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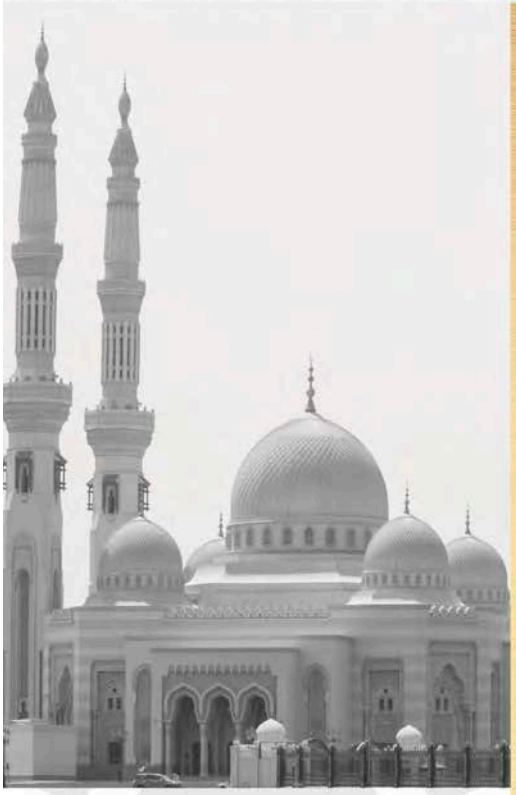

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هيكل رأس المال والأداء في البنوك الإسلامية الخليجية: نهج من مرحلتين

CAPITAL STRUCTURE AND PERFORMANCE IN GCC ISLAMIC BANKS: A TWO-STAGE APPROACH[1]

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الملخص

تبحث هذه الورقة في العلاقة بين هيكل رأس المال وأداء البنوك الإسلامية العاملة في منطقة دول مجلس التعاون الخليجي. يوفر الهدف من هذه الدراسة رؤى نقدية لمديري البنوك فيما يتعلق بقرارات هيكل رأس المال الخاصة بهم. تبحث الورقة في تأثير هيكل رأس المال للبنوك الإسلامية الخليجية على أدائها، وأهمية محددات هيكل رأس المال المختلفة التي قد تحدد مستوى رأس المال الذي تحتفظ به البنوك الإسلامية في دول مجلس التعاون الخليجي. باستخدام نهج قوي من مرحلتين، تحلل الدراسة البيانات من عينة من 20 مصرفا إسلاميا في جميع أنحاء منطقة دول مجلس التعاون الخليجي للفترة من 2010 إلى 2020. وتستخدم طريقة المربعات الصغرى ذات المرحلتين (2 ثانية) لمعالجة المسألة المحتملة للسببية

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العكسية، حيث قد يؤثر الأداء على قرارات هيكل رأس المال. بالإضافة إلى ذلك، يتم استخدام المربعات الصغرى العادية لدراسة العوامل التي تشكل هيكل رأس المال لهذه البنوك الإسلامية. مع بيئة الاقتصاد الكلي الأوسع في السياق، تكشف النتائج عن وجود علاقة إيجابية بين أداء البنك الإسلامي ورأس المال الاسهم. على أثر السببية العكسية للأداء على هيكل رأس المال، وجد أن البنوك الإسلامية ذات الربحية الأعلى تميل إلى استخدام رافعة مالية أعلى. وفي الختام، خلصت الدراسة إلى أن هيكل رأس المال مهم للبنوك الإسلامية في دول مجلس التعاون الخليجي، وتؤكد على أهمية تحديد التوازن الصحيح بين الدين والأسهم لتحقيق الأداء الأمثل والنمو المستدام.

Abstract

This paper investigates the relationship between capital structure and performance of Islamic banks operating in the GCC region. The objective of this study provides critical insights to bank managers regarding their capital structure decisions. The paper investigates the effect of capital structure of GCC Islamic banks on their performance, and the significance of various capital structure determinants that may determine the level of capital held by Islamic banks in GCC. Employing a robust two-stage approach, the study analyzes data from a sample of 20 Islamic banks across the GCC region for the period 2010 to 2020. The Two-Stage Least Squares (2SLS) method is utilized to address the potential issue of reverse causality, where performance might influence capital structure decisions. Additionally, Ordinary Least Squares (OLS) is employed to examine the factors shaping the capital structure of these Islamic banks. With the broader macroeconomic environment in context, the findings reveal a positive correlation between Islamic bank performance and equity capital. On the reverse causality effect of performance on capital structure, it was found that Islamic banks with higher profitability tend to employ higher leverage. In conclusion, the study finds that capital structure is relevant for Islamic banks in the GCC and emphasizes on the importance of identifying the right debt-equity balance for optimized performance and sustainable growth.

الكلمات الدالة: هيكل رأس المال، البنوك الإسلامية، أداء البنوك، مقاييس الاقتصاد الكلي، دول مجلس التعاون الخليجي.

Keywords: Capital structure, Islamic banks, Bank performance, Macroeconomic measures, GCC.

1.0 Introduction

Capital structure decision is one of the most fundamental strategic financial decisions. It has been receiving appropriate consideration and exploration since the seminal work of Modigliani and Miller (1958). The capital structure, or the mix of debt and equity, is critical because it influences the cost of capital and the financial risk associated with it. The cost of capital is reduced by expanding debt capital, but this reduction in cost also introduces financial risk and lowers the flexibility of modifying capital structure further. As a result, studies have been conducted to see if there is a certain combination of debt and equity capital that optimizes business value (optimal capital structure), and if so, what factors may influence a firm's capital structure.

Theories on financing methods have been developed to ascertain optimal capital structure. Modigliani and Miller (1963) developed the trade-off theory followed by pecking order theory (Myers & Majluf,1984). Prior research did not determine an optimal capital structure, rather they focused on the factors that affect the capital structure and the firm, both firm-specific and economic.

Financial and economic authorities and scholars are still fascinated by the capital structure puzzle. Irrespective of sector or industry, the capital structure alternates between equity and debt in order to reduce the cost of capital for the firm (Watson and Head, 2010). Therefore, capital structure strategies are utilized to achieve a return on equity.

As almost all business enterprises are affected by the capital structure, the optimal structure for a firm depends on the nature of the

business. There are major differences in the capital structure between financial and non-financial institutions. Banking is one type of industry that has much higher leverage ratios than non-financial enterprises. This is due to the fact that banks have very different operational systems to create company value. Banks, unlike non-financial enterprises, whose profitability and exposure to bankruptcy costs impact their debt preference, have fewer options and must rely on debts, the majority of which originates from deposits as one of the most important and cheapest sources of capital. As such, banks have low level of equity capital to total assets, which make them highly sensitive to changes in financial leverage.

Moreover, the capital structure of banks is highly regulated. The subprime financial crisis is clear evidence indicating that the disaster was driven by banks' excessive leverage (Ivashina & Scharfstein, 2010). The high sensitivity to changes in financial leverage and level of regulation are some of the factors contributing to the importance of capital structure for banks and its impact on return on equity.

Over the last four decades, the Islamic banking industry has evolved from a niche sector to a significant player in the global financial landscape, due to optimism on Islamic banking's enormous potential for future development. Increased growth has been observed in the number of Islamic banks and Islamic banking windows, not only in Muslim nations but also in Western countries (Yungucu and Saiti, 2016). Aside from the large and growing Muslim population seeking Shariah-compliant financial instruments, the industry's ability to demonstrate a higher level of ethical credibility has fueled the sector's growth, particularly in the aftermath of the 2008 financial crisis, when investors sought risk-sharing instruments.

According to Alpen Capital (2021), the global Islamic finance market has been growing at a steady pace, recording a CAGR of 7.8% between 2014 and 2019. Islamic Banking accounts for 69.3% of the total global Islamic finance industry assets. During 2019, Islamic Banking grew at a pace of 14.2% y-o-y to reach US$ 1,993 billion.

Due to the nature of Islamic Banks' deposits, Islamic banks are supposedly all-equity unleveraged firms. Ideally according to this concept, there will be no need for capital structuring. In reality, all deposits, including investments, are always guaranteed, either

explicitly or implicitly. Therefore, capital structure, its strategies, and impact on profitability, is relevant to Islamic Banks. The emerging differences in the capital structure of Islamic Banks could be attributed to several factors. Examples include the diversion from the ideal all-equity structure of Islamic banks, the availability of Shari'a compliant alternative debt instruments such as Sukuk, and the rapid growth in Sukuk market.

On capital structure decisions, Islamic banks are also faced with an extra constraint. Increased capital ratios may improve the financial health of banks, but they will also lower the required rate of return for investors. Meanwhile, deposits and Sukuk (quasi-debt instruments) may be less expensive sources of funding, but their availability may be limited due to Shariah compliance requirements. Islamic Banks can either utilize high capital ratios which raise the safety of the bank or rely on deposits and Islamic bonds which are regarded cheaper sources of funding owing to their tax deductibility. Management must carefully decide upon the proper balance of debt and equity, namely, capital structure, in order to enhance the value of the bank. Therefore, it is vital for Islamic banks to determine the optimal capital structure that will maximize their performance and value.

2.0 Literature Review

2.1 Capital Structure Theory

The M&M theorem, which stipulates that in a perfect market, the way a company is financed has no impact on its value, is the backbone of current capital structure theory despite its perception as a purely theoretical result due to its set of restricting assumptions that simplify real-world complications.

This finding acts as a bedrock that motivates researchers to ascertain real-world factors that influence capital structure. When the assumptions are relaxed, the way a company finances its operations has an impact on its value. These factors include taxes, the costs of bankruptcy, agency costs, and information asymmetry.

The effect of taxes and bankruptcy costs on the theorem was then explored, whereby tax deductibility of interest makes debt financing attractive when the no-tax assumption is relaxed (Miller & Modigliani, 1963). Furthermore, they noted that other sources of

funding, such as retained earnings, could be less expensive than debt in some cases, depending on the investor's tax situation under the personal income tax. the consequences of bankruptcy prevent businesses from taking on too much debt, resulting in the optimal capital structure no longer being a hundred percent debt.

Myers (1984) established the Pecking Order Theory to incorporate the costs of asymmetric information. The basic premise of this theory is that organizations prioritize their funding sources (ranging from internal financing to equity), with equity serving as a final resort. As a result, a company is said to follow a pecking order if it first uses internal funds, then uses external funds, preferring to issue debt, and finally, when it is no longer feasible to issue more debt, equity is issued.

The modern theory of financial intermediation emphasizes banks' information acquisition function, the asymmetric information problem has been extensively examined in banks. Financial intermediation exists, according to this concept, because banks profit from economies of scale and have a comparative advantage in producing information on borrowers. (Berger et al, 1995)

2.2 Capital Structure of Banks

Banks and financial institutions in general have typically been excluded from empirical studies on capital structure choice for a variety of reasons in corporate finance. Banks must have more capital than the regulatory minimum, as they are frequently exposed to a variety of risks that might disrupt banking operations and lead to bankruptcy. Banks were previously excluded from earlier research due to the deposit contract's unique form, as well as legal constraints imposed on banks and the degree of leverage in banking (Octavia and Brown, 2008).

In conventional banks, several studies have looked into the factors that affect capital structure (Caglayan and Sak, 2010; Frank and Goyal, 2008; Gropp and Heider, 2009). Studies have shown a significant relationship between capital structures and variables such as asset size, profitability, tangibility, growth opportunities, and dividend policy. Frank and Goyal (2008) provided several significant

contributions to defining capital structure variables, which are referred to as the “core model of leverage”.

The literature on the impact of size on leverage is mixed. Studies have found that size and leverage have a positive association (Gropp and Heider, 2009; Rajan and Zingales, 1995; Frank and Goyal, 2008). According to the trade-off theory, the size and level of bankruptcy are inversely related. Because of their high level of diversity, large businesses are less likely to go bankrupt, resulting in decreased cash flow volatility, which is also evidenced in the banking industry (Gropp & Heider, 2010; Octavia & Brown, 2008).

Size, on the other hand, can be used as a proxy for asymmetric information between internal firms and the capital market, where it was found that stocks were favored over debt. As a result, the pecking order hypothesis predicts that size and leverage will have a negative relationship (Titman and Wessels, 1988).

Upon studying banks in the U.S., it was found that only around half of the M&M offset is achieved in practice. Moreover, DeAngelo and Stulz (2013) posited that “MM's leverage irrelevance theorem is simply inapplicable to banks”. Ghosh (2018) examined the determinants affecting the capital structure of Over 100 banks from 12 MENA countries using data from the years 2000 to 2012, and found that variables that influence book leverage are similar to those that influence market leverage, contradicting the widely held belief that bank capital structure is solely a response to regulatory requirements, as regulatory concerns would have driven a wedge between these two leverage metrics otherwise.

These studies are noteworthy because they show that traditional determinants of capital structure, which are typically thought to impact non-financial enterprises' capital decisions, can also be used to explain the capital structure of banks. These findings are significant because, if capital requirements are not a first-order predictor of a bank's capital structure, banks should pay proper attention to the impact of their capital structure on their profitability and performance.

2.3 Effect of Capital Structure on Bank Performance

Studies have explored the importance of banks' capital decisions and the impact of capital structure on their performance. Berger (1995)

suggested that a larger capital-asset ratio is linked to a lower after-tax return on equity (ROE). Arguments in favor of the hypothesized negative capital-earnings relationship are based on a one-period model of perfect capital markets, as well as the symmetric information assumption between the bank and its investors. Despite these arguments, Berger (1995) found that the book values of capital-to-assets ratio (CR) and return on equity (ROE) were positively correlated for US banks in the mid-to-late 1980s. Berger and di Patti (2002), using data from 7,320 US banks from 1990 to 1995, discovered that an exogenous decrease in equity-to-assets ratio by one percentage point at the sample mean predicts a 6 percent rise in ROE. Hutchison and Cox (2006) investigated the relationship between capital structure and return on equity for US banks from 1983 to 1989, when they were less regulated, and from 1996 to 2002, when they were more regulated. They discovered that financial leverage and return on equity have a positive relationship. As an outcome, banks continue to be encouraged to grow their financial leverage in order to boost stockholder returns, but at the expense of increasing financial risk. The several studies on the impact of capital structure on performance have produced contradictory results in terms of the capital-earnings relationship.

2.4 Capital Structure of GCC Banks

Al-Mutairi and Naser (2015) investigated the factors that influence capital structure in a sample of 47 publicly listed commercial banks of the Gulf Cooperation Council (GCC) and found that that profitability and liquidity have an impact on the capital structure decision of banks. The study found that debt finances the vast majority of commercial banks' assets in the GCC representing more than 80 percent of the banks' capital, hence underlining the significance of long-term debts in commercial banks' funding in the GCC.

Khan et al (2020) attempted to identify most significant elements that influence the capital structure of commercial banks in the Kingdom of Saudi Arabia for the period 2010–2017 by studying annual data of commercial national banks that are publicly traded on the Tadawul Saudi stock exchange. The study found that Saudi Arabian banks are heavily leveraged, so confirming the fact that the

nature of their operation is distinct from that of non-banking corporations. Volatility, growth, and bank size all have positive and statistically significant relationships with book leverage. Profitability and tangibility are negatively correlated with the amount of leverage in the accounting record. Evidence showed that the explanatory factors profitability, earnings volatility, tangibility, growth, and bank size all have significant effects on the capital structure decisions of Saudi commercial banks in terms of equity and debt. Briefly stated, the determinants of capital structure for Saudi banks are the same as those for non-financial enterprises, although they are of a different nature than those for financial firms.

2.5 Capital Structure of Islamic Banks

There have been a handful of studies on factors that impact the capital structure of Islamic banks (Toumi et al, 2019; Belanes, 2015; Baltac & Ayaydn, 2014). The influence of size on Islamic Banks' leverage is supported by the trade-off theory, according to the literature. Baltac and Ayaydn (2014) confirmed the trade-off thesis among Turkish banks, demonstrating a positive association between size and Islamic Banks' leverage. Large banks face lower bankruptcy and agency costs, and thus borrow more than small banks. This is in line with the findings of Toumi et al. (2015), who found that the capital ratio is negatively correlated to Islamic Banks' size, implying a positive relationship between size and leverage. Belanes (2015) too confirmed that size has a negative impact on Islamic Banks' capital ratios, and a positive impact on Islamic Banks' leverage. Large banks are more diverse and have better access to financial markets than smaller banks. Therefore, large banks' equity ratios will be lower, resulting in higher leverage.

2.6 Effect of Capital Structure on Islamic Banks Performance

Pratomo and Ismail (2006) applied Berger and di Patti's (2002) model of the relationship between a bank's earnings and capital structure to Islamic banks to investigate Malaysian Islamic banks from 1997 to 2004. Their findings are compatible with the agency theory. Increased profit efficiency is connected with higher leverage or a lower equity capital ratio, assuming all other factors remain constant. Also

discovered was the relationship between bank performance and the size of the bank. This observation lends support to the concept that huge corporations have a tendency to be unlevered.

Al-Farisi and Hendrawan (2011) conducted a similar study on the impact of capital structure on the performance of Islamic Banks and Conventional Banks operating in Indonesia, and found discrepancies, which led them to conclude that a bank's capital ratio had a negative association with its profit efficiency. A bank's profit performance will deteriorate as a result of a higher level of capital. The findings also revealed that the negative impact of leverage on performance is significantly greater in Islamic Banks than in Conventional Banks. It appeared that management of the capital structure in Islamic Banks is required in order to improve their performance and boost their overall efficiency.

Al-Kayed et al. (2014) researched the effect of capital structure on the performance of Islamic banks. From 2003 to 2008, a total of 85 Islamic banks in 19 countries were examined in this study. It was discovered that the performance of Islamic banks is positively related to their capital ratio. The findings of this study contribute to our understanding of the capital structure and performance of Islamic financial institutions. In this study, the most noteworthy conclusions are that capital structure decisions are relevant for Islamic banks and that the capital ratio has a positive impact on the performance of Islamic banks.

Meero (2015) conducted research in the Gulf Cooperation Council (GCC) region to determine the degree to which capital structure decisions made by IBs and CBs are similar, as well as the relationship between capital structure and performance. Between 2005 and 2014, the sample included eight IBs and eight CBs. The findings reveal that the capital structure of IBs and CBs in the GCC region is similar. These findings, on the other hand, were in contrary to the findings of a study conducted by Al-Farisi and Hendrawan (2012), which found that capital structure decisions in IBs and CBs were different. Meero (2015) found that there is a negative association between leverage and the performance of Islamic Banks, whereas the size of the bank has a positive relationship with leverage.

From the literature studied, the impact of capital structure on the performance of Islamic banks, like conventional banks, is somewhat unclear, with results from both ends of the spectrum. Some studies suggest that capital structure has a positive association with Islamic Banks' performance, while others suggest that leverage has a negative relationship with Islamic Banks' performance.

3.0 Methodology

Based on the problem statement and gaps of literature, this study aimed to investigate the effect of capital structure of GCC Islamic banks on their performance, and the significance of various capital structure determinants that may determine the level of capital held by Islamic banks held in GCC.

Several profitability measures are used as the dependent variable and a number of performance determinants will be employed as the independent variables to measure their effect on performance. This study also employs leverage as the dependent variable and capital structure determinants as the independent variables. This is performed to study how these variables affect capital structure decisions for Islamic banks in GCC. In the Islamic banking literature, a collection of internal and external banking variables is typically combined into a model to measure Islamic Banks' performance. Internal characteristics are incorporated via financial ratios, while external elements are regulated by controlling the macroeconomic environment. Internal bank factors such as capital, growth, size, and risk ratios are all examined in this study.

The data used in this study contains cross-country bank-level data obtained from the income statements and balance sheets of 20 fully Islamic banks in the GCC countries for each year from 2010 to 2020, sourced mainly from the Bloomberg database. The macroeconomic and financial market data are collected from the World Bank Open Data. The countries covered in this study are (in alphabetical order): Bahrain (4 banks), Kuwait (4 banks), Oman (1 bank), Qatar (4 banks), Saudi Arabia (4 banks), and the United Arab Emirates (3 banks). Due to the need to standardize the variables, all variables in this study are expressed as ratios. The total assets of banks are used to normalize most bank characteristic data. In the

performance determinants models, the dependent variable is one of the profitability measures used in the study: return on equity (ROE), return on assets (ROA), and profit margin (PM). The independent variables in the model include capital ratio, liquidity, risk, size, and macroeconomic indicators.

$$I_{ijt} = \alpha_0 + \alpha_i B_{ijt} + \varepsilon_{ijt}$$

I_{ijt} is one measure of performance (ROE, ROA, or PM) for bank i in country j at time t; B_{ijt} are bank variables (capital ratio, liquidity, size and risk) for bank *i* in country *j* at time *t*; X_{jt} are macroeconomic variables for country *j* at time *t*, it includes real GDP growth and inflation. All variables are contemporaneous in the model since performance in each year is the function of these factors in the same year.

In the capital structure determinants models, the dependent variable is leverage. The independent variables in the model include profitability measures (ROE, ROA, and profit margin), growth, risk, size, and macroeconomic indicators.

$$L_{ijt} = \alpha_0 + \alpha_i B_{ijt-1} + \beta_j X_{jt} + \varepsilon_{ijt}$$

L_{ijt} is leverage, which is a proxy for capital structure, for bank *i* in country *j* at time *t*; B_{ijt-1} are bank variables (ROE, ROA, PM, LONTA) which are lagged to take into consideration potential time-lagged temporal effects. It is thought that the outcomes in the previous year will affect managements' choices about capital structure in the upcoming year. X_{jt} are macroeconomic variables for country *j* at time *t*, it includes real GDP growth and inflation. The macroeconomic explanatory variables are contemporaneous because their influence is instant.

4.0 Results and Discussion

4.1 Unit Root

All variables were tested for stationarity using the unit root test. The table below shows that all performance measures (ROE, ROA, PM) are non-stationary under the IPS. ROA and Profit Margin are stationary under both the Fisher-ADF test and the Fisher-PP test, while

ROE is still non-stationary. The two capital structure variables, capital structure and leverage, are found stationary at the 5% significance level under the Fisher-ADF test, and at the 1% significance level under the Fisher-PP test. LONTA, size, growth, and inflation are non-stationary under both the IPS and Fisher-ADF tests but stationary under Fisher-PP test at 1% significance level. LDR and GDP growth are stationary under all three tests.

Table 1: Unit Root Test Results (Variables at levels, using individual constants and trends)

Variable	**Im, Pesaran and Shin W-stat**	**ADF – Fisher Chi-square**	**PP – Fisher Chi-square**
ROE	2.0102	31.2809	26.2271
ROA	0.5335	51.6386	72.6903
Profit Margin	0.1981	52.8037	57.9143
Capital Ratio	-0.6409	53.7180	78.4251
Leverage	-0.6409	53.718	78.4251
LONTA	-0.1813	40.6143	89.4112
LDR	-1.9522	71.1866	107.545
Size	0.4987	34.2545	64.6408
Growth	0.05658	35.7996	107.308
GDP Growth	-4.1061	126.201	199.037
Inflation	-0.0988	52.6725	99.4206

The data are then first differenced and panel unit root tests are performed using individual constants and trends to check whether first differencing renders them stationary. Table 2 shows panel unit root test results for variables at first difference using an individual constant and trend. IPS test indicates that the stationary variables are ROA, GDP growth, and inflation. First differencing exhibits all variables stationary under the Fisher-PP test at the 1% significance level, except for LDR. LDR is stationary at the 1% significance level under the Fisher-ADF test, along with ROE, ROA, profit margin, growth, GDP growth, and inflation. The capital structure variables, capital structure

and leverage, are found stationary at the 5% significance level under the Fisher-ADF test.

Table 2: Unit Root Test Results (Variables at first difference using individual constants and trends)

Variable	Im, Pesaran and Shin W-stat	ADF – Fisher Chi-square	PP – Fisher Chi-square
D (ROE)	-1.4469	71.2268	81.7392
D (ROA)	-1.7904	77.5969	116.273
D (Profit Margin)	-1.0847	60.2358	141.518
D (Capital Ratio)	-0.7179	54.1106	115.498
D (Leverage)	-0.7179	54.1106	115.498
D (LONTA)	-0.1813	40.6143	89.4112
D (LDR)	-1.5475	69.9981	124.046
D (Size)	0.5644	32.0043	101.211
D (Growth)	-1.1489	60.2707	236.679
D (GDP Growth)	-2.4025	93.5270	182.114
D (Inflation)	-3.3561	107.781	211.038

4.2 Performance Determinants Regressions

The tables below show the 2SLS results of ROE, ROA, and profit margin determinants. The Hausman test was performed on each model to test for the presence of correlation between the model's independent variables and the unobserved affect variable. Failure to reject the null hypothesis indicates that there is correlation between the model's independent variables and the unobserved effect variable. The chi-square statistics are insignificant for the three models. Therefore, random effects were employed instead of fixed effects.

Table 3: 2SLS Results (Dependent Variable: ROE)

Variable	Coefficient	Standard Error	t-Statistic	Probability
CR	1.024	0.461	2.221	0.027
LDR	0.010	0.049	0.219	0.826
LONTA	-0.019	0.145	-0.133	0.894
Size	15.840	6.801	2.329	0.021

GDP Growth	0.402	0.226	1.780	0.077
Inflation	0.423	0.388	1.091	0.276
Constant	-0.404	1.070	-0.377	0.706
R-Squared	0.078			
F-Statistic	2.233			
Probability (F-Statistic)	0.042			

Results in the table 3 show that capital ratio is positively related to return on equity (ROE), and it is statistically significant at 5% significance level. The positive relationship between capital ratio and ROE can be explained in several ways. First, the relation is consistent with the signaling theory, which states that banks that are expected to perform better confidently send this information via increased capital. When a bank's management has access to confidential knowledge about future cash flows, it might use capital decisions to communicate this information. Another rationale for the positive capital-profitability relation is that increasing capital reduces the estimated costs of bankruptcy or liquidation, which might improve predicted earnings. When a bank is heavily leveraged, even a minor drop in asset value might cause it to become distressed and potentially insolvent. As newcomers to the market, Islamic banks often maintain more equity since they cannot afford a bank failure, which would jeopardize the Islamic banking system's overall reputation. Moreover, a greater capital ratio may result in increased profitability if it lowers risk-related barriers to entry or expansion into successful product lines. Banks with more capital and lower risk of failure may be better positioned to take advantage of profitable opportunities.

Liquidity (LDR) shows a positive coefficient. Lower LDR corresponds to having excessive liquidity, and potentially lower profits. On the other hand, high LDR indicates that a bank has taken more financial stress. The positive coefficient indicates that for the sample Islamic banks increasing the LDR, hence having lower liquidity, will have a positive impact on the Islamic banks'

profitability. However, the model shows that this relationship is statistically insignificant.

The results show that the loans to assets ratio (LONTA) coefficient is negative. This conclusion implies that a greater LONTA lowers the banks' return on equity (ROE). Furthermore, this ratio is projected to have a positive relationship with bank profitability, according to Alper and Anbar (2011), except when banks incur inappropriate levels of risk. As a result, LONTA's negative impact on ROE can be justified by the fact that when banks incur unreasonable levels of risk, this ratio has a negative impact on their profitability. This result, however, is shown to be a statistically insignificant factor influencing ROE. The average LONTA of the sample Islamic banks is 53%, implying that the Islamic banks' risk is maintained to a reasonable level and that an increase in LONTA will not have a substantial influence on the banks' profitability.

The results reveal that the bank size coefficient is positive. This positive relationship between bank size and return on equity (ROE) implies that as a bank's size grows, so does its profitability. This relationship is statically significant at the significance level of 5%. Furthermore, this conclusion is in line with expectations, and it supports the theory of economies of scale. This result is in line with the findings of some research, which found that the size of a bank has a considerable impact on its profitability.

The coefficients of both macroeconomic measures, GDP growth and inflation, are positive, as expected. At a 10% significance level, GDP growth rate is statistically significant. The positive GDP growth rate coefficient suggests that as the GDP growth rate rises, bank profitability tends to increase as well. Furthermore, it is anticipated that the GDP growth rate will have a favorable impact on bank profitability since the supply and demand for bank loans and deposits will increase as the GDP rate goes up, increasing the banks' profitability (Alper and Anbar, 2011; Zarrouk et al., 2016).

It is argued that inflation rate can have a positive impact on the profitability of banks (Wasiuzzaman and Tarmizi, 2010). The results show that coefficient of inflation is positive, indicating that an increase in the annual inflation rate results in a higher return on equity (ROE)

for Islamic banks in GCC. Inflation, however, was found to be statistically insignificant.

Table 4: 2SLS Results (Dependent Variable: ROA)

Variable	Coefficient	Standard Error	t-Statistic	Probability
CR	0.064	0.030	2.121	0.035
LDR	-0.006	0.004	-1.626	0.105
LONTA	0.021	0.013	1.675	0.095
Size	1.258	0.336	3.737	0.000
GDP Growth	0.083	0.030	2.731	0.006
Inflation	0.099	0.058	1.709	0.089
Constant	-11.836	3.410	-3.470	0.000
R-Squared	0.122			
F-Statistic	4.526			
Probability (F-Statistic)	0.000			

As shown by the results, the capital ratio is positively related to the return on assets (ROA). This relation is statically significant at the 5% significance level. This is in contrast to theory that higher financial leverage, a lower capital ratio, boost profits. Rather, the findings support the theory that profitable banks remain well capitalized, or that highly capitalized banks have access to cheaper, less risky sources of funding, resulting in higher profit rates.

The loans to deposits ratio (LDR) has a coefficient that is negative, indicating that a further increase in the LDR, which typically refers to a deterioration in liquidity levels, will reduce the Islamic banks' return on assets (ROA). This is rationalized by the fact that insufficient liquidity is one of the main issues that lead to banks' failure. However, according to the results, this relation is not statically significant.

The results indicate that the coefficient of the loan to asset ratio (LONTA) is positive. This result indicates that the higher loan to asset ratio (LONTA) results in increasing the return on assets (ROA) of

Islamic banks. The positive relationship between LONTA and ROA is statically significant at the 10% significance level.

The relationship between Islamic banks' size and their return on assets (ROA) is positive. This is similar to the relationship between size and return on equity (ROE). Moreover, the positive relationship is in accordance with the expectations. The results show that the relationship between size and ROE is statically significant at the significance level of 1%.

GDP growth rate is statistically significant at a 5% significance level. The positive GDP growth rate coefficient indicates that when the GDP growth rate grows, so does the banks' return on assets (ROA). Furthermore, this is explained by the same argument; the GDP growth rate is expected to have a positive impact on bank profitability because the supply and demand for bank loans and deposits would increase as the GDP rate rises, boosting bank profitability.

The results reveal that the inflation coefficient is positive, indicating that a higher annual inflation rate results in a greater return on assets (ROA) for Islamic banks. This is in line with the argument that the rate of inflation has a favorable impact on bank profitability. Furthermore, the findings suggest that the positive relationship between inflation and ROA is statistically significant at the 10% level.

Table 5: 2SLS Results (DV: Profit Margin)

Variable	**Coefficient**	**Standard Error**	**t-Statistic**	**Probability**
CR	-0.001	0.337	-0.005	0.995
LDR	0.007	0.045	0.165	0.869
LONTA	0.007	0.045	2.545	0.011
Size	15.196	3.062	4.962	0.000
GDP Growth	1.129	0.367	3.077	0.002
Inflation	0.807	0.716	1.127	0.261
Constant	-135.994	31.021	-4.383	0.000
R-Squared	0.223			
F-Statistic	8.602			
Probability (F-Statistic)	0.000			

In contrast to the models using the profitability measures ROE and ROA, the coefficient of capital ratio under the profit margin model is negative. This result is consistent with the agency cost theory, which anticipates a drop in ROE when the capital ratio, or equity, rises. The theory assumes that increasing leverage, lowering equity, and thus increasing the capital ratio, will improve performance through managerial discipline. This negative relationship backs up this theory. Nevertheless, this relationship is found to be statically insignificant.

The coefficient of liquidity (LDR) is positive. Lower LDR indicates excessive liquidity and, as a result, perhaps lower profits. The positive relationship between LDR and profit margin shows that increasing the LDR, and thus having less liquidity, will have a favorable influence on the profitability of the Islamic banks. This means that if Islamic banks have more liquidity than they need, they will miss out on opportunities to generate more profits. This relationship, nonetheless, is statistically insignificant, according to the model.

The loan to asset ratio (LONTA) has a positive coefficient, according to the results. This finding suggests that Islamic banks' profit margins increase as their loan to asset ratio (LONTA) rises. At the 5% significance level, there is a statistically significant positive relationship between LONTA and profit margin.

The relationship between Islamic banks' size and their profit margin is positive. This positive relationship is in consistency with the relationships under the models using both of ROE and ROA as profitability measures. As well as this positive relationship is in accordance with the expectations. The results show that the relationship between size and profit margin is statically significant at the significance level of 1%.

Both macroeconomic measures, GDP growth rate and inflation, are positively related to profit margin. This positive correlation is also found under the models using ROE and ROA. The positive relationship between GDP growth rate and profit margins for Islamic banks is statically significant at the 5% significance level. Inflation, on the other hand, was found to be a statically insignificant factor affecting profit margins of Islamic banks.

4.3 Capital Structure Determinants Regressions

The tables below show the ordinary least squares (OLS) results of capital structure determinants model, where the dependent variable is leverage, when the performance variables used are ROE, ROA and profit margin.

Using the several profitability indicators, the Hausman test was run on all three models. The Hausman test rejects the null hypothesis that there is no correlation between the model's independent variables and the unobserved affect variable, and the chi-square statistic is significant at the 5% significance level for each model. As a result, it's reasonable to conclude that fixed effects are more efficient than random effects.

Table 6: OLS Results (DV: Leverage, Performance measure: ROE)

Variable	**Coefficient**	**Standard Error**	**t-Statistic**	**Probability**
ROE(-1)	-0.087	0.032	-2.710	0.007
Growth(-1)	-0.0002	0.0002	-0.954	0.341
LONTA(-1)	0.074	0.027	2.699	0.007
Size(-1)	4.717	0.753	6.263	0.000
GDP Growth	-0.078	0.074	-1.048	0.296
Inflation	0.135	0.132	1.023	0.307
Constant	39.678	6.837	5.802	0.000
R-Squared	0.796			
F-Statistic	24.764			
Probability (F-Statistic)	0.000			

The table shows the determinants of capital structure regression results when return on equity (ROE) is used as the measure of performance.

The results indicate that the relationship between leverage and profitability is negative. As profitability increases, leverage levels decrease for Islamic banks. According to the model, this negative relationship is statically significant at the significance level of 5%.

Higher leverage ratios can reduce bank profitability by allowing them to perform less profitable lending. Because there is a negative correlation between leverage and profitability, it is indicated that the Islamic banks using less debt are more profitable.

Risk is a significant factor influencing Islamic banks' capital structure decisions, as indicated by the loans to assets ratio (LONTA (-1)). At a 5% significance level, it is statistically significant. This means that Islamic banks use debt, such as customer deposits and Sukuk, to partially fund their financing issuances, such as Musharakah, Murabaha, Mudarabah, and other Islamic instruments.

Size is positively related to leverage for Islamic banks. This positive relationship is statically significant at the significance level of 1%. This is consistent with expectations as well as previous studies. Larger banks are expected to have higher leverage for several reasons. Large banks are more diversified and less likely to go bankrupt. They are also anticipated to have lower direct costs when issuing debt and equity.

The results also show that growth, GDP growth rate and inflation have no significant effects on capital structure decisions of Islamic banks.

Table 7: OLS Results (DV: Leverage, Performance measure: ROA)

Variable	**Coefficient**	**Standard Error**	**t-Statistic**	**Probability**
ROA(-1)	-0.353	0.181	-1.948	0.053
Growth(-1)	-0.0001	0.0002	-1.948	0.516
LONTA(-1)	0.0722	0.027	2.593	0.010
Size(-1)	4.384	0.742	5.905	0.000
GDP Growth	-0.070	0.742	-0.927	0.355
Inflation	0.138	0.075	1.027	0.305
Constant	42.903	6.717	6.384	0.000
R-Squared	0.792			
F-Statistic	24.097			
Probability (F-Statistic)	0.000			

The table shows the determinants of capital structure regression results when the measure of performance used is return on assets (ROA). In consistency with the model using ROE, the profitability measure, LONTA and size are significant. The results suggest that there is a negative correlation between leverage and ROA. Leverage levels for Islamic banks decline as profitability rises. This negative relation is statistically significant at the 10% significance level, according to the model. This relation also suggests that Islamic banks that employ less debt are likely to be more profitable.

Risk is a significant factor influencing Islamic banks' capital structure decisions at the 5% significance level. The correlation is positive, the increase in the loans to assets ratio for Islamic banks increases their levels of leverage. Size continues to be a significant factor affecting capital decisions for Islamic banks. The model indicates a positive relationship between size and ROA. Size is statically significant at the significance level of 1%. Furthermore, growth, GDP growth rate, and inflation have no substantial impact on Islamic banks' capital structure decisions, according to the findings.

Table 8: OLS Results (DV: Leverage, Performance measure: Profit Margin)

Variable	**Coefficient**	**Standard Error**	**t-Statistic**	**Probability**
Profit Margin(-1)	0.012	0.015	0.794	0.428
Growth(-1)	-0.0004	0.0002	-1.664	0.098
LONTA(-1)	0.041	0.032	1.285	0.200
Size(-1)	5.374	0.788	6.817	0.000
GDP Growth	-0.063	0.083	-0.762	0.446
Inflation	0.085	0.148	0.567	0.564
Constant	34.427	7.083	4.860	0.000
R-Squared	0.783			
F-Statistic	23.130			
Probability (F-Statistic)	0.000			

Under the regression using profit margin as the profitability measure, none of the variables are significant except for growth and size. Leverage has a negative relationship with growth. At the 10% significance level, this relationship is statistically significant. The agency theory predicts that organizations with higher investments take on more debt to discipline management, but this outcome contradicts it. On the contrary, the findings suggest that Islamic banks prefer to fund their growth through the issuance of equity rather than debt instruments. This demonstrates that equity has a favorable impact on performance, owing to the fact that it is a less costly source of capital than debt.

Islamic banks' capital decisions are still heavily influenced by their size. The model shows that size and profit margin have a positive correlation. At a 1% significance level, size is statistically significant. In addition, it was also found that LONTA, GDP growth rate, and inflation have no significant impact on Islamic banks' capital structure decisions.

5.0 Conclusion and Recommendations

The results show that Islamic banks' performance indicators respond positively to increases in capital, after controlling for the macroeconomic environment, using a sample of 20 Islamic banks in the GCC. This suggests that sufficient capital ratios play an empirical role in influencing Islamic bank performance. Moreover, standard determinants of capital structure have explanatory power in explaining variances in Islamic banks' book capital, according to the study.

According to the findings, capital structure decisions are relevant for Islamic banks. The findings of this study show that the capital ratio has a positive impact on Islamic bank profitability. Under two panel methods, the positive relationship is statistically significant and persistent.

Additionally, the findings of this study show that more profitable Islamic banks utilize leverage. Leverage has a negative relationship with growth opportunities. As a result, Islamic banks choose to fund their expansion with equity, which is in line with the findings of performance determinants regressions, which show that a larger capital ratio has a favorable impact on performance. Leverage

has a positive relationship with size. The larger an Islamic bank is, the more leverage it employs. Furthermore, macroeconomic variables do not appear to influence the capital decisions of Islamic banks.

In conclusion, the study finds that capital structure is relevant for Islamic banks in the GCC. In order to enhance the value of their Islamic banks, managers must carefully choose the right combination of debt and equity. In addition, the research highlights that standard capital structure variables have explanatory power in explaining variances in Islamic banks' book capital.

Many studies have concentrated on the factors that influence the capital structure of banks and how they affect the performance of the banks themselves. However, only a few empirical studies have been conducted on Islamic Banks in the GCC region. This study will contribute to the empirical body of knowledge about Islamic banks' capital structure, as well as its determinants and effects on performance, through the use of quantitative techniques. Bank managers and policymakers will benefit from empirical research on capital structure as they make decisions about capital structure improvements. Future study can make comparisons in the influence of capital structure on the performance of Islamic *vs* conventional banks and evaluate if the effect is the same or differs. Difference in the determinants of capital structure between Islamic and conventional banks may also be explored. A qualitative approach might be adopted in future research as a contrast to the quantitative one used in this study.

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