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COMPETITION IN THE KUWAITI BANKING SECTOR

Key Words

Competition; The structural approach; The Non-Structural Approach; Structure Conduct-Performance; The Efficient Structure Hypothesis; Contestable Markets theory; Herfindahl-Hirschman Index; Panzar; and Rosse model.

Abstract

This paper investigates the degree of competition in the Kuwaiti banking sector, using both the Herfindahl-Hirschman Index (HHI) and Panzar and Rosse (PR) approach. A pooled annual data for seven commercial banks covering the period from 1993 to 2005 was used to estimate a six variables model by seemingly unrelated regression technique. The results indicate that the sector is highly concentrated according to HHI, and operate under monopolistic competition according to the PR approach. These results are in line with the empirical findings in other countries.

Introduction

Competition in the banking sector in particular, and in the financial sector in general, is an important issue for several reasons. The degree of competition has a direct effect on the efficiency of the production of financial services, the quality of financial products, the degree of innovation in the sector, and the stability of the sector.

It has also been shown, theoretically as well as empirically, that the degree of competition in the financial sector can affect the access of firms

and households to financial services and external financing, and ultimately affecting the overall economic growth. The stability and the degree of competition in the banking system will in turn depend on entry barriers, including those on foreign ownership, the severity of activity restrictions, and the importance of other types of financial institutions such as finance companies, insurance companies, and capital markets.

Although large volumes of empirical studies have been conducted on

both developed and developing countries, few studies have been conducted in the GCC banks. The lack of detailed data has been the main obstacle, however, since the early 90's such data has become available, facilitating research on this important issue. Therefore, this study attempts to fill this gap by testing the degree of competition in the Kuwaiti banking sector as one of the leading sectors in the region.

The remainder of this study is organized as follows. The next section reviews related literature, the third section summarizes previous studies. The forth section briefly reviews the banking sector in Kuwait. Empirical analyses is presented in section four, and finally, the paper ends with a conclusion.

Literature Review

There is a lot of literature on the measurement of competition in the banking sector. However, this field is not without debate at both theoretical and empirical levels. Currently, there are two major approaches that may be used to evaluate the level of market power within a particular sector. These approaches differ according to whether the underlying model of the sector is structural or non-structural. The structural approach refers to the Structure Conduct- Performance (SCP) and the Efficient Structure Hy-

pothesis (ESH), while the non-structural approach refers to Contestable Markets Theory (CMT).

The SCP, proposed by Bain (1951) assumes that increased market power yields monopoly profits. It suggests that only banks with large market shares are able to exercise market power and earn non-competitive profits. SCP attempts to infer the degree of competition in an industry from its structural features by implying that concentration in the banking industry can generate market power, allowing banks to earn monopolistic profits and charging higher loan rates. This suggests that there is an inverse relationship between concentration and consumer welfare.

On the other hand, ESH states that the positive relationship between banking profitability and market concentration is not a result of market power rather greater efficiency of banks with larger market share (Bourke, 1989). According to ESH, the superior performance of the market leaders whether by adopting better technology or improving managerial skills has enhanced the market structure. In turn, it suggests that higher efficiency produces both higher concentration, and greater profitability. Furthermore, ESH can pursue two different strategies; either maximizing the profits by maintaining the present

levels of prices and firm size, or by reducing prices and expanding firm size (Lloyd-Williams *et al.*, 1994).

The structural approach uses concentration ratios to form hypotheses about the relationship between concentration and market structure, the most frequently used is the Herfindahl-Hirschman Index (HHI) (Hirschman, 1964). The index is calculated as the sum of squares of the percentages of the market shares held by the firms in a market using the following formula:

$$HHI = \sum_{n=1}^k MS_n^2 \quad (1)$$

Where, MS is the market share of each bank based on total assets or deposits. Now, if there is a monopoly (one firm in the market), the index equals 10,000. If there is perfect competition (with an infinite number of firms with near-zero market share each), the index is approximately zero. In general, an index value of less than 1,000 indicates an un-concentrated market, while a value between 1,000 and 1,800 indicates a moderate concentration, and values above 1,800 indicates high concentration. However, the relationship between concentration and market structure has been an area of considerable debate among the structuralists.

The inability of the structuralists to clearly define the relationship between concentration and market power has prompted the search for non-structural models by the "New Empirical Industrial Organization" (NEIO), which do not rely on explicit information about market structure in order to determine the level of competition (Bikker and Haaf, 2002).

Klein (1971), Baumol (1982), and Baumol *et al.*, (1982) were the first to develop a formal theory of contestable markets (CMT). The CMT assumes that a concentrated industry can behave competitively if there are no or few barriers for new entrants to the market. It assumes that firms can enter or leave rapidly any market without losing their capital. The feature of contestable markets implies that a concentrated banking market can be effectively competitive even if it is dominated by a handful of large banks. In other words, it is noticeable that the financial liberalization is likely to make the banking industry more contestable or open to competition.

The most widely used non-structural approach to assess competition in the banking sector is the Panzar and Rosse (PR) model, developed by Rosse and Panzar (1977), and expanded by Panzar and Rosse (1982), and Panzar and Rosse (1987). This

methodology uses bank-level data, instead of aggregate bank data, to investigate the extent to which a change in factor input prices, is reflected in revenues earned by a specific bank. In microeconomic theory, an increase in inputs costs will reduce revenues for a firm enjoying a monopolistic power, but proportionately increase that of a firm in a perfectly competitive market. Therefore, it is expected that under perfect competition the H-statistic will equal to one, while under a monopoly the statistic will have a zero or negative value, and under monopolistic competition, the value of the H-statistic will be between zero and one.

The model assumes that banks produce one composite output represented by loans and other interest bearing assets, accordingly, it relates interest revenue as the dependent variable to labor cost, capital cost, and deposit cost. The sum of the estimated value of the coefficients (elasticities) of these three cost measures is the "H-statistic".

Previous Studies

A number of papers have applied the PR methodology to assess the degree of competition in the banking system. In general, these studies, depending on the data availability, have used interest income or the ratio of

interest income or total revenue to total assets as the dependent variable. While for the inputs prices they used the ratio of interest expenses to total deposits as a proxy for the price of deposits, the ratio of personal expenses to the number of employees or total assets as a proxy for labor cost, and the ratio of non-labor operating expenses to fixed assets or total assets as a proxy for the cost of capital. Other control variables are also added to the model. The most common of which are equity ratio, loan ratio, and total assets. The vast majority of these studies are multi-country cross-sectional, with a very limited number of single country studies. The general conclusion of these studies is that the banking sector is operating under monopolistic competition regardless of the degree of development of the economy.

The following is a brief review of some of these studies:

Shaffer (1982) was one of the first to apply the PR model to banks. She estimated it for New York banks using data for 1979 and found monopolistic competition. Nathan and Neave (1989) study Canadian banks and found perfect competition for 1982 and monopolistic competition for 1983-84. For Japan, Molyneux, Thornton and Lloyd-Williams (1996) found evidence of a monopolistic si-

tuation in 1986-1988. Studies on European banking systems, including Molyneux *et al.* (1994), Vesala (1995), Molyneux *et al.* (1996), Coccorese (1998), Bikker and Groeneveld (2000), Bikker and Haaf (2002), De Bandt and Davis (2000), and Hempel (2002), all found evidence of monopolistic competition.

Tests on the competitiveness of the banking system of developing countries and transition economies using these models is still limited. Philippatos and Yildirim (2002) investigate 14 Central and Eastern European banking systems using bank-level data and the PR-methodology. They find, except for Latvia, Macedonia, and Lithuania, that these banking system can neither be characterized as perfectly competitive or monopolistic. Overall, they conclude that large banks in transition economies operate in a relatively more competitive environment compared to small banks. Gelos and Roldos (2002), also found that monopolistic competition prevail in the banking sector for a number of emerging market economies; Levy and Micco (2003) studies on Latin American countries, and Belaisch (2003) studies on Brazil, all came to the same conclusion. Prasad and Ghosh (2005) concluded that the Indian banking sector is operating under the condition of monopolistic competition, Buchs and Mathisen (2005)

found that the banking sector in Ghana is characterized by monopolistic competition, and so do Hauner and Peiris (2005) on Uganda, and Samer and Vacher (2007) for the union of central African countries (CEMAC).

In the case of Arab countries, Murjan and Ruza (2002) examined competition in the banking sector of nine countries including the six Gulf Cooperation Council States (Saudi Arabia, Kuwait, Bahrain, Qatar, Oman, and United Arab Emirates) in addition to Jordan, Egypt, and Tunisia for the period 1993-1997. They found that banking sector in these countries have been operating under conditions of monopolistic competition.

An Overview of Kuwaiti Banks

The Kuwaiti banking sector is considered as a closed system since Law 32 of 1968 prohibits the operation of foreign banks in Kuwait except those with a Kuwaiti (government or financial institutions) partnership. Therefore, the banking sector consists of national banks, except for the Bank of Bahrain and Kuwait branch, which is a Kuwaiti-Bahraini joint venture. However, in 2004 the national assembly passed an amendment to the previous law allowing branches of foreign banks to operate in the domestic

Table 1
Main Indicators of the Banking Sector

Bank	Date of Est.	Total Assets (Mil.KD)		Total Deposits (Mil.KD)		Net Profits (Mil.KD)		# of Branches	
		1993	2005	1993	2005	1993	2005	1993	2005
A	1967	1030	2007	895	1585	6.8	47	11	19
B	1971	781	1612	692	1296	3.8	39.9	11	22
BB	1975	771	1189	616	1527	5.2	42.4	11	20
C	1960	1076	2342	918	1732	11	81	19	44
G	1960	1249	2648	1061	2100	17	85	16	35
K	1973	329	765	237	567	4	9	2	6
N	1952	3267	6200	3809	5288	49	205	40	62
KFH	1977	1156	4681	992	3471	39	129	20	38
BOB	2004	-	328	-	199	-	6.8	-	1

market with only one branch for each foreign bank.

The sector as of 2005 has seven national traditional banks, two national Islamic banks, two specialized banks and a branch for the Bank of Bahrain and Kuwait. The two Islamic banks are Kuwait Finance House (KFH) established in 1977, and Bubyah Bank (BOB) established in 2004. The specialized banks are the government owned Credit and Savings Bank established in 1965 to finance government housing projects, and the Industrial Bank established in 1973 as a joint venture between the government and the private sector.

The seven national traditional banks, the subject of this study, includes:

National Bank of Kuwait (N), Commercial Bank of Kuwait(C), Gulf

Bank (G), Al-Ahli Bank of Kuwait (A), Bank of Kuwait and the Middle East (B), Burgan Bank (BB), and Kuwait Real Estate Bank (K). The first bank was established in 1952, while the last was established in 1975. The figures in table(1), show noticeable differences among the group members in assets, profits, and branches, where the older banks have the highest in the three categories reflecting experience and maturity, where National Bank of Kuwait (N) is considered to be the leading commercial bank in Kuwait. The three oldest and largest banks, (i.e 43% of the group) have about 66% of total assets and deposits of the sector in both 1993 and 2005; this is a preliminary sign of concentration and probable monopolistic competition in the sector. However, the inclusion of Isla-

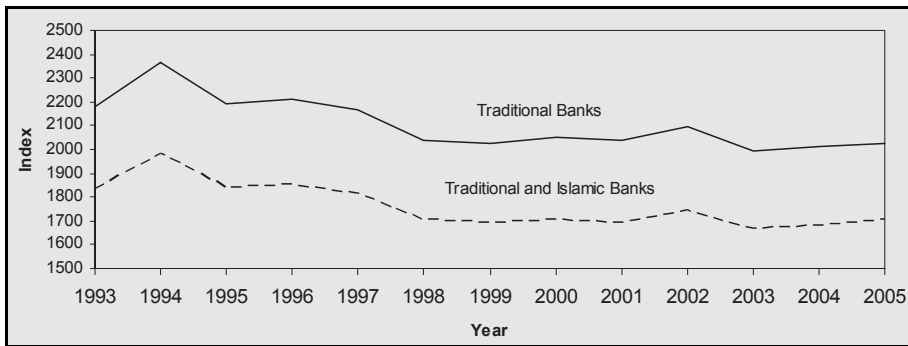


Figure 1: The Development of HHI

mic banks reduced the market share of these largest banks group to 51%.

Empirical Analysis

The section has two sub-sections, the first is a calculation of the Herfindahl-Hirschman Index (HHI), and the second is an estimation of the PR H-statistic.

For this purpose, annual data is used as the sample for seven national traditional banks covering the period from 1993 to 2005. The data was obtained from the Institute of Banking Studies' financial operating report. The choice of this period was in accordance with the availability of required data, which was not completely available before 1993.

We first start with the Herfindahl-Hirschman Index (HHI) to check the degree of concentration in the Kuwaiti banking sector. The index, as shown in figure (1), has been declining over time indicating an increase in competition,

nevertheless, the value of the index, has become relatively constant since 1998 till around 2000, which indicates that the sector suffers from a high degree of concentration. However, the inclusion of Islamic banks reduces the index by about 300 as the index declined to about 1,700 indicating that the introduction of Islamic banks increases competition as concentration declined to moderate concentration.

Now, turning to the estimation of the PR H-statistic, the following commonly used model is estimated in order to assess the degree of bank competition:

$$IIA = \alpha_0 + \alpha_1 (IED) + \alpha_2 (WFE) + \alpha_3 (OOA) + \alpha_4 (EQA) + \alpha_5 (LT) + \alpha_6 (TA) \quad (2)$$

Where:

IIA = The ratio of interest revenue to total assets.

IED = The ratio of total interest expenses to total deposits

Table 2
The Results

Dependent Variable: IIA				
Method: Seemingly Unrelated Regression				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.725778	0.284116	-2.554513	0.0127
IED	0.650926	0.013035	49.93660	0.0000
WFE	-0.113836	0.034492	-3.300391	0.0015
OOA	-0.047969	0.009621	-4.985886	0.0000
EQA	0.530655	0.040830	12.99680	0.0000
LT	0.059168	0.011323	5.225661	0.0000
TA	0.320453	0.019100	16.77796	0.0000
R-squared = 0.75		PR H-statistic = 0.49		

and borrowings (A proxy for unit price of funds),

WFE = The ratio of personnel expense to the total number of employees (A proxy for unit price of labor),

OOA = The ratio of other operating costs to other assets (A proxy for unit price of capital).

EQA = The ratio of equity to total assets.

LT = The ratio of loans to total assets.

TA = Total assets.

The H-statistic is then equals $H = \alpha_1 + \alpha_2 + \alpha_3$, where if:

$H \leq 0$ The sector is operating under the condition of mono-

poly or perfectly collusive oligopoly.

$H < 1$ The sector is operating under the condition of monopolistic competition.

$H = 1$ The sector is operating under the condition of perfect competition, natural monopoly in a perfectly contestable market, or sales maximizing firm subject to a break-even constraint.

The previous model is estimated with pooled, cross-section time series data, using seemingly unrelated regression for the period from 1993 to 2005. The results, as shown in table (2), indicate that the banking sector in Kuwait is operating under monopolistic competition, broadly in line with the results obtained by studies on

other countries, and in line with the results obtained from the concentration HHI index. However, the results indicate that although the unit price of funds variable has the correct positive sign, the sign of both the unit price of labor and the unit price of capital are surprisingly negative with small magnitude.

Conclusion

The study attempts to assess the degree of competition in the Kuwaiti Commercial banking sector using both the Herfindahl-Hirschman Index (HHI) and PR. A pooled annual data for seven commercial banks covering

the period from 1993 to 2005 is used to estimate a six variables model by seemingly unrelated regression technique. The results indicate that Kuwaiti banks are highly concentrated and are operating under monopolistic competition, regardless of whether interest income, or its ratio to total assets, is used. This result is in line with those obtained by empirical studies on both developed and developing countries. An important extension of this research, as sufficient data become available, is to assess the impact of allowing foreign banks to operate in the domestic market on the degree of competition in the sector.

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الملخص

المنافسة في قطاع البنوك الكويتية

عبدالله خالد المطيري حسين علي العمر
الهيئة العامة للتعليم التطبيقي والتدريب

تهدف هذه الدراسة إلى محاولة التعرف على درجة المنافسة في قطاع البنوك التجارية بدولة الكويت، وذلك باستخدام مؤشر "هرفندال - هيرشمن" للتركز ونموذج "بانزار". وقد تم لتحقيق هذا الهدف استخدام بيانات سنوية لسبعة بنوك تجارية تغطي الفترة من عام ١٩٩٣ إلى عام ٢٠٠٥، وذلك لتقدير نموذج ذي ستة متغيرات. وتشير النتائج إلى أن قطاع البنوك التجارية يعاني من درجة تركيز عالية، ويعمل في ظل ظروف المنافسة الاحتكارية، وهي نتائج تتفق مع تلك التي توصلت لها الدراسات حول الدول الأخرى.

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