

## **ARAB GCC BANKING INDUSTRY: WHAT DOES DETERMINE THE PROFITABILITY?**

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### **ABSTRACT**

*The objective of this paper is to investigate, explore and understand the determinants the profitability in the GCC countries. In essence, this paper is about the analysis of the relevance of the Structure-Conduct-Performance (SCP) and relative efficiency hypotheses in explaining the performance of the banking industry in the GCC. This paper indicates that the key factor behind high profitability was good management. Neither macro-economic nor market factors played a significant role in bank profitability. The evidence presented in this study clearly supports the view that market share, not concentration, is the principal structural determinant of profitability. Therefore, the paper proves empirically the relevance of the relative efficiency hypotheses and the irrelevance of the Structure-Conduct-Performance (SCP) hypotheses in explaining the performance of the banking industry in the GCC.*

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***Keywords: GCC banking, Profitability, Market structure, SCP hypothesis, efficiency hypotheses.***

### **I. INTRODUCTION**

The relationship between banking performance with market structure remains a much studied and controversial area of the analysis of firms in the industry. An examination of studies that have been completed on banking sector data provides evidence to support both the SCP paradigm and the relative efficiency hypothesis. It is therefore not clear which factors have greater weight in terms of determining bank performance.

A number of studies have been undertaken to investigate the determinants of banks profitability. Although a number of theories and hypotheses have been tested the factors affecting profitability in a number of developed countries, the literature lacks testing the determinants of profitability of commercial and Islamic banks in Arab Gulf Cooperation Council's (GCC) countries<sup>1</sup>.

The paper seeks to assess the relevance of the Structure-Conduct-Performance (SCP) and relative efficiency hypotheses in explaining the performance of the banking industry in the GCC. It is trying to analyze how bank characteristics, market structure and macro economic conditions affect the profitability of commercial and Islamic banks in GCC' banks for the period 1993-2002. Therefore, the objective of this study is to use pooled data to investigate, explore

and understand the market structure in the GCC countries and its usefulness to the banks managers in knowing the determinants of profitable banks, and to the policy makers in deciding about the banks merger.

The emphasis of the study is: First, to analyse the relationship between market structure and banks profitability. Second, is to test the size impact, economies of scale and bank size, on profitability. Third, to compare the Islamic banks with those of commercial banks in GCC in order to know if there are any meaningful differences either in terms of the significance or the correlation sign between the different factors and the profitability. Finally, to fill the gap of an absence of published studies dealing with the determinants of the profitability of GCC commercial and Islamic banks and also to complete the wide range of empirical studies in banking throughout the world.

This study indicates that the key factor behind high profitability was good management. Neither macro-economic nor market factors played a significant role in bank profitability. Finally, the evidence presented here clearly supports the view that market share, not concentration, is the principal structural determinant of profitability. Therefore, the paper proves empirically the relevance of the relative efficiency hypotheses and the irrelevance of the Structure-Conduct-Performance (SCP) hypotheses in explaining the performance of the banking industry in the GCC.

The structure of this paper is as the following. Section 2 gives a brief background about the GCC banking sector. Literature review is discussed in section 3. While Section 4 highlights the sources of data and the methodology of this study, Section 5 illustrates the empirical findings and section 6 concludes the paper.

## **II. BACKGROUND ABOUT GCC BANKING SECTOR**

The GCC countries consist of six Arab Gulf states: the Kingdom of Bahrain, the State of Kuwait, the Sultanate of Oman, the State of Qatar, the Kingdom of Saudi Arabia, and the United Arab Emirates (UAE). In the GCC countries, the banking industry is relatively young, with the oldest banks dating back to no earlier than 1950s. Although the majority are privately owned, the role of the public sector remains substantial. Whether through equity participation in several banks or through a number of governments owned specialized credit institutions that provide financing to public and private sector enterprises at subsidized rates, the public sector continues to have a prominent role in the banking industry of the GCC countries. Private sector ownership of financial institutions also tends to be concentrated in a few shareholders; a matter that reduces the threats (and benefits) of the market for corporate control.

While enormous potential exists within the GCC states for the region's financial institutions, more progress could be made. Considering the region's massive oil wealth, the combined Tier One capital of the GCC's Top 50 banks at \$31.5 billion is relatively small-amounting to 1.7% of the capital of the Top 1000 world banks. In banks comparison terms, the capital of all 50 GCC banks is considerably less than that of HSBC Holdings at \$35 billion. While GCC banks have been able to receive the highest rating of any bank in the Arab world or the emerging markets, the GCC has not been able to produce large powerhouse institutions that could be a force in the Arab or international banking arena. For various reasons, many of them political, the global

trend towards consolidation has passed by the Gulf. With World Trade Organisation (WTO) liberalisation planned banks need to rethink their competitive strategies for the future. Bahrain-based gulf Banking stressed in a recent report: “GCC banks need to strengthen their position through consolidation in order to compete effectively with international banks. The current fragmented banking sector will be unable to put up a good fight when markets do eventually open up” (The Banker, 2002). Therefore, the size of the banking sector in GCC countries, in absolute terms, is relatively small when compared to those of other developed countries.

### **III. LITERATURE REVIEW ON PERFORMANCE AND MARKET STRUCTURE RELATIONSHIP**

The relationship between market structure and performance is viewed from two competing hypothesis: structure-conduct performance hypothesis (SCP) and efficient-structure (ES) hypothesis.

#### **1. Structure-Performance Conduct (SCP) Hypothesis**

The classic early work in this area is by Bain (1951), who developed what has come to be called the Structure-Conduct-Performance (SCP) hypothesis. Bain postulated that, in a market with relatively few firms and barriers to entry, firms would, through collusion or price leadership achieve above normal profits. The structure-conduct-performance hypothesis may be summed up by stating markets characterized by a structure with relatively few firms and high barriers to entry will facilitate pricing conduct that is aimed at achieving joint profit maximization through collusion, price leadership, or other tacit pricing arrangements. This type of price conduct should in turn yield profits and prices that are greater than competitive norm. According to Rhoades (1977) structure-conduct-performance studies in commercial banking industry are of more recent origin than those for the industrial sector. The initial impetus for such studies may be traced to American Federal legislation in 1960 (Bank Merger Act) which was subsequently reinforced by additional legislation and Supreme Court decisions.

The structure-conduct-performance hypothesis states that the way a market is structured will influence the conduct of firms in the market and ultimately profit and price performance of firms in the market. The elements of market structure that are theorized to have the greatest influence on firms’ conduct are:

1. The number and size distribution of firms in the market,
2. Barriers to the entry of new firms (usually attributable to scale economies, capital requirements, or legal restrictions on entry), and
3. The growth of the market, where rapid growth can facilitate new entry and may lead to such uncertainty among rivals as to cause competitive conduct.

#### **2. The Efficiency Hypothesis**

The second hypothesis is the efficient-structure (ES) hypothesis that emerges from the criticism of the SCP hypothesis (Demsetz, 1973 and Peltzman, 1977). The efficiency hypothesis posits that the relationship between market structure and performance of any firm is defined by the efficiency of that firm. In cases where a firm is highly efficient relative to the competitors,

the firm can maximize profit by maintaining its current size and pricing strategy or by reducing prices and expanding its operations. If the firm chooses to expand its operations, it will eventually gain market share and thus, concentration will be a consequence of efficiency.

The efficient structure hypothesis states that only the efficiency of firms can explain the positive relationship between profits and concentration or profits and market share. The efficient-structure (ES) hypothesis states that those firms with superior management or production technologies have lower costs and therefore higher profits. By extension, those more efficient firms will gain greater market shares, which may result in a more concentrated market. In this context, efficiency influences the level of profit and market structure.

The structure-conduct performance hypothesis (SCP) has radically contrasting implications from the efficient-structure (ES) hypotheses not only the relationship with performance, but also for merger and antitrust policy. To the extent that the SCP hypothesis is correct, mergers may be motivated by desires to set prices that are less favourable to consumers, which would decrease total consumer plus producer surplus. To the extent that the ES hypothesis is correct, these mergers may be motivated by efficiency considerations that would increase total surplus. Thus, advocates of the SCP hypothesis tend to see antitrust enforcement as socially beneficial, while ES advocated tend to see policies that inhibit mergers as socially costly.

#### IV. DATA AND METHODOLOGY

##### 1. The Model

The literature of bank profitability generally comes to the conclusion that the appropriate functional form for testing is a linear function, although there are different opinions. Short (1979) investigated the question of functional form and concluded that ‘linear functions produced as good results as any other functional form’. Accordingly and in line with earlier studies in the literature of bank profitability, a regression analysis will be used to identify the underlying determinants of commercial and Islamic banks performance. Specifically, the study will use a linear regression model to analyze pooled cross-section time series data. The regression analysis will start by estimating the following linear equation:

$$P_{ijt} = \alpha_0 + \alpha_i B_{ijt} + \beta_j X_{jt} + \gamma_i D_i + \varepsilon_{ijt} \quad (1)$$

Where,  $P_{ijt}$  represents the measure of performance for bank  $i$  in country  $j$  at time  $t$ ;  $B_{ijt}$  are bank variables for bank  $i$  in country  $j$  at time  $t$ ;  $X_{jt}$  are country variables for country  $j$  at time  $t$ ;  $D_i$  is a dummy variable that = 1 for Islamic banks, 0 otherwise. Further,  $\alpha_0$  is a constant, and  $\alpha_i$ ,  $\beta_j$  and  $\gamma_i$  are coefficients, while  $\varepsilon_{ijt}$  is an error term.

##### 2. The Pooled Least Squares and the LSDV (Fixed Effect) Models

We have assumed in our model that there is a common intercept across the GCC commercial banks. In another words, there isn't any cross sectional differences, which are not accounted for by the variables included in equation 1. Furthermore, the implicit assumption in our model is that the effect of the cross sectional differences are limited to the intercept term<sup>2</sup>. Further, in order to test the validity of the above assumption our restricted model, equation 1, was tested for cross-sectional differences by adding 5 dummy variables as follows:

$$P_{ijt} = \alpha_0 + \alpha_1 C_{2i} + \alpha_2 C_{3i} + \alpha_3 C_{4i} + \alpha_4 C_{5i} + \alpha_5 C_{6i} + \alpha_i B_{ijt} + \beta_j X_{jt} + \gamma_i D_i + \varepsilon_{ijt} \quad (2)$$

Where,  $C_{2i} = 1$  if the observation belongs to Kuwait, 0 otherwise;  $C_{3i} = 1$  if the observation belongs to Oman, 0 otherwise;  $C_{4i} = 1$  if the observation belongs to Qatar, 0 otherwise  $C_{5i} = 1$  if the observation belongs to Saudi Arabia, 0 otherwise  $C_{6i} = 1$  if the observation belongs to UAE, 0 otherwise. We did not include a six dummy variable for Bahrain in order to avoid falling into the “dummy-variable trap”. Equation number two represents the unrestricted model in our test and it is called as the least-square dummy variable (LSDV) model as it uses dummy variables in order to estimates the cross-sectional differences<sup>3</sup>.

The decision on which model is better, the restricted model (equation 1) or the unrestricted model (equation 2), was based on statistical testing. It was required to compare the error sum of the squares of the restricted model and the unrestricted model by employing the formal restricted F test. The formal equation of F value is:

$$F = \frac{(R_{UR}^2 - R_R^2) / m}{(1 - R_{UR}^2) / (n - k)} \quad (3)$$

Where:

$R_{UR}^2$  = the sum squared value of the unrestricted model (equation 2),

$R_R^2$  = the sum squared value of the restricted model (equation 1),

m = the number of linear restrictions (five in our example)<sup>4</sup>,

k = the number of parameters in the unrestricted regression,

n = the number of observations.

During the F-test, our hypothesis for the cross-sectional differences is as follows:

$H_0: \alpha_1 = \alpha_2 = \alpha_3 = \alpha_4 = \alpha_5 = 0$  which means that all the  $\alpha$ 's are simultaneously zero<sup>5</sup> :

$H_1$  Not all the's are simultaneously zero.

The F-test is conducted for both the profitability measures of study, ROE and ROA.

Therefore, the F ratios for  $F_{ROA}$  and  $F_{ROE}$  are

$$F_{ROA} = [(0.392803 - 0.381338) / 5] / [(1 - 0.392803) / (484 - 17)] = 1.75$$

$$F_{ROE} = [(0.167498 - 0.158527) / 5] / [(1 - 0.167498) / (484 - 17)] = 1.01$$

Which have the F distribution with 5 and 467 degree of freedom. At 5%, clearly these F values are statistically insignificant [ $F_{0.05}(5,467) = 2.21$ ]. The results of the test are presented in table I.

**Table I**  
**Results of Statistical test for Cross-Sectional Differences**

Dependant variable	$R_{UR}^2$	$R_R^2$	F-statistic	Critical F-value at 5% level*	Conclusion
ROA	0.392803	0.381338	1.75	≈ 2.21	Accept $H_0$
ROE	0.167498	0.158527	1.01	2.21	Accept

\*We have 5 degrees of freedom (df) in the numerator and 467 df in the denominator,  $F_{0.05}(5,466)$ .

According to the statistical results in the above table, and since the observed F values (1.75 and 1.01) do not exceed the critical value (2.21); the F value is statistically insignificant at five percent. Therefore, there is no reason to reject the null hypothesis, which implies that the appropriate performance model is the constrained (restricted) regression, equation 1. Accordingly, the researcher has continued the study with the pooled least squares model instead of the LSDV model (fixed effect model).

### **3. Panel Data**

Panel data refers to ‘the pooling of observations on a cross-section of households, countries, firms, etc. over several time periods’ (Baltagi, 2001, p. 1). Thus, this study’s panel data combines both time series (10 years) and cross-sections (52 banks) together.

Panel data sets for economic research possess several major advantages over conventional cross-sectional or time-series data sets. Panel data usually give the researcher a large number of data points, increasing the degree of freedom and reducing the collinearity among explanatory variables hence improving the efficiency of econometric estimates. More importantly, longitudinal data allow a researcher to analyse a number of important economic questions that cannot be addressed using cross-sectional or time-series data sets (Hsiao, 2003, p.3).

One of the major limitations for this study is the small number of banks: the number with all data available ranged from 5 banks in Oman (50 observations) to 18 banks in UAE (144 observations). Therefore, it is not possible to run country own regression on a yearly or time-series basis. Besides, the study sample consists of 7 Islamic banks only out of the total sample of 52 banks, thus, it is not possible to run own regression for Islamic banks. To overcome this limitation and to ensure a sufficient number of observations for robust result and reasonable conclusion, the researcher uses a pooled cross-sectional time-series regression approach for the whole GCC banks (484 observations).

### **4. Data Collection**

The data used in this study are compiled from banks’ annual reports and from the Fitch-IBCA Ltd Bankscope CD Rom. This study covers 52 banks privately held and domestically owned that are fully licensed commercial. The distribution of these banks as following: 6 banks in Bahrain, 7 banks in Kuwait, 5 banks in Oman, 6 banks in Qatar, 10 banks in Saudi Arabia and 18 banks in UAE. The period sample covers from 1993-2002<sup>6</sup>. The final sample consists of 484 bank-year observations. The sample observation of 60 in Bahrain, 70 in Kuwait, 50 in Oman, 60 in Qatar, 100 in Saudi Arabia and 144 observations in UAE.

For an unbiased analysis, banks are expected to be relatively homogenous, providing similar services and using similar resources. Because of their small market share in the sector as well as quite different technology, structure and goal, this study excludes development and investment banks and instead concentrates on commercial and Islamic banks due to the similarities between them. In this study sample, the number of domestically owned Islamic banks in each country is as follows: 2 in Bahrain, 1 in Kuwait, 2 in Qatar, 1 in Saudi Arabia, and 1 in UAE.

## **5. Measures of Bank Profitability**

Two measures of profitability are used in this study namely ROA and ROE. ROA reflects management's ability to utilize the bank's financial and real investment resources to generate profits, specifically, it measures the profit earned per currency of assets. This ratio depends mainly on bank's policy as well as some external factors related to the economy and government regulations. ROE reflects the effectiveness of management in utilizing shareholders funds. The choice between before and after tax net income is not expected to make a significant impact on the analysis since all banks are assumed to be subjected to the same corporation tax. Therefore, the net income after tax is considered in the study.

## **6. Determinants of Bank Profitability**

Several control variables that take into account firm-specific, market-specific and local economic characteristics are theoretically justified and included in empirical studies of the banking industry. Therefore, the following control variables are categorised into the above three factors.

### *(i) Local Economic Conditions Factors*

According to Demircuc-Kunt and Huizinga (1999) per capita GDP is a general index of economic development, and it thus reflects differences in banking technology, the mix of banking opportunities, and any aspects of banking regulations omitted from the regression. This paper uses per capita income as a proxy for the local economic conditions. The authors expect a positive insignificant relationship.

### *(ii) Market Specific Factors*

Market specific factors include: Market structure (concentration), market growth and Economies of scale and bank size.

### **Concentration**

Results from empirical studies on the performance of concentration in banking are mixed. Molyneux and Forbes (1995), Pilloff and Rhoades (2002), and Chirwa (2003) find evidences of a positive relationship between concentration and profitability. On the other hand, Kwast and Rose (1982), Federal Reserve Bank of Atlanta (1983) and Goldberg & Rai (1996) find no significant statistical relationship between concentration and profitability. Although Rhoades (1982) concluded that most of the previous studies found a positive relationship, Gilbert (1984), in a survey article, finds only 27 out of 56 studies to have produced the expected relationship. Where the market share variable is included in the model, the concentration ratio fares poorly and the results tend to support the efficient market hypothesis (Evanoff and Fortier, 1988; Smirlock, 1985). This study uses the three highest banks deposit share of the market (CR3DEP) as a measure of the market concentration. It is expected that concentration has a positive insignificant relationship with profitability.

### **Market Growth**

Civelek and Al-Alami (1991) find that market growth has produced plausible results and appeared to be a relatively significant determinant in the bank profitability equation. As part of a bivariate analysis of the interactions between bank profitability and growth indicators, Goddard *et al.* (2004a) find evidence of significant persistence in bank profitability. Pilloff and Rhoades (2002) in both bivariate and multivariate regression deposit growth rate positively related and statistically significant to profitability and may provide additional information on the level of competition in a market. This study uses the change in annual total deposits to measure market growth. It is expected that the profitability measure is associated positively with market growth.

### **Economies of Scale and Bank Size**

The bank size variable takes into account differences brought about by size such as economies of scale. This study uses the bank total assets as a measure of the bank size. The expectation is that larger banks compared with smaller banks' can reap economies of scale and have greater diversification opportunities. However, according to Evanoff and Fortier (1988) and Smirlock (1985) any positive influence on profits from economies of scale may be partially offset by greater ability to diversify assets resulting in a lower risk and a lower required return. Therefore, the impact of bank size is indeterminate. The empirical results on the performance of the bank size variable are mixed, with conclusions of no economies of scale (Kwast and Rose 1982; Civelek and Al-Alami 1991; Molyneux and Forbes, 1995; Ben Naceur and Goaid 2001) and others having significant positive (Evanoff and Fortier, 1988; Lloyd-Williams and Molyneux 1994) and negative (Smirlock, 1985; Goldenberg and Rai 1996; Chirwa 2003) relationships. According to Goddard, J. *et al.* (2004b) a positive relationship between size and profit could be explained by several factors. Large banks may benefit from scale or scope economies. In addition, large banks may be able to exert market power through stronger brand image or implicit regulatory (too big to fail) protection. It is expected that bigger bank size has a negative impact on profitability.

#### *(iii) Bank Specific Factors*

Haslam (1968) in a two year study balance sheet and income statement ratios were computed for all the member banks of the United States Federal Reserve System, the result indicated that (a) returns to scale did not operate over the entire size spectrum of bank and (b) most balance sheet and income statement ratios were significantly related to profitability, particularly capital ratios, interest paid and received and salaries and wages. In summary, Haslam states that a guide for improved management should first emphasize expense management, then funds source management and, lastly, funds use management.

### **Risk Management**

Banks are experiencing various sources of risk including credit of default risk, investment risk, liquidity risk, cost of funds risk, financial risk, regulatory risk and fraud and fiduciary risk. The stability of the net interest margin of a bank is highly dependent upon these sources of risk and use of risk management techniques.



As Chirwa (2003), this study uses the capital to asset ratio (CAPAST) and loan to asset ratio (LOANAST) to account for differences in levels of risk between firms.

### **Cost of Funds**

The bank's relative cost of funds is captured by the ratio of demand deposits to total deposits (DDTDEP). Demand deposits are a relatively inexpensive source of funds. Empirical studies (Smirlock, 1985; Evanoff and Fortier, 1988) find that the demand deposit to total deposits is significant and positively related to profitability measures. These results confirm the argument that demand deposits are a cheaper source of funds for the banking industry. The authors expect that the higher the ratio of demand deposits to total deposits, the higher the level of profitability.

### **Efficiency**

The main variable in the efficient market hypothesis is the efficiency of firms that can be proxy by market share (MS). Berger (1995) and Smirlock (1985) find that market share is positively related to profitability. On the other hand, Lloyd-Williams and Molyneux (1994) find that market share variable yields a negative coefficient and is not statistically significant. However, the authors expect a positive relationship between market share and profitability. Larger market shares are a result of efficiency that in turn leads to higher profitability.

### **Operating Costs Management**

Does spending more bring more revenue and eventually have more profits? Federal Reserve Bank of Atlanta (1983) emphasizes on the importance of internal bank management in the determination of bank profits. Its central finding was that profitable banks are those banks which have been able to reduce costs without sacrificing revenue. It is expected that the profitability measure is associated negatively with operating cost.

### **Geographic Diversification**

Generally, large banking firms are the most diversified geographically and is more leveraged than small banking firms. Bauer and Cromwell (1989) find that the number of banks is not statistically significant, but the number of branches is. More branches could reflect more of a retail orientation of the banks. Since this paper is trying to study the determinants of profitability for the six countries, number of branches is weighted by the number of population. It is expected that the profitability measure is associated positively with number of population per branch. (In other words, the number of branches is negatively related to profitability).

### **Specialization**

One of the objectives of this study is to compare the Islamic banks with those of commercial banks in GCC in order to know if there are any meaningful differences either in terms of the significance or the correlation signs between the different factors and the profitability. This paper uses a dummy variable (DUMMY) to represent the difference between the two types of banks.

Since the main features of Islamic banking is the absence of an explicit interest rate mechanism. It is expected that Islamic banks have a negative effect to the profitability.

**Investment Diversification**

Empirical results show neutral, negative or positive relationship between investment diversification and profitability. Klein and Saldenberg (1997) who find that diversified banks were less profitable on average. Goddard, J. (2004b) finds that the relationship between the importance of off-balance-sheet business in a bank’s portfolio and profitability is positive for the UK, but either neutral or negative elsewhere. On the other hand, a positive relation as Vander Venet (1998) finds that financial conglomerates were more efficient on average than their specialized competitors. This paper uses off balance sheet (OBS) activities and the authors expect a positive relationship between profitability and investment diversification.

**V. EMPIRICAL RESULTS**

Before discussing the regression results, it is imperative to know the relative size of total assets of banks as well as the growth of banks’ branches in each of the six countries. Figure I shows the relative size of the total assets in each of the six countries. In 2002, the total assets of 52 banks (the sample of this paper) is US\$ Billion 283.2. Saudi Arabian banks comes first with 47% of the total assets; UAE’s banks 22%, Kuwait’s banks 19%, Qatar, Bahrain and Oman’s banks are 5%, 3% and 3% respectively.

**Figure I: Relative Size of the Total Assets**

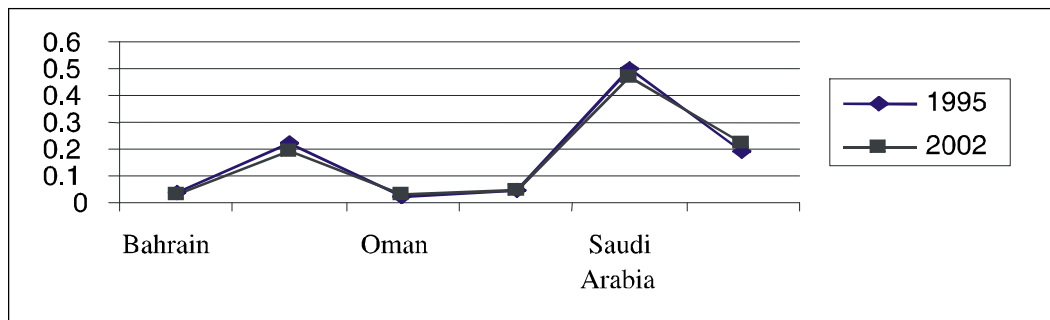


Table II shows the growth in number of branches for the period from 1995 to 2002. Even though Saudi Arabia comes at the first place in the number of the branching network, UAE, Oman, Kuwait, Bahrain and Qatar come in the following ranking respectively. However, in terms of the percentage growth of the branches over this period, Qatar comes with highest

**Table II  
Growth of Banks’ Branches in the GCC Markets**

Year	Bahrain	%	Kuwait	%	Oman	%	Qatar	%	Saudi	%	UAE	%
1995	61		123		181		41		1116		255	
2002	77	26%	176	43%	296	64%	71	73%	1181	6%	333	31%

growth rate of 73%; Oman comes at the second place with 64% followed by Kuwait with 43%. UAE, Bahrain and Saudi Arabia come at the fourth, fifth and sixth with rate of growth of 31%, 26% and 6% respectively.

### **1. Market Structure and Banks Profitability in GCC**

GCC banking industries are characterised by high market concentration. In 2002, the three largest banks in Oman and in Qatar accounted for about 81 per cent of total commercial banking sector deposits, whereas in the least concentrated market, the UAE, the top three held 44 per cent share of banking sector deposits. The Kuwaiti banking sector was also highly concentrated, with a three-firm concentration ratio of 62 per cent. Saudi Arabia's three largest banks accounted for 51 per cent of the domestic banking sector. The three largest banks in and Bahrain accounted for 79 per cent. Overall, the high degree of concentration in GCC banking markets suggests that the strict licensing rules and restrictions on foreign bank entry have helped create these market structures. It can be seen that the UAE has the lowest level of concentration and this is almost a consequence of laxity in restrictions on the licensing of domestic and foreign banks that increased the number of such institutions, especially in the late 1970s and 1980s.

In order to test the relationship between market structure and profitability, the author first calculated the return on assets ROA and return on equity ROE and then calculated the market concentration of GCC banking industry during the years 1995 and 2002 using the most frequently applied measures of concentration k-bank concentration ratio (CR<sub>k</sub>) and Herfindahl-Hirschman Index (HHI). Table III shows that there is no direct relationship between ROA and ROE and market concentration. Therefore, market concentration is not the sole determinant of profitability in the GCC' banks. The possibility of concentration having an impact on other variables should be investigated. Then, the next step is to use the regression analysis to identify the underlying determinants of performance of commercial as well as Islamic banks. Specifically, the study uses a linear regression model to analyze pooled cross-section time series data in order to examine the profitability determinants of the sampled banks.

### **2. Regression Results**

The regression is estimated using pooled cross-sectional time-series regression approach for the whole GCC banks (484 observations). The results for the pooled GCC estimates for ROA and ROE reported in table (IV).

First, local economic conditions factor, which is represented by per capita GDP, shows positive relationship with ROA and ROE. However, this relationship is positively significant at 10% level for ROA and insignificant for ROE.

Second, market specific factors show that both concentration (CR3DEP) and market share (MS) are found to be positive, but only MS is statistically significant in the ROA and ROE regressions at 5% and 10% respectively. It still remains likely that market structure will have an impact on performance. However, the bank's efficiency has much more impact in making a better performance.

Thus, the significant positive relationship between market share and profitability proves empirically the relevance of the relative efficiency hypothesis and the irrelevance of the Structure-

**Table III**  
**Market Concentration and Banks Profitability in GCC**

<i>Country</i>		<i>1995</i>	<i>2002</i>
Bahrain	ROA	0.02	0.01
	ROE	0.12	0.08
	CR2	0.72	0.66
	CR3	0.83	0.79
	HHI	2738	2351
Kuwait	ROA	0.01	0.01
	ROE	0.14	0.15
	CR2	0.48	0.49
	CR3	0.61	0.62
	HHI	1983	1897
Oman	ROA	0.02	0.02
	ROE	0.21	0.15
	CR2	0.51	0.66
	CR3	0.77	0.81
	HHI	2258	2712
Qatar	ROA	0.01	0.02
	ROE	0.13	0.22
	CR2	0.73	0.7
	CR3	0.81	0.81
	HHI	3995	3565
Saudi Arabia	ROA	0.015	0.018
	ROE	0.146	0.202
	CR2	0.38	0.38
	CR3	0.54	0.51
	HHI	1468	1298
UAE	ROA	0.02	0.02
	ROE	0.11	0.13
	CR2	0.39	0.34
	CR3	0.53	0.44
	HHI	1299	1064

Conduct-Performance (SCP) hypothesis in explaining the performance of the banking industry in the GCC's banks.

It can be seen also that the proxy for bank size has a negative insignificant relationship for both ROA and ROE implying that bigger size banks may lead to a negative impact on profitability.

Third, the remaining bank specific factors such as risk management represented by (CAPAST and LOANAST), geographic diversification (POPBRNCH), and investment diversification (OBS) in ROA regression are positively significant at 1% level of significance, while DDTTDEP is having a positive insignificant relationship.

In addition, it can be noticed that the proxy for operating costs management TEXPTA has a significant negative relationship at 1% for both ROA and ROE, indicating that more spending does not bring more revenue and eventually more profits. It can be seen also that specialization of a bank has a negative relationship with both ROA and ROE, with a significant negative relationship with ROA at 5% level. This relationship indicates that Islamic banks have a negative impact on profitability measures out of the whole pooled sample.

**Table IV**  
**Restricted Empirical Results of the Determinants of ROA and ROE for GCC Banks**

<i>Variable</i>	<i>ROA</i>	<i>ROE</i>
Intercept	-0.009227 (-1.218822)	0.089861 (0.705940)
GDPPC	2.87E-07 (1.845072)*	4.04E-06 (1.545028)
CR3DEP	3.45E-05 (0.941852)	0.000642 (1.040903)
MS	0.017086 (2.420607)**	0.221904 (1.869668)*
DEPGRW	0.008582 (0.981708)	0.047740 (0.324786)
ASSET	-2.39E-07 (-1.252311)	-4.44E-06 (-1.385462)
CAPAST	0.128140 (10.35695)***	0.079340 (0.381378)
LOANAST	0.018434 (4.479895)***	0.165173 (2.387289)**
DDTTDP	0.004359 (1.236665)	0.076913 (1.297612)
TEXPTA	-0.418996 (-10.80120)***	-5.452312 (-8.359039)***
POPBRNCH	1.02E-06 (2.812810)***	7.95E-06 (1.308488)
SPECIALIZ	-0.005919 (-2.520707)**	-0.016414 (-0.415718)
OBS	0.005366 (2.892609)***	0.075187 (2.410346)**
Adj. R <sup>2</sup>	0.37	0.14
F-statistic	24.03930	7.347302
Prob (F-stat)	0.000000	0.000000

The values in the parentheses are the t-statistics, \*\*\* Significant at 1%, \*\* significant at 5% and \* significant at 10%.

All in all, regressions for ROA and ROE show that that a bank's internal factors are the primary determinants of profitability.

## VI. CONCLUSION

This paper is trying to analyze how bank characteristics, market structure and macro economic conditions affect the profitability of commercial and Islamic banks in GCC' banks. Bank characteristics explain a substantial part of the bank net profitability. Risk factors, efficiency of the bank, overhead expenses management, geographic diversification, specialization and investment diversification are elements of bank specific factors which make the different on the level of profitability. The six countries pooled regression asserts a positive relationship between per capita income and banks' profits. Concentration, market growth and bank size, the three elements of market factors, have no effect in profitability.

Overall, effective management remains the most important element in determining banks' profitability, overshadowing either macro-economic or market factors. The evidence presented here clearly supports the view that market share, not concentration, is the principal structural determinant of profitability. Therefore, the paper proves empirically the relevance of the relative efficiency hypothesis and the irrelevance of the Structure-Conduct-Performance (SCP) hypothesis in explaining the performance of the banking industry in the GCC.

### Notes

1. Hassan and Bashir (2005) examine the performance indicators of Islamic banks worldwide with lack of commercial banks.
2. Such assumption is necessary as according to Pindyck and Roubinfield (1991) that each separate cross-sectional regression would require a distinct model and the pooling would be wrong if the slopes were to vary over time and cross sectional units.
3. Equation number 2 is also known as the fixed effect model (FEM) due to the fact that "although the intercepts may differ across individuals (here the six countries), each individuals' intercept does not vary over time; that is, it is time invariant" (Gujarati 2003, fourth edition).
4. The value of  $m$  in the present case is 5, since there are five restrictions involved:  $\alpha_1 = 0$ ,  $\alpha_2 = 0$ ,  $\alpha_3 = 0$ ,  $\alpha_4 = 0$ ,  $\alpha_5 = 0$ .
5.  $H_0$  implies that Kuwait, Oman, Qatar, Saudi Arabia and United Arab Emirates are simultaneously unrelated determinants of profitability.
6. Due to the difficulty in obtaining data, the period sample for UAE banks covers from 1995-2002.

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