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Factors of Competitiveness of Islamic Banks in the New Financial Order

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This paper studies the factor of competitive conditions of conventional and Islamic banks operating in the same market in the MENA region. We determine the level of competitiveness between the two types of banks by using the PR-H statistic of Panzar and Ross (1987) and the Lerner index. Our estimations show that banking sectors in MENA operate under monopolistic competition. Our results confirm that Islamic banks are significantly more competitive than conventional banks and they express a higher degree of market power. We show also that profitability significantly increases with market power, but this does not warrant higher profitability levels for Islamic banks.

Keywords: Islamic banks, Market Structure, Bank Competition, profitability.
***JEL* Classification:** D4; G21; L1; N25.

1. Introduction

In the last decade, Islamic banks have played a stronger role in the new international financial order spawned by the global economic turbulence. The Islamic banking services industry has proved that it is a solid and powerful industry especially in the MENA region. It is now poised to become one of the global economic powers in any new financial system. The financial system in the MENA region is currently passing through radical changes in its essence and infrastructure because of the crisis. Failure expressed by conventional banks mainly due to their systems of governance or their funding procedures, is the main reason for the transition of a very large category of customers towards Islamic finance. These changes have substantially affected the banking system in the MENA region and have increased competitive pressures in the banking industry. In this framework, the factors of competitiveness of Islamic banks and their productivity was the main issue of studies devoted to investigating the development of Islamic banks that operating side by side with conventional banks.

The aim of this study is twice. First, we examine the effects of competition of conventional and Islamic banks operating in the same country by using the approach of Panzar and Rosse (1987) H-statistic and the Lerner index (Abba Lerner 1934). Second, we test the impact of

competitiveness on the profitability of Islamic banks in the MENA region. Most studies have focused either on the competitiveness of Islamic banks or conventional banks.

Two main approaches were essentially used in the literature to measure bank competition: the structural approach and the non-structural approach. The structural approach studies bank competition by measuring concentration ratios or indices (e.g., the Herfindhal index) that characterize market structure. The use of concentration as a measure of competition comes from the so called Structure-Conduct-Performance paradigm, which establishes that high concentrated firms are more likely to engage in anticompetitive behavior.

Contrary to this context, the non-structural approach is based on the so-called "New Industrial Organization literature (NOI)". This approach measures competition without using explicit information about the structure of the market. Instead, non-structural measures focus on obtaining estimates of market power from the observed behavior of banks. Two measures are often used in the context of the NIO literature to measure competition, namely, the PR-H statistic of Panzar and Ross (1987) and the Lerner Index.

Panzar and Ross (1987) develop the PR-H statistic measured by the sum of the elasticities of a firm's revenue with respect to the firm's input prices to measure the extent of competition in a market. However, some studies have shown that at times concentration is not a reliable measure of competition (see Cetorelli, 1999) and the link between concentration and performance is not always positive as suggested by the Structure-Conduct-Performance paradigm (see Jackson, 1992). The calculation of PR-H offers a means of discrimination between the different market structures through the reduced of the function at the individual income of the bank.

In the same non-structural approach, The Lerner Index measures the degree of market power by focusing on the pricing power apparent in the difference between price and marginal cost (Jimenez, Lopez, and Saurina, 2007). It captures the degree to which a firm can increase its marginal price beyond marginal cost, and represents a more accurate indicator of market power compared to standard concentration measures. Higher values of the Lerner index imply lower levels of bank competition.

These theoretical approaches have been applied in the study of competition of Islamic banks in musilman economics. El-Gamal and Inanoglu (2005) evaluate efficiency of banks from different types, including a small number of Islamic banks. They find no significant difference in efficiency between Islamic banks and other banks. Cihak and Hesse (2008) perform a comparative analysis of Islamic and conventional banks in terms of financial stability. Using Z-score, they find that small Islamic banks are financially stronger than small conventional banks, but large conventional banks are financially stronger than large Islamic banks. Olson and Zoubi (2008) compare the accounting ratios of Islamic and conventional banks for the Gulf Cooperation Council countries. Their results support that Islamic banks express a greater profitability than conventional ones. Most studies have focused either on the competitiveness of Islamic banks or conventional banks.

In a recent study, Weill (2011) investigates whether Islamic banks have greater market power than conventional banks, as they might benefit from a captive client base. Using the Rosse-Panzar model to measure the degree of competition for each type of banks he finds that Islamic banks do not have greater market power than conventional banks. He suggests that the competitive behavior of Islamic banks to differences in norms and incentives.

Our work contributes to the literature on Islamic banking at three levels. First, unlike the work of Ariss (2009), which focuses only on Islamic banks, we consider a sample of Islamic banks and conventional banks operating in the same country in order to study the competitiveness between them. Second, we use both the H-statistic and the Lerner Index to study the bank competitiveness and the market power of Islamic banks. The works of Gelos and Roldos (2004), Classen and Leaven (2004), Giradone Casu (2006) and Schaeck et al (2009), are limited to the use of the PR-H statistic. These works do not provide sufficient analysis of factors making banks more competitive. Third, our study determines the impact of these two measures (H-statistic, the Lerner index) on the profitability of both types of banks: conventional and Islamic.

The remainder of this paper is structured as follows: Section 2 presents the literature review of competition of banks. Section 3 details our methodology. In Section 4 we present the data and empirical results of our study. Section 5 concludes.

2. Notions of competitiveness and market power

The concept of competitiveness bank was first applied to conventional banks before being used to study the competitiveness of Islamic banks in the market. In this context, identification of factors of competitiveness has been the issue of several studies devoted to the banking sector in several countries. However, rare are the studies interested to investigate the power of competitiveness of Islamic banks face to conventional banks.

The size of the bank was largely regarded as a fundamental factor of the competitiveness of banks. De Bandt and Davis (2000) test the impact of the size of the bank's on its main competitiveness on the market. They identify monopoly behavior for small banks in France and Germany and monopolistic competition for small banks in Italy. They suggest that small banks require higher market power. Their results contrast those of Molyneux, Lloyd-Williams and Thornton (1994) who found that the monopolistic competition characterize the market structures in France, Germany, Spain and the United Kingdom.

Roldos and Gelos (2004), use the PR-H statistic to examine the evolution of market structure in eight countries in Europe and Latin American during the 1990s. While significant bank consolidation has been taking place in these countries, reflected in a sharp decline in the number of banks, this process has not systematically been associated with increased concentration as measured by standard indices. They suggest that, overall, markets have not become less competitive in a sample of eight European and Latin American countries. Lowering barriers to entry, by doing such things as allowing increased participation of foreign banks, appears to have prevented a decline in competitive pressures associated with consolidation.

Similarly, Casu and Giradone (2006) apply the PR-H to reflect the efficiency of banks in 15 European Union countries. Their results show that the degree of concentration is not related to the level of competition. In the same context, Ariss (2009) assesses the competitive conditions of conventional banks only in the Middle East and North Africa. It shows that the market structure in the banking system in the MENA region is described by monopolistic competition despite the increase in concentration. Claessens and Laeven (2004) carry out a major study of competition and concentration that includes 50 developed and developing countries' banking sectors. They find that the systems with greater foreign bank entry, and fewer entry and activity restrictions to

be more competitive. They also find no empirical evidence that the competitiveness measure relates negatively to the banking system concentration.

Following Molyneux et al. (1994), the H value express the main disadvantage that it may show rather erratic patterns over time. To reply to this drawback, Jimenez et al (2007), Berger, Klapper and Ariss, (2009), use the Lerner index as an alternative instrument to measure banking competition. Thus, Maudos and Nagore (2005) use the Lerner index to test the impact of bank-specific, regulatory, institutional, macro and financial development variables on competition in banking, using information at both national and bank level during 1995-1999 in 58 countries. Their results show that the size and efficiency of the bank are determinant factor of the power of market. The variables of structure and level of financial development provide a coherent explanation of the degree of competition. Also, they show that regulatory barriers have no significant effects on the competitiveness of banks. Similarly, the study of Delphine (2010) supports that during the crisis of 1997-1998, banking competition among banks has increased and the crisis has no impact on the market power of banks in Thailand over the period 1993-2008.

To our knowledge, rare are the studies that have focused on the study of competitive factors of Islamic banks operating side by side with conventional banks. In accordance with the economic theory most studies supports that market stricture affect bank performance. In This context Haron (1996) examines the effects of competition and some other external factors on the profitability of 4 Islamic banks. Banks are classified into two groups according to the market in which they operate. He finds that Islamic banks in competitive market earned more than those which operate in a monopolistic market. Evidence was also found to support the hypothesis that the profit-loss sharing principle practiced by Islamic banks is beneficial to both depositors and the banks.

Abdul Majid and Sofian (2008) investigate the market structure of Islamic banking industry in Malaysia during 2001-2005 and evaluates the degree of competition using the *H*-statistic by Panzar and Rosse (1987). Their study reject the test for the market structure of monopoly or perfect competition implying that the Islamic banks in Malaysia earned their revenue in the condition of monopolistic competition.
In this paper we restrict our study to banks of MENA (Middle East and North Africa) region, our purpose is to study the conditions of banking competition on both Islamic and conventional banks by using both the PR-H statistic and Lerner index.

3. The methodology and the data

To study the market power of Islamic banks and the determinants of their competitiveness in the MENA region, we apply a two step procedure. In the first step we measure the competition of Islamic and conventional banks and we identify the market power of each of them by the PR-H statistic and the Lerner index. In the second step we study the impact of competitiveness on the profitability of banks.

3.1. The PR-H statistic

The model of Panzar and Ross (1987) assesses the degree of competition in an industry and determines the long-term competitive equilibrium, monopoly and monopolistic competition.

Panzar and Ross (1987) define a statistical PR-H by the sum of elasticities of bank revenues over its entry price. PR-H is estimated from the following equation:

$$Ln(TRit) = \alpha + \beta 1 Ln(W_{L,it}) + \beta 2 Ln\left(W_{F,it}\right) + \beta 3 Ln\left(W_{K,it}\right) + \gamma 1 Ln(Y_{1,it}) + \gamma 2 Ln\left(Y_{2,it}\right) + \varepsilon_{it} .$$

TR: total revenue = interest / total assets.

W_L: labor costs = personnel expenses / total assets.
W_F: Cost of equity = interest expenses / total deposits.
W_K: Cost of capital = fixed operating costs / total assets.
Y_1: equity to total assets.
Y_2: Total assets.
W_L, W_F and W_K are the three entry price of the statistic H ($H= W_L+W_F+W_K$).
Y_1 and Y_2 are the variables of banking supervision. The index i indicates the bank and t indicates year.

If H = 1, then the market is characterized by perfect competition. I.e. an increase in input costs will lead to an increase in marginal cost without affecting the balance of production.

If $H \leq 0$, the market is a monopoly that is to say that an increase in entry costs leads to an increase in marginal costs which alters the balance of production and revenue.

If $0 < H < 1$, the market is monopolistic competition that is to say that an increase in input costs will lead to a less proportional increase of revenues.

5 Applying the PR-H requires the three following assumptions. First, Banks are companies that produce products using labor, capital and financial resources (De Bandt and Davis 2000). Second, the prices of these factors are not correlated with the increase of revenues generated by the services of better quality. Third, Banks are firms that maximize its profits (Gelos and Rold2004).

Another additional assumption for the model of Panzar and Rosse (1987) is that the banking sector must be balanced in the long term when we estimate the following function:

$$Ln\ (ROA_{it)} = \alpha + \beta 1 Ln(W_{L,it}) + \beta 2 Ln\left(W_{F,it}\right) + \beta 3 Ln\left(W_{K,it}\right) + \gamma 1 Ln(Y_{1,it}) + \gamma 2 Ln\left(Y_{2,it}\right) + \varepsilon_{it}\ .$$

(2)

Where denotes the ROA profitability: net income / total assets.

Market equilibrium will be examined from a factor E which is the sum of the price of admission. A different value of 0 implies that the market is not balanced. The usefulness of this test is that in the long term viability is not related to input prices. (Schaffer1982), Claessens Laeven (2004).

3.2. Lerner index

The Lerner index is a direct measure of competitiveness and determines the market power of the firm. The Lerner index is measured by the difference between price and marginal cost of funds of the bank.

$Lerner_{it} = (P_{TAit} - MC_{TAit}) / P_{TAit}$ (3)

P_{TAit}: the price of total assets = total revenue / total assets.

MC_{TAit}: marginal cost.

Where

$$MC_{TAit} = \frac{Cost}{Q_{it}}\left[\beta_1 + \beta_2 lnQ_{it} + \sum_{K=1}^{3} \varphi k\ LnW_{K,it}\right]$$

Q_{it}: an indicator of production or total assets.
W_k : three input prices.
Cost: interest charges.

Thus:

$$LnCost_{it} = \beta_1 LnQ_{it} + \frac{B_2}{2} LnQ^2_{it} + \sum_{K=1}^{3} \varphi_{Kt} Ln\ W_{K,it} + \sum_{K=1}^{3} \vartheta_k\ LnQ_{it} LnW_{K,it} + \sum_{K=1}^{3} \sum_{J=1}^{3} Ln\ W_{K,it} LnW_{j,it} + \varepsilon_{it}\ .$$ (4)

The Lerner index takes values between 0 and 1. When the index is high (toward 1) the banks have a monopoly, reflecting increased market power. However, if the market is purely competitive Lerner index tends towards zero.

In a next step, we combine the two samples together to study the impact of competitiveness on the profitability of banks. We consider the following model that expresses the profitability measures of competitiveness calculated already from PR-H or the Lerner Index:

$$Rent_{it} = f(Comp_{it} + Z_{it} + Islamique\ )$$

Where
Rent: economic profitability of the bank.
Comp: the measure of competitiveness that takes the PR-H statistic and the Lerner index.
Zit: It's the control variables. In this study we consider the market share and size of the bank as control variables.
Islamic is a binary variable that distinguish between Islamic banks and conventional banks.

4. Database

Our sample consists of 67 Islamic banks and 111 conventional banks from 12 countries in the region of MENA (Middle East and North Africa) over the period 2000-2007. Table 1 shows the distribution of Islamic and conventional banks by country.

Table 1. **The distribution of Islamic and conventional banks by country.**

	Islamic Banks		Conventional Banks	
	Nb of banks	Nb of observ.	Nb of banks	Nb of observ.
Bahrain	19	79	6	19
Iran	12	31	3	2
Kuwait	4	28	12	82
Jordan	4	30	13	102
Qatar	4	32	3	23
Oman	2	16	8	55
Lebanon	3	24	22	167
Saudi Arabia	7	56	2	16
United Arab Emirates	4	30	18	144
Yemen	1	1	5	36
Egypt	6	42	15	120
Algeria	1	1	4	23
Total	67	370	111	789

The comparison of total numbers of Islamic banks and conventional tells us that the banking systems of Bahrain and Iran are dominated by Islamic banks. Unlike other countries whose banking systems clearly reflect the emergence of Islamic banking industry.

To show the importance of Islamic banks in the banking system per country, we present in Table 2 the distribution of the total assets of banks of our sample between Islamic banks and conventional banks. This table shows the remarkable increase in size of Islamic banks between 2000 and 2005. This growth has declined for the year 2007 with a total asset for Islamic banks of 42.59% behind 55.11% in 2000.

Table 2. Distribution of total assets between conventional and Islamic banks

	2000		2003		2005		2007	
	Million USD	%	Million USD	%	Million USD	%	Million USD	%
Conventional banks	312355	44.89	347 854	47.1	496 419	46.97	775 104	57.41
Islamic banks	383437	55.11	390 661	52.9	560 289	53.03	574998	42.59
Total	695792		738 515		1056708		1350102	

Table 3 presents the descriptive characteristics of banks by country. Islamic banks are summarized in panel A and conventional banks in panel B. We note that in terms of total assets, Islamic banks in our sample are more concentrated than conventional banks; this is mainly due to the importance of their sizes. Also, Islamic banks express an overall total asset 7557.538 MUSD behind 4241.602 M USD for the conventional banks.

Islamic banks in Iran have the largest share of total assets (15269.91MUSD), followed by Lebanon (7629.958 million dollars) and Kuwait (7383.786 MUSD), in contrast conventional banks have just a total of 5530.412 MUSD.

In terms of economic profitability ROA, Islamic banks seem more profitable than conventional banks (2.74% against 2.61%), where Islamic banks in Algeria have a higher economic efficiency (15.74%) similarly the Emirate, Qatar and Saudia this due to their engagement in economic activities by offering a range of products aimed to the sharing of profits and losses as Moucharka and Moudharba. These products are primarily based on a relationship of trust between banks and customers and, moreover, that projects funded express a sufficient economic and financial viability.

Islamic banks also express a return on equity (ROE) significantly higher than conventional banks (17.49% against 17.35%). This implies that Islamic banks are making profits and they are able to consolidate their positions in the presence of conventional banks.

Table 3. **Descriptive characteristics of banks by country**

		Panel A : Islamic banks				Panel B : Conventional banks			
Pays		**E/TA**	**TA**	**ROA**	**ROE**	**E/TA**	**TA**	**ROA**	**ROE**
Bahreïn	Mean	26.793	4794.920	3.892	14.570	37.816	2164.95	4.526	13.025
	Std.dev	22.115	8031.193	4.340	11.512	20.990	1787.934	6.366	12.918
Iran	Mean	10.252	**15269.91**	2.299	**24.352**	23.688	**5530.412**	3.929	16.329
	Std.dev	13.632	18074.990	2.317	17.694	18.726	4976.034	3.673	10.784
Kuwait	Mean	30.433	**7383.786**	5.270	19.260	34.630	5754.611	7.224	20.517
	Std.dev	31.042	7168.587	6.423	7.473	23.308	7299.814	7.802	14.903
Jordon	Mean	16.643	733.968	1.716	10.796	9.716	5538.250	1.347	17.928
	Std.dev	12.325	591.614	1.850	6.553	6.654	8871.515	1.067	23.299
Qatar	Mean	13.526	4923.063	3.073	23.712	14.438	2986.609	2.877	20.480
	Std.dev	5.608	6620.587	2.098	12.636	4.272	2877.433	1.116	7.004
Oman	Mean	13.685	1778.000	2.028	17.612	30.120	1948.359	3.785	14.377
	Std.dev	2.482	856.737	1.268	5.711	23.562	2258.830	3.310	6.379
Liban	Mean	6.940	**7629.958**	1.013	15.345	8.851	1617.607	0.730	13.197
	Std.dev	1.842	4560.223	0.247	4.010	4.508	1973.905	0.671	45.441
Saudia	Mean	12.113	16437.500	2.805	23.732	10.543	17787.130	2.581	23.976
	Std.dev	3.648	11102.900	1.788	9.593	1.732	10536.780	0.858	6.422
Abu Dhabi	Mean	18.602	4475.167	3.584	15.501	18.789	6936.514	3.055	21.637
	Std.dev	9.029	5444.703	2.359	7.464	12.810	9963.281	2.791	26.720
Yémen	Mean	7.389	562.750	1.163	15.054	9.704	1153..135	1.176	16.695
	Std.dev	2.334	352.320	0.470	3.479	5.877	2108.167	1.089	16.497
Egypte	Mean	6.424	4241.250	0.403	7.011	11.837	3818.875	1.688	16.102

Std.dev	4.048	6097.034	0.479	6.242	10.645	6413.474	1.370	11.679
Algeria	Mean	8.891	475.250	**15.746**	15.746	4.851	3079.840	1.005
Std.dev	1.506	215.953	0.721	7.000	3.349	3011.761	1.168	17.442
total	Mean	16.423	**7557.538**	**2.739**	**17.494**	17.261	**4241.602**	**2.619**	**17.352**
Std.dev	17.024	11123.590	3.299	12.360	16.801	7047.959	3.884	26.121

Table 4. Estimate the parameter of equilibrium

	Islamic banks	**Conventional banks**
Log W_l	5.6729 (5.34) ***	-2.99945 (-0.33)
Log W_f	0.3308102 (0.48)	-4.956528 (-1.46)*
Log W_k	-1.169239 (-1.6)	1.792008 (0.24)
Log Y_1	0.573689 (1.17)	-3.129448 (-0.34)
Log Y_2	1.063087 (3,10) **	0.901696 (0 .17)
Const	17.63299 (3.54) **	-15.7647 (-0.38)
R^2	0.3376	0.1518
E-équilibre	4.83447	-6.16397
Fisher	F (5 ,83)= 8.46 ***	F(5,15)=0.54

*significant at 10%, ** significant at 5%, *** significant at 1%.

This table shows an equilibrium statistic different from 0, which reflect that the banking market in the MENA region is not in equilibrium at long term.

In the following table we present the result estimation of the PR-H statistic. We find that in the case of Islamic banks, financial factor W_f appears significantly different from zero and affects positively the total revenue. This result implies that soundness of financial sectors provides a margin of security for creditors in case of crisis or financial distress.

Regarding Islamic banks, both control variables, *equity to total assets* and *Total assets*, appear positive. This confirms that the Islamic industry proves an economy of scale. While in the case of conventional banks the variable *equity to total assets* express a negative sign which indicates that conventional banks prove diseconomies of scale.

Table 5. **Estimate the parameter of PR-H**

	Islamic banks		**Conventional banks**	
Log W_l	-0.4182	(-2.79) ***	-0.5590159	(-2.10) **
Log W_f	0 .2374	(4.02) ***	0.030102	(0.14)
Log W_k	0.2066	(2.16) **	0.5354709	(2.76) ***
Log Y_1	0.0969	(0.186)	-0.2624619	(-0.95)
Log Y_2	0.0228	(0.45)	0 .0265115	(0.11)
Const	-3.9524	(-5.33) ***	-3.074136	(-1.10)
R^2	0.2979		0.4407	
PR-H	0.0259055		0.006566	
Fisher	F (5 ,84)=7.13***		F(5,13)=2.05	

*significant at 10%, ** significant at 5%, *** significant at 1%.

Referring to the model of Panzar and Rosse (1987), the PR-H of Islamic Banks (0.0259055) is significantly higher than the PR-H of conventional banks (0.006566). This allows us to conclude that Islamic banks are more competitive than conventional banks. This is the essential reason leading conventional banks to incorporate Islamic banking techniques, opening Islamic windows or to changes in whole to Islamic form.

The results of the PR-H test show that banks operate under conditions of monopolistic competition, where any increase in costs of input leads to a less than proportionate increase in revenues.

This market structure allows banks to have the benefit of a monopoly situation with differentiation in product while maintaining the quality and price. Monopolistic competition requires meeting three fundamental assumptions. First, the market fluidity. Second, every business has its own clientele. Third, each firm considers the price of its competitors as given.

These results confirm those already found in Table 2 and 5 which indicate that Islamic banks are more competitive than conventional banks.

Schaffer (2004) suggests that, although the PR H-statistic is considered as an indicator of competitiveness, it may not present an appropriate measure of the degree of competition. So, we propose to calculate the Lerner index, which is refers the degree of market power.

The evolution of the Lerner index between 2000 and 2007 is expressed in Table 6. We note that Islamic banks express more market power than conventional banks because they present a higher Lerner index for all the sample considered.

Table 6. **Lerner index for Islamic and conventional banks**

Year	Islamic banks	Conventional banks
2000	0.6678	0.5762
2001	0.7299	0.3756
2002	0.6829	0.4623
2003	0.7294	0.2956
2004	0.7496	0.4213
2005	0.7772	0.3919
2006	0.7806	0.4090
2007	0.8063	0.2621

In 2000, the index for Islamic banks stands at 0.6678 to achieve 0.8063 in 2007. The advantage of market power is due to the fact that Islamic banks are using special financing methods unrecognized by conventional banks. Most of these financing methods are based on basic principles in accordance with the rules of Shari'a and interest a very specific segment of customers. These services mark the specificity of Islamic bank services such as the prohibition of interest and the prohibition of all forms of speculation.

The increase in the Lerner index on the Islamic market was accompanied by a significant decrease in the market power of conventional banks. The Lerner index of conventional banks has declined from 0.5762 in 2000 to 0.2621 in 2007. This may appear logical since the year 2007 was marked by the beginning of the financial crisis that has manifested itself in loss of margins as well as losses related to non-performing loans. This has led to the bankruptcy of a number of banks exposed to market risk and whose portfolios are held mainly speculative.

We deduce from table 6 that banking in the MENA region expresses a very high concentration. The monopolistic competition is the main feature of the structure of this market. This allows us to examine the variables that explain the difference in the degree of competitiveness.

The factors explaining the degree of competitiveness:

To better study the degree of competition in banking markets in the MENA region, we propose to identify the factors that express the power of the market for banks. We estimate the following model:

$$\boldsymbol{Comp_{it} = a + bC_{it} + e_{it}.} \qquad (6)$$

Variable Comp: refers to the variable competitiveness. In our study we consider is the statistical PR-H and the Lerner index as a proxy for competitiveness.

C_i is a vector classified into two categories: control variables and structural variables. As control variables we consider the efficiency measured by (*total deposit/total assets*), profitability measured by (ROA and ROE), and the capitalization measured by *equity/total assets*. As for the structure variable we consider that the concentration is measured by total assets. The results of these estimates are shown in Table 7.

Table 7. Factors of the degree of competitiveness

Panel A	Statistique PR-H		Indice de Lerner	
Variables	Model 1	Model 2	Model 1	Model 2
Efficiency	5.65^{e}06***	4.72^{e-06} **	-0 .02166	-0.01247
ROA	2.18^{e}-07	4.38^{e}-07	-0.00985**	-0.01062**
ROE	-1.14^{e}-07**	-1.29^{e}-07***	0.0013	0.00107
Capitalization	-2.16^{e}-0 ***	-2.5^{e}07***	0.000422	0.00027
Concentration		-1.15^{e}-10*		6.21^{e}-06***
Constant	0.0259***	0.0259***	0.9697***	0.92311***
R^2	0.6204	0.649	-	_
Fisher	F (4 ; 435)=9.95***	F (5 ; 398)=8.85***	F (4 ; 316)=1.1	F (5 ; 315)=2 ;94)**

*significant at 10%, ** significant at 5%, *** significant at 1%.

Panel B	Statistique PR-H		Indice de Lerner	
Variables	Modèle 1	Modèle 2	Modèle 1	Modèle 2
Efficiency	1.22^{e}-06**	1.01^{e}-06**	0.1658*	0.175*
ROA	2.07^{e}-07***	2.35^{e}-07***	0.0154**	0.01403*
ROE	7.75^{e}-09	-1.77^{e}-08***	0.00057*	0.00183*
Capitalization	-1.87^{e}-08	-9.56^{e}-09	0.0163***	0.0159***
Concentration		2.92^{e}-10***		-0.000013*
Constant	0.00701***	0.0070***	-0.11695	-0.07437
R^2	0.0549	0.2387	-	-
Fisher	F(4 ;691)=10.04***	F(5 ;690)=43.28***	F(4 ;688)=8.1***	F(5 ;687)=8.7***

*significant at 10%, ** significant at 5%, *** significant at 1%.

Considering first the statistic PR-H as a measure of competitiveness, the coefficient of efficiency of Islamic banks expressed a positive effect on the degree of competitiveness. This implies that banks that operating in monopolistic sector are more efficient. This finding contradicts those of Casu and Giradone (2006) who find that most competitive banks are not necessary more efficient.

The positive effect of efficiency on competitiveness is due to the fact that each type of bank acts on a different market segment and has a specific category of customers. Thus, each bank offers different services that create a diversity of products and altering the structure of demand.

The coefficient of ROE is significantly and negative for both Islamic and conventional banks. Which shows that bank that hope to achieve higher returns should operate in monopolistic environment.

The negative sign of financial profitability is mainly due to the increase of commodity prices which reduced revenues and to the prohibition of interest rates. This allows us to conclude that even conventional banks are financially competitive.

The coefficient of capitalization is significantly negative for Islamic banks. It indicates that well capitalized banks operate in less competitive environments.

The introduction of concentration as a structure variable has improved the power of competition for both Islamic and conventional banks. In both cases, we note an increase in the coefficient of determination R^2. For Islamic banks the ratio of concentration expresses a significant and negative sign, hence the degree of competitiveness decreases with increasing concentration. This result is in line with that found by Ariss (2008) and Casu and Giradone (2006), which suggest a negative relationship between concentration and competitiveness. But for conventional banks, we show that the concentration variable expresses a positive effect and confirm that conventional banks are financially well performing.

Turning now to the Lerner index, we find that efficiency appears insignificantly negative for Islamic banks and appears significantly positive at 10% level for conventional banks. This shows that the most efficient banks express more market power. This is verified by the assumption of bank efficiency assessing that most efficient banks are expected to operate in concentrated markets.

The economic profitability (ROA) has a negative and significant impact on market power for Islamic banks. Thus, banks face higher costs of bankruptcy leading to higher financing costs. Nevertheless, the return on equity (ROE) of conventional banks has a significant and positive effect on market power. The variable concentration introduced in the estimation of Model 2 has a significantly positive effect on market power. This is in perfect conformity with the hypothesis of structure-conduct-performance (SCP) which supports that the most concentrated markets are expected to have more market power.

As suggested by Corvosier and Gropp (2002) and Guevara et al. (2004), we can deduce two main conclusions. First, the Lerner index, expressing the power of the market depends on both specific variables of banks and the microstructure of the market. The last includes market

concentration and the elasticity of demand. Second, we find that conventional banks are also present and express a significant market power.

To test the impact of competitiveness on the level of economic and financial profitability's, we estimate equation (7) expressing the economic and the financial profitability (ROA) and (ROE) on four variables: two variables of competitiveness; PR-H statistic and the Lerner index, the size of the bank and a binary variable (type of bank) that takes 1 if the bank is Islamic and 0 if the bank is conventional. The results of this estimation are summarized in Table 8.

$$ROA_t = H_t + Lerner_t + Type\ of\ bank_t + Size + \varepsilon \qquad (7)$$

Table 8. Competition and bank profitability

	ROA	ROE
PR-H	121.954*	191.411*
Lerner	0.6242***	1.2500 *
Islamic	3.2121**	4.600^{a*}
Market share	-1.86^{e-06}	0.00018*
Size	0 .5112***	1.199*
Const	-645.257*	-918.855

*significant at 10%, ** significant at 5%, *** significant at 1%.

The positive and significant coefficient of the H-statistic indicates that the increased level of competitiveness will lead to higher economic profitability's.

The positive and significant relationship between the Lerner index and the economic performance implys that bank performance increases with its market power. Generally, high market power leads firms to enjoy the power in terms of prices which results in increased profitability.

The Islamic variable is significant and has a positive effect on economic efficiency. So Islamic banks are economically well performing compared to conventional banks. This performance is due to the importance of its size which has significant and positive effect on financial and economic profitability following.

In result, we suggest that Islamic banks are more economically efficient but financially are facing challenges due to changes in the structure of bank. This appears logical since the first

source of financial profit for banks lies in the practices of interest and risky transactions that are totally prohibited by Islamic rules.

Conclusion

The last two decades where market by the emergence of Islamic banks, especially in the Muslim countries. All of these banks are governed by basically the same shari'ah law, they operate in various kinds of market structure and side by side with conventional banks.
In this study we examine the competition of Islamic banks and their factors of profitability. We apply two approaches related to the New Industrial Organization literature notably the Panzar - Rosse model and the Lerner index.
Our results confirm that Islamic banks are significantly more competitive than conventional banks and they express a higher degree of market power. We show also that profitability significantly increases with market power, but this does not warrant higher profitability levels for Islamic banks.

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