes (Barclay and Smith, 2005). According to the free cash flow theory, higher debt levels may increase the value of a firm despite the risk of financial distress in case operating cash flows significantly exceed profitable investment opportunities (Jensen, 1986). The free cash flow theory models the agency cost between managers and investors, and this is not very different for financial sector companies.

Even though the main principles of the theories mentioned are also applicable to financial institutions, some other theories explain the capital decisions of banks and other financial sector companies. The charter value theory claims that higher profitability and higher cost efficiency motivate the management to keep higher amounts of capital from earnings to protect against liquidation risk (Saunders and Wilson, 2001). The moral hazard theory proposes that banks with lower capital levels tend to construct risky asset portfolios at the expense of deposit holders and by trusting in government bailouts (Jacques and Nigro, 1997; Aggarwal and Jacques, 2001). The capital buffer theory claims that having capital above the minimum legal requirement is important for banks and they tend to maintain or reach a capital buffer because, in case of an increase in regulatory capital level, it might be costly to increase capital in a short period (Stein, 1998).

Yousef (2019) investigated the determinants of capital structure in the real estate sector of the Gulf Cooperation Council (GCC) and the United Kingdom (UK). The findings of his study revealed that firm size had a positive and significant relationship with leverage, while profitability and return on earnings had an adverse effect on leverage. Abdullah and Naser (2015) examined the impact of bank-specific factors on capital structure in the GCC from 2001 to 2010. Their study found that profitability, assets tangibility, and size were negatively correlated with banks' debt.

A more recent study by AL-Hunnayan (2020) on the determinants of capital structure in GCC Islamic banks revealed that firm performance, asset tangibility, and financial market development had a negative impact on leverage. Furthermore, the study revealed that firm size and growth opportunities were positively related to leverage, consistent with the pecking order theory. Khan et al. (2021)

examined the factors affecting capital structure in 12 Islamic banks in Saudi Arabia between 2010 and 2017. Their study found that firm size, earnings volatility, and growth opportunities had a positive impact on leverage. They also detected that bank performance and tangibility were adversely correlated with leverage.

Khaki and Akin (2020) focused on non-financial firms in the GCC and studied the factors affecting their capital structure. Their results revealed that firm size, tangibility, and growth opportunities, such as profitability, liquidity, and government ownership, were positively (negatively) correlated with leverage. Rao et al. (2007) investigated the relationship between leverage and firm performance in non-financial firms in Oman from 1998 to 2002. Their study found that firm performance was negatively and significantly correlated with leverage.

In the US, Jucá et al. (2012) investigated the relationship between capital structure and profitability in the banking industry. Their results demonstrated that profitability and growth opportunities were negatively and significantly related to leverage. Consistent with the trade-off theory, Ripamonti (2020) discovered that there exists a target capital structure in financial corporations across 64 US financial institutions. Dávila and Walther (2020) proposed a theoretical model that demonstrated how bank size is the key determinant of equity-debt choice.Several firm-level or macroeconomic determinants of capital structure decisions exist. Firm-level determinants may include size, asset tangibility, profitability, growth opportunities, and earnings volatility. Macroeconomic determinants may include economic growth, measured by gross domestic product (GDP) growth, and inflation rate.

2.1 PROFITABILITY

The pecking order theory predicts a negative relationship between profitability and leverage, which can be interpreted as firms having higher profitability will have more retained earnings, and according to the hierarchy proposed by the theory, the firms tend to use those funds first and use less debt. Prior literature supported this view for both non-financial firms (Bartoloni, 2013; Booth et al., 2001) and financial firms (Jucá et al., 2012; Gropp and Heider, 2010). On the other hand, the tradeoff theory proposes a positive relationship, based on the assumption that more profitable firms tend to use a higher level of debt financing because they have more funds to pay back financing costs and at the same time, they tend to benefit from debt financing tax

shields (Sheikh and Quereshi, 2017). In line with tradeoff theory, we expect a positive relationship and write the first hypothesis as follows:

H1:   There is a positive relationship between profitability and leverage.

2.2 EARNINGS VOLATILITY

From the tradeoff theory viewpoint, a negative relationship is expected between a firm's earnings volatility and its leverage, because high volatility in earnings affects firm credibility and, in turn, decreases its borrowing capacity. Another important point is related tax shield utilization; in case of unstable earnings, the firm may incur losses in some periods and may be unable to get the debt financing tax advantage (Fama and French, 2002; De Jong et al.,2008). On the other hand, the pecking order theory predicts a positive relationship, based on the reasoning that the firm with high volatility in earnings faces constraints in financing from retained earnings and therefore goes for external financing through debt markets (Frank and Goyal, 2009). We adopt the view of tradeoff theory and expect a negative relationship, hence the second hypothesis can be written as follows:

H2:   There is a negative relationship between earnings volatility and leverage.

2.3 ASSET TANGIBILITY

Proponents of the pecking order theory claim that tangible assets are more visible assets, and there is less information asymmetry and uncertainty about them compared to financial assets or intangible assets. This, in turn, makes the equity issues less costly. Therefore, firms with more tangible assets are inclined to use less debt, implying a negative relationship (Shibru et al. 2015; Ahmad and Abbas, 2011; Sheikh and Wang, 2011; Amidu, 2007; Bradley et al., 1984). Proponents of the tradeoff theory claim that there is a positive relationship between asset tangibility and leverage (Saif-Alyousfi et al., 2020; Tchuigoua, 2014; Gropp and Heider, 2010; Wald, 1999; Rajan and Zingales, 1995). This can be interpreted in several aspects. First, as firms purchase more tangible assets, they need more funds that may not be readily available, and firms tend to use debt. Second, firms with more tangible assets have more convincing collateral for

borrowing funds. We also expect a positive relationship and develop the third hypothesis as follows:

H3:   There is a positive relationship between asset tangibility and leverage.

2.4 GROWTH OPPORTUNITIES

Based on the tradeoff and agency theories, the prior literature reported a negative relationship between growth opportunities and leverage, because firms with high leverage are less likely to implement profitable investment opportunities due to the potential financial distress and agency problems (Frank and Goyal, 2009; Padron et al.,2005; Barclay and Smith, 1999; Myers, 1977). Pecking order theory, however, predicts a positive relationship; firms having more growth opportunities need more cash and after internal funds are used, firms are inclined to use debt financing instead of issuing equity (Al-Najjar and Hussainey, 2011; Al-Hunnayan, 2020). In case of growth opportunities, we adopt the view of the pecking order theory and write the fourth hypothesis as follows:

H4:   There is a positive relationship between growth opportunities and leverage.

2.5 SIZE

The literature reported different results on the direction of the relationship between size and leverage, based on the theory adopted. Proponents of the pecking order theory claim that a negative relationship exists because larger firms are expected to have higher amounts of retained earnings and have less need for external financing. In addition, there is lower information asymmetry in case of larger banks, encouraging equity financing (Yildirim et al., 2018; Al-Mutairi and Naser, 2015; Jucá et al., 2012).

Proponents of the tradeoff theory say that larger firms are expected to have higher credibility with lending institutions and have higher amounts of debt. Also, they may have higher amounts of tax shields based on the higher level of leverage. In case of financial institutions, the credibility or reputation of a bank, for instance, can be considered a similar case. Larger banks are expected to attract higher customer deposits. Therefore, a positive relationship is expected between size and leverage (Al-Hunnayan, 2020; Sheikh and Quereshi, 2017; Lemma and Negash, 2014; Lim, 2012; Antoniou et al., 2008).

In line with tradeoff theory, we expect a positive relationship and develop the fifth hypothesis as follows:

H5:   There is a positive relationship between firm size and leverage.

2.6 GDP GROWTH

In addition to firm-specific determinants, some macroeconomic variables may also affect firms' capital structure decisions (Levy and Hennessy, 2007). The most used indicator to reflect macroeconomic conditions is the GDP growth rate. Trade-off and pecking order theories propose opposing views. Trade-off theory predicts a positive relationship implying that in times of economic expansion, firms are inclined to use more external financing while pecking order theory claims that there should be sufficient funds from internal sources and use of external financing is expected to decline (Saif-Alyousfi et al., 2020; Ahmad and Albaity, 2019). We expect the results to be consistent with the tradeoff theory and the sixth hypothesis can be written as follows:

H6:   There is a positive relationship between GDP growth rate and leverage.

2.7 INFLATION

Even though some empirical studies (Hoque and Pour, 2018; Fan et al., 2012) found no significant relationship between inflation and leverage, by following Guizani and Ajmi (2021) we argue that the impact of inflation on debt-equity choice is based on the inflation-interest rates relationship. Lower interest rates encourage firms to use higher levels of debt and vice versa. In cases of high inflation, central banks raise their policy interest rates, which affect market interest rates. Therefore, high inflation is intervened by higher interest rates and in turn, higher interest rates result in lower leverage, implying a negative relationship. We adopt this viewpoint and develop the seventh hypothesis as follows:

H7:   There is a negative relationship between inflation rate and leverage.

3. METHODOLOGY AND MODELS

3.1 SAMPLE AND DATA

The sample includes 84 firms from different subsectors of the financial industry. The details are presented in Table 1. The data were obtained from the Refinitiv database and cover the 20-year period from 2001 to 2020. In the final dataset, there are 1596 observations, as one year is lost to calculate earnings volatility. The dataset is a balanced panel covering 19-year data of 84 firms.

TABLE 1
Sample Details

Country	TRBC Industry Group Name	No. of firms
Bahrain	Banking Services	5
	Insurance	4
	Investment Banking & Investment Services	2
Kuwait	Banking Services	13
	Insurance	3
	Investment Banking & Investment Services	11
	Investment Holding Companies	1
Oman	Banking Services	9
	Insurance	4
	Investment Banking & Investment Services	3
	Investment Holding Companies	2
Qatar	Banking Services	4
	Insurance	1
Saudi Arabia	Banking Services	7
	Insurance	1
United Arab Emirates (UAE)	Banking Services	11
	Insurance	3
Total		84

3.2 VARIABLES AND MEASUREMENT

Table 2 shows the variables, their calculation formulas, the previous studies referred to and the expected signs of direction in the relationships. We used the ratio of total liabilities to total assets as the proxy for leverage. We used both short- and long-term liabilities, because financial institutions, especially banks, operate by a relatively small proportion of equity, and rely on external sources, this being the nature of the industry.

TABLE 2
Variables

	Variable		Calculation Formula	Selected References	Expected Sign
Dependent	Leverage	LEV	Total Liabilities/Total Assets	Khan et al., 2021; Al-Matari, 2021	n/a
Independent	Profitability	ROA	Net Profit/Total Assets	Sheikh and Quereshi,2017	+
	Earnings Volatility	VOL	(Net Profit$_{t1}$ – Net Profit$_{t-1}$)/ Net Profit$_{t1}$	De Jong et al.,2008	-
	Asset Tangibility	TANG	Tangible non-current Assets/Total Assets	Tchuigoua, 2014; Saif-Alyousfi et al., 2020	+
	Growth Opportunities	GROW	Market price per share/Book value per share	Al-Najjar and Hussainey, 2011	+
	Size	SIZE	Natural Logarithm of Total Assets	Lemma and Negash, 2014; Sheikh and Quereshi,2017; Al-Hunnayan, 2020	+
Control	GDP Growth	GDPGR	YoY Change in GDP	Ahmad and Albaity, 2019; Saif-Alyousfi et al., 2020	+
	Inflation	INFL	Annual rate of inflation	Hoque and Pour, 2018; Guizani and Ajmi, 2021	-
Dummy		COUN IND	Dummies for Country and Industry		n/a

3.3 MODEL AND ESTIMATION TECHNIQUE

The following equation is the model equation used to test the determinants of leverage for the sample firms. Since the data comprised balanced panel data, panel estimation methods were used, namely fixed effects and random-effects models. The fixed-effects model allows the intercept to differ for each firm in the sample; however, it requires the slope parameters to stay constant for cross-sections and periods. On the other hand, the random-effects model is based on a random variation assumption across firms and is not correlated with the dependent variable.

$$LEV_{i,t} = \beta_0 + \beta_1 ROA_{i,t} + \beta_2 VOL_{i,t} + \beta_3 TANG_{i,t} + \beta_4 GROW_{i,t} \\ + \beta_5 SIZE_{i,t} + \beta_6 GDPGR_{i,t} + \beta_7 INFL_{i,t} + \beta_8 COUN_i \\ + \beta_9 IND_i + \varepsilon_{i,t}$$

The model is run for the whole sample, and also according to two categorizations, the first is per subsector and the second is per country.

4. THE RESULTS OF ANALYSES AND DISCUSSION

4.1 DESCRIPTIVE STATISTICS

Table 3 reports descriptive statistics of the variables. Mean is reported for the whole sample as overall value, standard deviation, minimum, and maximum are reported in three categories overall, between, and within for the panel data. Overall values show the variation across firms and over time. Within values show the change for a specific firm over time, while between values show the change among all the firms.

TABLE 3
Descriptive Statistics of All Variables

Variable		Mean	Std. Dev.	Min	Max
LEV	overall	0.683	0.235	0.020	1.550
	between		0.212	0.206	0.899
	within		0.103	0.236	1.608
ROA	overall	0.023	0.072	-0.680	0.370
	between		0.022	-0.062	0.063
	within		0.068	-0.626	0.451

TABLE 3 *(continued)*

Variable		Mean	Std. Dev.	Min	Max
VOL	overall	0.000	0.243	-8.580	2.710
	between		0.055	-0.445	0.152
	within		0.237	-8.135	2.559
TANG	overall	0.038	0.118	-0.020	0.960
	between		0.107	0.000	0.917
	within		0.052	-0.231	0.709
GROW	overall	1.461	1.623	-3.260	31.230
	between		0.718	0.468	4.336
	within		1.458	-3.085	28.979
SIZE	overall	21.326	2.234	16.140	26.360
	between		2.154	16.929	24.863
	within		0.638	18.876	22.823
GDPGR	overall	3.533	5.150	-8.690	26.170
	between		1.365	2.708	8.666
	within		4.968	-8.693	21.037
INFR	overall	4.218	11.805	-25.960	33.750
	between		0.671	3.521	5.381
	within		11.786	-26.293	32.587

The overall mean value of the leverage variable is 68.3%, which is a reasonable level for the financial sector. The leverage level could be even higher for only banks; however since the sample also includes other subsectors, it takes this value. The minimum leverage is 2%, which belongs to an investment holding company. The maximum leverage is 155 %. It exceeds 100% due to accumulated losses. Return on assets has a mean value of 2.3 % with a minimum of negative 68% and a maximum of 37%. The lowest return on assets values belongs to the firms with higher accumulative losses and higher leverage values. The volatility of profits has a mean of zero with 0.243 standard deviation implying a variation among firms. The proportion of tangible fixed assets to total assets is 3.8%. The variable indicating growth opportunities has a mean value of 1.461, implying that the financial sector firms are valued positively by the market.

Table 4 reports the correlations among variables. Size, growth opportunities, profit volatility, and GDP growth rate have positive correlations with leverage, while asset tangibility, profitability, and inflation have negative correlations.

TABLE 4
Correlation Matrix

	LEV	SIZE	TANG	ROA	GROW	VOL	GDPGR	INFR
LEV	1							
SIZE	0.745***	1						
TANG	-0.044*	-0.118***	1					
ROA	-0.190***	-0.075**	-0.017	1				
GROW	0.198***	0.195***	-0.074**	0.111***	1			
VOL	0.002	0.014	0.003	0.271***	0.014	1		
GDPGR	0.008	-0.009	-0.012	0.206***	0.212***	0.025	1	
INFR	-0.020	-0.086***	0.007	0.107***	0.205***	0.001	0.347***	1

***, **, *: Significance at 1%, 5%, and 10%, respectively.

4.2 PANEL REGRESSION RESULTS

This section reports the results of panel data regressions at different breakdowns, for the whole sample, per subsector, and per country.

Table 5 reports the regression results for the whole sample according to the fixed effects model, the random-effects model, and pooled OLS model. The results reveal that fixed effects, random effects and pooled OLS have overall model significance and have high R^2 values; no difference exists in the directions of the relationships for all variables. The Hausman test suggests fixed effects regression.

The results show that profitability has a negative effect on leverage, indicating that the large profitability in banks raises the availability of internal resources to finance projects hence reducing the need for debt financing. This is consistent with the findings of Amidu (2007), Shibru et al. (2015), Sheikh and Qureshi (2017), Al-Harby (2019), Toumi (2020), and Khan et al. (2021). The results are opposed to the tradeoff theory, however, which suggests that as banks become more profitable, they can attract more funds from depositors, resulting in higher levels of leverage.

In all models, the estimated coefficient of earning volatility (VOL) exhibited a statistically significant and positive relationship at the 5% significance level. This noteworthy finding suggests that higher earnings volatility tends to prompt banks to rely less on internal financing and instead gravitate toward external debt. This outcome challenges our hypothesis, which is grounded in the trade-off theory. It is plausible that the expectation of the trade-off theory may hold for non-financial firms, but when it comes to financial sector companies, especially banks, this theory may be inapplicable given their unique business model. Specifically, banks collect deposits from customers, leading to an increase in their leverage levels, which is supported by prior studies (e.g., Khan et al., 2021; Sheikh and Qureshi, 2017; Teixeira et al., 2014; Gropp and Heider, 2010).

Our findings indicate a significantly positive correlation between asset tangibility and leverage, which confirms our hypothesis and aligns with the tradeoff theory. While prior research has yielded contradictory outcomes, suggesting that tangible assets may not function as collateral for non-financial firms in the same way they do for banks, our results support the notion that asset tangibility plays a pivotal role in shaping capital structure decisions. Notably, our findings imply that an increased presence of tangible assets within banks can bolster their collateral reserves in the event of bankruptcy,

thus reducing the financial distress costs, which is consistent with Gropp and Heider (2010) and Ghosh (2018).

Results of our analysis have unveiled a significantly positive association between growth opportunities and leverage, validating both our hypothesis and the pecking order theory, while contradicting the tradeoff theory. Our findings suggest that financing future investments to leverage growth opportunities necessitates additional capital, which resonates with prior research by Bukair (2019).

The numbers in parentheses are standard errors, p values are shown by the asterisks.

Our findings indicate a significantly positive relationship between size and leverage, aligning with both our hypothesis and the tradeoff theory while challenging the pecking order theory. This outcome suggests that large banks in the Gulf Cooperation Council (GCC) are better positioned to secure financing with ease, owing to their relatively low default and financial distress costs, a notion supported by earlier studies (e.g., Khan et al., 2021; Al-Hunnayan, 2020; Sheikh and Quereshi, 2017; Lemma and Negash, 2014).

Regarding macroeconomic variables, we found insignificantly positive results for both of them. It can be interpreted that those variables do not affect the capital structure decisions of the sample firms.

TABLE 5
Panel and Pooled Regression Results for the Whole Sample

	Fixed Effects		Random Effects		Pooled OLS	
ROA	-0.5331	(0.0935)***	-0.5439	(0.0918)***	-0.5232	(0.0568)***
VOL	0.0184	(0.0094)**	0.0197	(0.0096)**	0.0326	(0.0163)**
TANG	0.3863	(0.1769)***	0.2991	(0.1372)**	0.0874	(0.0324)**
GROW	0.0093	(0.0025)***	0.0095	(0.0024)***	0.0093	(0.0025)***
SIZE	0.0562	(0.0103)***	0.0581	(0.0091)***	0.0766	(0.0018)***
GDPGR	0.0012	-0.0009	0.0013	(0.0009)*	0.0009	(0.0008)
INFR	0.0003	-0.0002	0.0003	(0.0002)*	0.0008	(0.0004)**
Constant	-0.5374	(0.2237)***	-0.5439	-0.0918	-0.9615	(0.0378)***
R^2	53%		74%		58%	
Model Significance	18.29 (0.000)***		791.96 (0.000)***		317.21 (0.000)***	
Hausman	19.36 (0.0071)					
Observations	1596		1596		1596	
Groups	84		84			

***, **, *: Significance at 1%, 5%, and 10%, respectively.

4.3 THE RESULTS PER SUBSECTOR

Table 6 provides an overview of the panel regression results pertaining to financial subsectors, where fixed effects and random effects regressions were conducted for all subsectors, and clustered robust standard errors are reported in parentheses. While results for both types of regressions are presented, the Hausman test was utilized to determine the suitability of fixed and random effects. The outcomes indicate that, except forf the Investment Holding Companies group, the findings from both fixed and random effects models are comparable. In this section, the outcomes are interpreted based on the results of the Hausman test.

Considering the Bank services subsector, the estimated outputs reveal that GCC bank profitability is negatively associated with leverage. That is, the coefficient of ROA is negative and statistically significant at the 1% level, indicating that more profitable banks tend to have lower leverage, consistent with the earlier study of Gropp and Heider (2010) and the pecking order theory. Earnings volatility and tangible assets bear positive and insignificant coefficients, which are not aligned with both the trade-off theory and the pecking order theory. This suggests that GCC banks' leverage is not influenced by these variables. The coefficient of growth opportunities is positive and significant, implying that banks increase leverage to finance future growth. The results also demonstrate a positive association between leverage and size, indicating that larger banks attract more external funding, which is in line with the trade-off theory. Unlike our findings for the whole sample as stated in Table 5, we find evidence that GDP growth bears a positive and statistically significant coefficient, confirming our hypothesis 6. This implies that during economic expansion, banks' leverage increases, which may be attributed to an increase in customer deposits.

The estimated results of the insurance subsector reveal that profitability is negatively and statistically correlated with leverage, indicating that insurance firms reduce leverage when they make more profit to minimize the borrowing cost, which supports the pecking order theory. Asset tangibility in the insurance industry has a positive impact on leverage, implying that these firms rely on external financing for fixed asset expansion. The results also show that growth opportunities and size are negatively (positively) associated with leverage, in line with the trade-off theory. The former indicates that insurance firms rely less on debt for financing growth opportunities, while the latter implies that larger insurance firms increase their

leverage to take advantage of tax shields. Earnings volatility, GDP growth, and inflation, however, have no impact on insurance firms' leverage.

Findings on the determinants of leverage in the investment banking and investment services subsector are similar to those obtained for the insurance subsector, except for growth opportunities. The results show that in this subsector, the coefficient of growth opportunities is positive and statistically significant at 10%, indicating that these companies increase their leverage to finance future opportunities, consistent with the pecking order theory.

Considering investment holding companies in the GCC, Table 6 shows that asset tangibility and size bear a positive coefficient significant at the 10% level. This finding suggests that investment companies with more tangible assets increase their leverage for tax shield advantages (in line with the trade-off theory), or they use their tangible assets to obtain external financing (consistent with the pecking order theory). The estimated coefficient of size is negative and statistically significant at the 5% level, indicating that larger investment holding companies have sufficient accumulated earnings, leading them to rely less on external debt, consistent with the pecking order theory.

4.4 THE RESULTS PER COUNTRY

The findings in Table 7 present the panel regression results at the country level, in which the suitability of fixed effects and random effects models is assessed using the Hausman test. The results reveal that,   except for Saudi Arabia, the random-effects model is deemed to be appropriate for all countries.

Empirical outcomes of the study reveal that profitability serves as the primary driver of leverage among financial firms across all Gulf Cooperation Council (GCC) countries. Specifically, the results show a robust and significant negative correlation between leverage and profitability, which is consistent with the pecking order theory. This finding indicates that financial firms with higher profitability in the GCC opt to use internal funding rather than relying on external financing.

TABLE 6
Panel Regression Results Per Subsector

	Banking Services				Insurance			
	FE		RE		FE		RE	
ROA	-0.8970	(0.0514)***	-0.8981	(0.0516)***	-0.4434	(0.1117)***	-0.4794	(0.1137)***
VOL	0.0117	(0.0166)	0.0115	(0.0167)	0.0405	(0.0417)	0.0425	(0.0426)
TANG	0.0248	(0.0364)	-0.0061	(0.0305)	0.7062	(0.1295)***	0.6126	(0.1308)***
GROW	0.0051	(0.0012)***	0.0058	(0.0012)***	-0.0169	(0.0074)**	-0.0153	(0.0075)**
SIZE	0.0225	(0.0029)***	0.0274	(0.0026)***	0.1069	(0.0103)***	0.1037	(0.0099)***
GDPGR	0.0017	(0.0004)***	0.0019	(0.0004)***	-0.0003	(0.0011)	-0.0003	(0.0011)
INFR	0.0002	(0.0002)	0.0003	(0.0002)	0.0003	(0.0004)	0.0002	(0.0005)
Constant	0.3180	(0.0669)***	-0.8981	(0.0516)***	-1.4844	(0.2041)***	-0.4794	(0.1137)***
R^2	45%		52%		23%		56%	
Model Significance	57.12 (0.000)		471.31 (0.000)		36.57 (0.000)		280.09 (0.000)	
Hausman test	2.33 (0.9395)				1.65 (0.9766)			
Observations	931		931		304		304	
Groups	49		49		16		16	

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TABLE 6 *(continued)*

	Investment Banking & Investment Services				Investment Holding Companies			
	FE		RE		FE		RE	
ROA	-0.4582	(0.0720)***	-0.4652	(0.0713)***	0.0817	(0.1283)	-0.1730	(0.3288)
VOL	0.0066	(0.0171)	0.0088	(0.0170)	-0.0759	(0.1456)	-0.4067	(0.3696)
TANG	0.5744	(0.1525)***	0.5763	(0.1478)***	1.0282	(0.1204)***	0.5411	(0.2089)***
GROW	0.0262	(0.0138)*	0.0261	(0.0137)*	0.0068	(0.0038)*	0.0042	(0.0090)
SIZE	0.1380	(0.0142)***	0.1337	(0.0130)***	-0.0355	(0.0361)	-0.0738	(0.0343)**
GDPGR	-0.0009	(0.0017)	-0.0009	(0.0017)	0.0001	(0.0030)	0.0009	(0.0075)
INFR	-0.0003	(0.0007)	-0.0003	(0.0007)	-0.0004	(0.0009)	-0.0003	(0.0023)
Constant	-2.2995	(0.2735)***	-2.1087	(0.2398)***	0.9663	(0.6867)	1.7637	(0.6670)***
R^2	42%		45%		21%		53%	
Model Significance	27.19 (0.000)		482.11 (0.000)		15.66 (0.000)		377.12 (0.000)	
Hausman test	2.53 (0.9520)				8.14 (0.3205)			
Observations	304		304		57		57	
Groups	16		16		3		3	

***, **, *: Significance at 1%, 5%, and 10%, respectively. Numbers in parentheses are standard errors, and p values are denoted by asterisks.

TABLE 7
Panel Regression Results Per Country

| | Bahrain | | | | Kuwait | | | | Oman | | | |
	FE		RE		FE		RE		FE		RE	
ROA	-0.37	(0.07)***	-0.38	(0.07)***	-0.61	(0.06)***	-0.62	(0.06)***	-0.30	(0.08)***	-0.30	(0.08)***
VOL	0.06	(0.11)	0.06	(0.11)	0.02	(0.01)*	0.02	(0.01)*	-0.01	(0.04)	-0.01	(0.04)
TANG	-0.04	(0.29)	-0.03	(0.28)	0.66	(0.17)***	0.32	(0.10)***	0.63	(0.07)***	0.59	(0.07)***
GROW	0.01	(0.01)	0.01	(0.01)	0.01	(0.00)***	0.01	(0.00)***	0.03	(0.01)***	0.04	(0.01)***
SIZE	0.07	(0.01)***	0.07	(0.01)***	0.01	(0.01)***	0.11	(0.01)***	0.06	(0.01)***	0.07	(0.01)***
GDPGR	-0.00	(0.00)	-0.00	(0.00)	0.00	(0.00)***	0.00	(0.00)***	-0.00	(0.00)	-0.00	(0.00)*
INFR	0.00	(0.00)	0.00	(0.00)	-0.00	(0.00)	-0.00	(0.00)	0.00	(0.00)	0.00	(0.00)
Constant	-0.83	(0.17)***	-0.85	(0.17)***	-1.488	(0.21)***	-1.63	(0.16)***	-0.57	(0.18)***	-0.75	(0.16)***
R2	64%		64%		56%		65%		44%		49%	
Model Sign.	18.51 (0.000)		144.32 (0.000)		38.85 (0.000)		355.96 (0.000)		22.67 (0.000)		177.79 (0.000)	
Hausman test	0.29 (0.9999)				2.57 (0.9219)				8.34 (0.3037)			
Observations	209		209		532		532		342		342	
Groups	11		11		28		28		18		18	

TABLE 7 *(continued)*

	Qatar				Saudi Arabia				United Arab Emirates			
	FE		RE		FE		RE		FE		RE	
ROA	-3.08	(0.76)***	-4.54	(0.76)***	-1.26	(0.09)***	-1.26	(0.10)***	-0.67	(0.17)***	-0.76	(0.18)***
VOL	2.88	(2.17)	6.46	(2.18)***	0.36	(0.16)**	0.35	(0.16)**	-0.19	(0.37)	-0.09	(0.40)
TANG	0.84	(0.74)	0.02	(0.78)	-1.15	(0.42)***	-1.60	(0.40)***	0.17	(0.05)***	0.13	(0.05)***
GROW	0.03	(0.01)	0.01	(0.01)*	0.01	(0.00)***	0.01	(0.00)***	0.01	(0.00)**	0.01	(0.00)***
SIZE	0.03	(0.01)***	0.06	(0.01)***	-0.01	(0.00)*	0.00	(0.00)	0.04	(0.01)***	0.06	(0.01)***
GDPGR	0.03	(0.00)**	0.06	(0.00)***	0.00	(0.00)**	0.00	(0.00)**	-0.00	(0.00)	0.00	(0.00)
INFR	0.00	(0.00)	0.00	(0.00)	-0.00	(0.00)**	-0.00	(0.00)**	-0.00	(0.00)	0.00	(0.00)
Constant	0.15	(0.25)	-0.39	(0.18)**	1.05	(0.10)***	0.80	(0.08)***	-0.10	(0.16)	-0.60	(0.12)***
R2	78%		81%		49%		67%		70%		73%	
Model Sign.	4.90 (0.0001)		378.79 (0.000)		33.84 (0.0000)		241.82 (0.000)		14.70 (0.0000)		247.83 (0.000)	
Hausman test	4.27 (0.7479)				15.98 (0.0253)				9.89 (0.1948)			
Observations	95		95		152		152		266		266	
Groups	5		5		8		8		14		14	

***, **, *: Significance at 1%, 5%, and 10%, respectively. The numbers in parentheses are standard errors, p values are shown by the asterisks.

The earnings volatility is found to have a positive and significant impact on leverage for Kuwait, Qatar and Saudi Arabia, consistent with pecking order theory. This finding indicates that financial firms in these countries are less reliant on internal financing due to the high volatility in earnings, and instead, seek external financing, as highlighted in the study by Frank and Goyal (2009). No evidence of this association, however, has been found for Bahrain, Oman, and the United Arab Emirates.

The coefficients of asset tangibility are positive and significant for Kuwait, Oman, and the United Arab Emirates, in line with the trade-off theory. This implies that financial firms in these countries tend to utilize debt to acquire tangible assets. For Saudi Arabia, however, it has been observed that asset tangibility is negatively associated with leverage at a statistically significant level of 1%, suggesting that equity financing may be less expensive due to lower information asymmetry. No effect of this variable, however, has been detected for Bahrain and Qatar.

Estimated results indicate that growth opportunities bear positive and significant coefficients supporting the pecking order theory in all GCC countries, except Bahrain. These findings suggest that financial firms in these countries tend to increase their leverage to finance future growth. Furthermore, the coefficients of size are positive and significant for all GCC countries, except for Saudi Arabia where this coefficient is statistically negative. The former set of results indicates that larger financial firms in these countries tend to increase their leverage to take advantage of tax shields, which supports the trade-off theory. The latter finding demonstrates that larger financial firms in Saudi Arabia may prefer to utilize accumulated earnings to finance projects, in line with the pecking order theory.

The empirical evidence indicates a statistical positive (negative) relationship between gross domestic product (GDP) growth and leverage among financial firms in Kuwait, Qatar, Saudi Arabia, and the United Arab Emirates (Oman). The positive link implies that during economic expansion periods, financial entities within these nations tend to rely more heavily on external financing as they pursue growth opportunities, thereby supporting the trade-off theory. Conversely, the negative association, which is in line with the pecking order theory, suggests that there is sufficient fund available in financial sectors leading them to prioritize internal financing options rather than relying on external capital.

In the context of the Saudi Arabian economy, it has been determined that the coefficient of inflation bears a negative and statistically significant association. This implies that a rise in the level of inflation precipitates a subsequent increase in interest rates, ultimately resulting in elevated borrowing costs and a concomitant reduction in leverage. However, we find that other Gulf Cooperation Council (GCC) nations exhibit no such association between inflation and leverage, suggesting that the economic dynamics of Saudi Arabia in this regard may be idiosyncratic to that particular context.

5. CONCLUSION

This article attempts to identify the determinant factors of leverage for financial sector companies from Gulf Cooperation Council countries for a 20-year period. The study aimed at exploring the factors affecting financial company leverage and also examining how those factors might change among subsectors and countries. Therefore, the results are reported in three ways: for the whole sample, in subsector detail, and finally, in country detail. We attempted to explore the impact of independent variables on leverage with reference to commonly accepted theories in capital structure literature, namely trade-off, agency, and pecking order theories and developed hypotheses accordingly.The results reveal that the financial sector companies have high leverage levels. This is not a surprising finding because of the different nature of business in financial companies compared to non-financial companies. We found a negative relationship between profitability and leverage for the whole sample, in both country and industry breakdown, which supports the pecking order theory. This implies that lower profitability leads the companies to use external finance. For earnings volatility, we found mixed results; the results reported a positive significant relationship for the whole sample and three countries in the country breakdown, while being insignificant for all subsectors. This finding is contrary to trade-off theory; however, due to the different nature of business model in financial companies, it seems reasonable.

Tangibility has a positive significant effect on leverage for the whole sample, for subsectors except banking services, while the results are mixed in country details. This implies that in most cases tangible assets perform the collateral function for leverage decisions. We found a significantly positive relationship between growth opportunities and leverage for the whole sample and most of the

countries in country detail; however, the results are mixed in subsector detail. As growth opportunities increase, firms finance this growth potential by external finance, resulting in higher leverage. We found a positive significant relationship between size and leverage for the whole sample, for all subsectors except investment holding companies, and for all countries except Saudi Arabia. This finding is consistent with trade-off theory and implies that larger firms use higher levels of leverage. Macroeconomic variables produced insignificant results, even though some significant cases in country and subsector details exist.

This article contributes to the literature by providing a comprehensive analysis of capital structure determinants for not only banks but all financial companies in all six GCC countries. The results have important implications for financial firms and their capital structure decisions and are expected to help financial companies in designing their capital structure policies. First, by understanding the determinants of leverage, financial firms can better manage their financing needs and make informed decisions about their capital structure; they can consider potential effects of those characteristics in making decisions. Second, the leverage-profitability relationship has implications for financial sector regulators and policymakers. Because the financial sector plays a pivotal role in macroeconomy by financing real sector companies, financial institution soundness is critically important.

A good understanding of the capital structure determinants will help policymakers in improving the relevant policies. High leverage and low profitability can push firms into financial distress, potentially leading to systemic risk and negative economic consequences. Policymakers may need to consider measures that encourage financial firms to prioritize stability and prudence and maintain a sound capital structure. Our findings might also have some implications for academics. Those conducting research on the topic might consider teaching the topic by discussing all theoretical aspects and emphasizing that all theories might be applicable in different contexts. Finally, the study highlights the importance of considering the unique financial sector characteristics when examining the determinants of capital structure.

REFERENCES

Abdullah, A.M., and K. Naser. "Determinants of Capital Structure of Banking Sector in GCC: An Empirical Investigation." *Asian Economic and Financial Review* 5, no. 7 (2015): 959-72.

Aggarwal, R., and K.T. Jacques. "The Impact of FDICIA and Prompt Corrective Action on Bank Capital and Risk: Estimates using a Simultaneous Equations Model." *Journal of Banking & Finance* 25, no. 6 (2001): 1139–160.

Ahmad, R., and M. Albaity. "The Determinants of Bank Capital for East Asian Countries." *Global Business Review* 20, no. 6 (2019): 1311-323.

Ahmad, F., and Z. Abbas. "Role of Firms Level Characteristics in Determining the Capital Structure of Banks: Evidence from the Pakistan Banks." *Global Journal of Management & Business Research* 2 (2011): 201–06.

Al-Ghazali, A.M. "The Economic and Behavioural Factors Affecting Corporate Dividend Policy: Theory and Evidence." Ph.D. Dissertation, University of Bath, 2014. http://opus.bath.ac.uk/46574

Al-Harby, A. "Factors Affecting Capital Structure of Conventional and Islamic Banks: Evidence from MENA Region." *Global Review of Islamic Economics and Business* 7, no. 2 (2019): 69-80

Al-Hunnayan, S.H. "The Capital Structure Decisions of Islamic Banks in the GCC." *Journal of Islamic Accounting and Business Research* 11, no. 4 (2020): 745-64.

Al-Matari, EM. "The Determinants of Bank Profitability of GCC: The Role of Bank Liquidity as Moderating Variable—Further Analysis." *International Journal of Finance and Economics* (2021): 1– 13.

Al-Mutairi, A., and K. Naser. "Determinants of Capital Structure of Banking Sector in GCC: An Empirical Investigation." *Asian Economic and Financial Review* 5, no. 7 (2015): 959-72.

Al-Najjar, B., and K. Hussainey. "Revisiting the Capital-Structure Puzzle: UK Evidence." *The Journal of Risk Finance* 12, no. 4 (2011): 329–38.

Amidu, M. "Determinants of Capital Structure of Banks in Ghana: An Empirical Approach." *Baltic Journal of Management* 2, no. 1, (2007): 67-79.

Antoniou, A., Y. Guney, Y., and K. Paudyal. "The Determinants of Capital Structure: Capital Market-Oriented versus Bank-

Oriented Institutions." *Journal of Financial and Quantitative Analysis* 43 (2008): 59–92.

Barclay, M.J., and C.W. Smith. "The Capital Structure Puzzle: Another Look at The Evidence." *Journal of Applied Corporate Finance* 12, no. 1 (1999): 8-20.

_____, and C.W. Smith. "The Capital Structure Puzzle: The Evidence Revisited." *Journal of Applied Corporate Finance* 17 (2005): 8–17.

Bartoloni, E. "Capital Structure and Innovation: Causality and Determinants." *Empirica* 40 (2013): 111–51.

Booth, L., A. Demirguc-Kunt, and V. Maksimovic. "Capital Structures in Developing Countries." *The Journal of Finance* 56 (2001): 87–130.

Bradley, M., G.A. Jarrell, and E. Kim. "On the Existence of an Optimal Capital Structure: Theory and Evidence." *The Journal of Finance* 39 (1984): 857–78.

Bukair, A.A.A. "Factors Influencing Islamic Banks' Capital Structure in Developing Economies." *Journal of Islamic Accounting and Business Research* 10, no. 1 (2019): 2-20.

Dávila, E., and A. Walther. "Does Size Matter? Bailouts with Large and Small Banks." *Journal of Financial Economics* 136, no. 1 (2020): 1-22.

De Jong, A., R. Kabir, and T.T. Nguyen. "Capital structure around the world: the roles of firm and country-specific determinant." *Journal of Banking and Finance* 32, no. 9 (2008): 1954-969.

Fama, E.F. and K.R. French. "Testing Trade-Off and Pecking Order Predictions about Dividends and Debt." *Review of Financial Studies* 15, no. 1 (2002): 1-33.

Frank, M.Z., and V.K. Goyal. "Capital Structure Decisions: Which Factors are Reliably Important?" *Financial Management* 38, no. 1 (2009): 1-37.

Ghosh, S. "Capital Structure, Ownership, and Crisis: Evidence from Middle East and North African Banks." *Accounting Research Journal* 31, no. 2 (2018): 284-300.

Gropp, R. and F. Heider. "The Determinants of Bank Capital Structure." *Review of Finance* 14 (2010): 587-622.

Guizani, M. and A.N. Ajmi. "The Capital Structure Decision of Islamic and Conventional Banks: Empirical Evidence from Malaysia." *Asia-Pacific Journal of Business Administration* 13, no. 2 (2021): 216-34.

Hoque, H., and E.K. Pour. "Bank-level and Country-level Determinants of Bank Capital Structure and Funding Sources." *Int J Fin Econ* 23: (2018): 504-32.

Jacques, K., and P. Nigro. "Risk-based Capital, Portfolio Risk, and Bank Capital: A Simultaneous Equations Approach." *Journal of Economics and Business* 49, no. 6 (1997): 533–47.

Jensen, M.C. "Agency Costs of Free Cash Flow, Corporate Finance, and Takeovers." *The American Economic Review* 76, no. 2 (1986): 323-29.

_____, and W.H. Meckling. "Theory of the Firm: Managerial Behavior, Agency Costs, and Ownership Structure." *Journal of Financial Economics* 3, no. 4 (1976): 305-60.

Jucá, M. N., A.F. de Sousa, and A. Fishlow. "Capital Structure Determinants of North American Banks and the Compensation Executive Program-An Empirical Study on the Actual Systemic Crisis." *International Journal of Business and Management* 7 (2012): 13–26.

Khaki, A.R., and A. Akin. "Factors Affecting the Capital Structure: New Evidence from GCC Countries." *Journal of International Studies* 13, no. 1 (2020): 9-27.

Khan, S., U. Bashir, and M.S. Islam. "Determinants of Capital Structure of Banks: Evidence from the Kingdom of Saudi Arabia." *International Journal of Islamic and Middle Eastern Finance and Management* 14, no. 2 (2021): 268-85.

Kraus, A., and R.H. Litzenberger. "A State-Preference Model of Optimal Financial Leverage." *The Journal of Finance* 28 (1973): 911–22.

Lemma, T., and M. Negash. "Determinants of the Adjustment Speed of Capital Structure: Evidence from Developing Economies." *Journal of Applied Accounting Research* 15 (2014): 64–99.

Levy, A. and C. Hennessy. "Why Does Capital Structure Vary with Macroeconomic Conditions?" *Journal of Monetary Economics* 54, no. 6 (2007): 1545-564.

Lim, T.C. "Determinants of Capital Structure Empirical Evidence from Financial Services Listed Firms in China." *International Journal of Economics and Finance* 4 (2012): 191–203.

Modigliani, F., and H.H. Miller. "The Cost of Capital, Corporation Finance and the Theory of Investment." *The American Economic Review* 48, no. 3 (1958): 261-97.

_____, and M.H. Miller. "Corporate Income Taxes and the Cost of Capital: A Correction." *The American Economic Review* 53, no. 3 (1963): 433-43.

Myers, S.C. "Determinants of Corporate Borrowing." *Journal of Financial Economics* 5 (1977): 147-75.

_____. "The Capital Structure Puzzle." *The Journal of Finance* 39, no. 3 (1984): 574-92.

_____. and N.S. Majluf. "Corporate Financing and Investment Decisions when Firms Have Information that Investors Do Not Have." *Journal of Financial Economics* 13, no. 2 (1984): 187-221.

Padron, Y.G., R.M.C. Apolinario, O.M. Santana, M. Conception, V. Martel, and L.J. Sales. "Determinant Factors of Leverage: An Empirical Analysis of Spanish Corporations." *Journal of Risk Finance* 6 (2005): 60-8.

Rajan, R.G., and L. Zingales. "What Do We Know About Capital Structure? Some Evidence from International Data." *Journal of Finance* 50, no. 5 (1995): 1421-460.

Rao, N.V., K.H.M. Al-Yahyaee, and L.A. Syed. "Capital Structure and Financial Performance: Evidence from Oman." *Indian Journal of Economics and Business* 6, no. 1 (2007): 1-14.

Ripamonti, A. "Financial Institutions, Asymmetric Information, and Capital Structure Adjustments." *The Quarterly Review of Economics and Finance* 77 (2020): 75-83.

Saif-Alyousfi, A., R. Md-Rus, K.N. Taufil-Mohd, H.M. Taib, H.M. and H.K. Shahar. "Determinants of Capital Structure: Evidence from Malaysian Firms." *Asia Pacific Journal of Business Administration*, 12, no. 3/4 (2020): 283-326,

Saunders, A., and B. Wilson. "An Analysis of Bank Charter Value and its Risk-Constraining Incentives." *Journal of Financial Services Research* 19, no. 2–3 (2001): 185–95.

Sheikh, N.A., and Z. Wang. "Determinants of Capital Structure: An Empirical Study of Firms in Manufacturing Industry of Pakistan." *Managerial Finance* 37, no. 2 (2011): 117-33.

_____, and M.A. Quereshi. "Determinants of Capital Structure of Islamic and Conventional Commercial Banks: Evidence from Pakistan." *International Journal of Islamic and Middle Eastern Finance and Management* 10, no. 1 (2017): 24-41.

Shibru, W.M., H. Kedir, and Y. Mekonnen. "Factors Affecting the Financing Policy of Commercial Banks in Ethiopia." *International Journal of Research in Business and Social Science* 4, no. 2 (2015): 44-53.

Stein, J.C. "An Adverse Selection Model of Bank Asset Liability Management with Implications for Transmission of Monetary

Policy." *RAND Journal of Economics* 29, no. 2 (1998): 466-86.

Teixeira, J.C., F.J. Silva, A.V. Fernandes, and A.C. Alves. "Banks' Capital, Regulation, and the Financial Crisis." *The North American Journal of Economics and Finance* 28 (2014): 33–58.

Toumi, K. "Islamic Ethics, Capital Structure and Profitability of Banks; What Makes Islamic Banks Different?" *International Journal of Islamic and Middle Eastern Finance and Management* 13, no. 1 (2020): 116-34.

Wald, J.K. "How Firm Characteristics Affect Capital Structure? An International Comparison." *The Journal of Financial Research* 22, no. 2 (1999): 161-87.

World Bank. Gulf Economic Update Seizing the Opportunity for a Sustainable Recovery, World Bank (2021).

Yildirim, R., M. Masih, and O.I. Bacha. "Determinants of Capital Structure: Evidence from Shari'ah Compliant and Non-Compliant Firms." *Pacific-Basin Finance Journal* 51, no. 5 (2018): 198-219.

Yousef, I. "The Determinants of Capital Structure: Evidence from GCC and UK Real Estate Sectors." *Real Estate Management and Valuation*, 27, no. 2 (2019): 108-25.

Zeitun, R., A. Temimi, A., and K. Mimouni. "Do Financial Crises Alter the Dynamics of Corporate Capital Structure? Evidence from GCC Countries." *The Quarterly Review of Economics and Finance* 63 (2017): 21-33.