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Dynamic effect of financial ratios on Islamic bank's profitability: An empirical Application to the banking sector in gulf countries

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Abstract-The aim of this paper is to study the determinants of performance in the Gulf countries during the period of study from 2009 à 2016. Then, we utilize two models in which we adopted the variable ROA and ROE as a dependent variable. Empirical evidence supports the significance of country-level characteristics and firm-level characteristics. In reality, a number of internal and external banking characteristics have been used to expect profitability. Controlling the macroeconomic climate and industry-specific variables, the findings show that high capital-to - asset and loan-to-asset ratios contribute to higher profitability. In general, there is no major difference between interest-based banking and the free interest bank in terms of profitability, and there is a difference in leverage and size.

Keywords: Performance . Dynamic effects . Panel Data
Jel classification: G15 . G21 . G24

I- Introduction

Islamic and conventional banks are two profitable institutions. Performance is an important issue for evaluation.

However, Islamic and conventional banks have differences in financing and structural activity. Islamic banks and conventional banks have neither the same principles nor the same regulatory structure as conventional banks.

In the first hand, the activity of Islamic banks should be in accordance with sharia law. The main difference between Islamic and conventional banks is the second hand, there are the specificities of the Islamic bank in terms of solvency. In the third hand, Islamic banks are younger and enjoy fewer experiences compared to conventional experiments.

Islamic banks are based on the sharing of losses and profits (PLS) (moucharaka, moudharaba) and on the commercial margin between buying and selling (mourabaha, salam). On the one hand, due to the specific Islamic activity, the performance of the Islamic bank would not be determined by the same factors held in conventional banks. Several authors have been interested in studying the performance of Islamic banks. It enriches the literature in this regard to identify the determinants of profitability.The purpose of this research is to empirically access the performance of 22 Islamic banks operating in the Golf region over the period 2009-2016. We try to answer the following question: what are the determinants of performance in Islamic banks?
The rest of this article is organized as follows: Section 2 gives a review of the literature on the performance of Islamic banks. Then we will present the methodology in Section 3. Section 4 presents the results and discussion. Finally, synthesis and policy recommendations are presented.

II- Literature review

Several authors have studied the performance of Islamic and conventional banks. Tamimi (2010) examined the performance of Islamic and

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conventional UAE banks for the period Sehrish, Saleem, Yasir, Shehzad and Ahmed (2012) analyzed and compared the performance of 4 Islamic and 4 conventional banks in Pakistan during the period 2007-2012. They found that during the first 3 years of the performance of Islamic banks were better, while conventional banks were the best in terms of performance, they also concluded that Islamic banks have improved performance in the near future and there There is not much difference between the two banks from 1996 to 2008. He measured the performance of the return on assets (ROA) and return on equity (ROE). The independent variables are the GDP, the size of the bank, the concentration, the liquidity, indicator of financial development. He found that both the liquidity and the concentration variables have a significant impact on the banks' performance.

Other writers have been interested in studying the performance of Islamic banks only.
Hassan and Bashir (2003) examined the performance of Islamic banks for the period 1994 to 2001. They found that internal variables (overheads, liquidity, leverage ratios, earnings, management expense ratio) and external variables (GDP by capital, taxation, financial indicators and real interest rates) have a significant impact on the performance and efficiency of banks. They concluded that banks' performance increases with capital and loan-to-asset ratios. They have provided evidence that this conclusion is maintained even after controlling the different circumstance, such as taxation, market structures, and economic conditions. They also found that macroeconomic indicators have positive effects, while taxes have a negative impact on bank performance during the study period.

Similarly, Akhtar, Ali and Sadaqat (2011) measured the performance of Islamic banks in Pakistan from 2006 to 2009. They used ROA and ROE as performance indicators and took different variables such as the size of bank, ratio (total debt / equity), asset management, non-performing loan ratio, operating efficiency and capital adequacy. They used multivariate regression to analyze the impact of these variables on performance indicators. They found that the capital adequacy ratio has a significant positive effect while the size of the bank has a negative and insignificant impact with ROA and ROE.

Mohammad Kamrul Ahsan (2016) analyzed the performance of the three Islamic banks in Bangladesh over an eight-year period (2007-2014). This study uses an analysis of the CAMEL approach. He found that Islamic banks in Bangladesh are satisfactory in all respects namely: capital adequacy, quality of assets, quality of management.

III-. Data and methodology

A. Data

Empirically, the number of work focused on measuring the performance of Islamic banks is continually increasing.

The general interest of ratio analysis is to explain the level of performance of a bank. The financial ratios are the indicators of the financial performance of the bank.

The data was collected from 22 Islamic banks located in different countries (Saudi Arabia, United Arab Emirates, Qatar and Oman) covering the period 2009 to 2016. These countries were chosen because of the importance of Islamic banks in their banking system and their availability of data.

In fact, the financial ratios were estimated from the annual reports and the financial statements, namely the profit and loss accounts and the balance sheet for the period from 2009 to 2016. Finally, our study uses eleven financial ratios for the measurement of financial ratios of performance of Islamic banks.

we discuss the main categories of variables We use performance, banking characteristics and variables at the country level.

Profitability ratios measure the profitability of the banks. These ratios use the analysis of margins and also show the return on assets, deposits, investments and equity. If the profitability ratio is a higher indicator, there will be a good performance. Salah Ben Yousef et al (2015) used two profitability ratios to evaluate the performance of Islamic banking and conventional banking in CCM. These ratios were derived from Return On Assets (ROA) and Return On Equity (ROE). These two proxies are widely used in the empirical banking literature (eg, Iqbal 2001,

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Olson and Zoubi 2008, Abedifar et al 2013, Beck et al 2013, Bourkhis and Nabi 2013).

1) Return on Assets = Net Income / Total Assets

2) Return on equity = Net income / Equity

The use of different financial ratios such as profitability ratios are fairly common literature (Sabi, 1996, Samad and Hassan, 2000, Samad, 2004). The crucial ratio advantage The method consists in eliminating disparities in the sample and in showing positive aspects. We consider the following variables to be often used as an approximation of performance

- Return on Assets (ROA): it measures the total profitability as a percentage of total assets. It is a ratio of a bank's net after-tax income divided by its total assets and shows the ability of the bank to use its assets to generate income.

- Return on Equity (ROE): It is the ratio of a bank's net after-tax income divided by its total equity capital. It measures total profitability as a percentage of total equity and indicates the bank's ability to use its equity financing to generate profits. Higher ratios of ROA and ROE indicate better performance.

Our study uses the same measure of profitability to analyze the performance of banks in the Gulf countries.

Bank-specific variables are overheads, reserves, bank size, operating efficiency, and deposits. Financial indicators are market capitalization and market concentration, and macroeconomic indicators are gross domestic product and the real interest rate.

The bank specific variables used in this study are overheads, bank size, deposits, reserves and operational efficiency. We explain each variable in detail below and present empirical data on its effect on bank performance.

- Overheads

This ratio determines the variation in operating costs in the banking sector. A low ratio affects performance positively according to studies by Hassan and Bashir (2003) and Kunt and Huizinga (1998). Efficient banks operate in low cost. It is calculated as follows:

Overhead ratio= overheads/ total assets.

-Reserves

This variable is calculated by taking the natural log of reserves value, which is taken from the balance sheet of particular bank for particular year.

Reserves (RSRV)=[ln(reserves)]

In developing countries, if reserves are high, interest rate and profit decline, which also increases the remuneration rates. It is also argued that banks can absorb unexpected shocks by maintaining the desired reserves. Hassan and Bashir (2003) indicated that reserves have no impact on bank performance.

-Size

Most of previous studies have defined bank size as the log of total assets. Therefore, in this study, we also define bank size by taking log (ln) of total banks' assets as follows:

Bank Size=[ln(total bank assets)]

Previous studies have shown both the positive and negative effects of bank size on bank performance. For example, Goddard, Molyneux and Wilson (2004) and Akhtar et al. (2011) found that the size of the bank has an insignificant impact on performance, whereas Smirlock (1985) found a significant and positive impact of bank size on bank performance.

- Deposits

Deposits are the main source of financing for banks. The deposit / equity ratio has a significant effect on the banks' performance. In this study, we will use this variable as a specific determinant of bank performance. It is defined as follows:

Deposit Ratio = [Deposit / Equity]

A high deposit leads to better results because deposits increase investments, which increases the banks' income. On the other hand, a high level of capital is also considered necessary for a bank's financial strength and performance.

-Market Capitalization

Market capitalization describes the net worth of banks. It is calculated as Market capitalization =[shareprice× No of outstanding shares]

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Bourke (1989) and Hassan and Bashir (2003) showed that market capitalization has a positive relation with the performance of banks.

-Gross Domestic Product (GDP)

Gross domestic product (GDP) refers to the market value of producing goods and services in a country within a specified period. GDP at constant factor cost is calculated as follows:
GDP = [value of all produces + product taxes − subsidy (which is not included in product value)]

Previous studies, Demirgüç-Kunt and Huizinga (1998) and Bikker and Hu (2002), have presented a positive relationship between GDP and the performance of banks.

B.econometric methodology

We will use the method of the data of panel and the method of estimate is that of least square ordinary (MCO).

For estimation purpose, we write the equation as follows:

$$ROA= \beta o+\beta 1OVHDit+\beta 2RSVit+\beta 3SIZEit+\beta 4DPSTit+\beta 6Mktcapit+\beta 7GDPt +\varepsilon it$$

$$ROE= \beta o+\beta 1OVHDit+\beta 2RSVit+\beta 3SIZEit+\beta 4DPSTit+\beta 6Mktcapit+\beta 7GDPt +\varepsilon it$$

IV- Empirical results

A. Summary statistics

We begin our empirical parity by presenting descriptive statistics of the different variables. Table 1 presents the mean values, standard deviation, maximum and minimum values of the variables for all the banks included in the sample. These statistics provide information about the variables.

All variables have positive averages ranging from 0.8306124 to 2170.483 over the study period. The average value of ROA and ROE is 1.915511 and 9.494318, while its standard deviation is 3.467646 and 23.37807. However, the maximum and minimum values of ROA and ROE are 30.5, 263.95, -11.88, -119.81, respectively. The average overhead value is 46.01784 and the standard deviation is 41.07977. The minimum value indicates that some banks have negative overhead ratio.

For all period used in this paper, we can show that all variables have a high kurtosis and much higher than 3 expect for SIZE. This ratio varies from a minimum of 2.683812 and a maximum for 86.16999. He tells us about the high probability of extreme values and we can reject the hypothesis for the normal distribution in our study. Additionally, the coefficient of asymmetry (Skeweness) is varies between -4.128686 for the overhead and 6.470236 for the ROE variable. We can conclude that the distribution of returns is not normally distributed. Based on the two statistics of Kurtosis and Skeweness, we can reject the hypothesis of normality of all variables used in this study.

The correlation matrix between all used variables is summarized in Table 2. From this Table, we can find that no coefficient exceeds the tolerance limit (0.7) unless the correlation coefficients between variables, which does not cause problems when estimating two models.

B. Empirical results and conclusion

The results of the estimate by MCO of the two models used are shown in Tables 4 and 5. Then, we conduct other tests to demonstrate the validity of our models and justify the significance of all estimations. We test the correlation between the explanatory variables
and residue. This test is based on the value of (Prob> chi2). If the probability is less than 5%, so we accept H0 which verifies the absence of correlation between the residues and variables. If the probability is greater than 5%, in this case there is a problem of correlation between the residuals and the explanatory variables we should fix it. In all estimated models, the probability values (Prob> chi2) are all less than 5%. So we do not have the problems of correlation between the explanatory variables and residue. For model (1), the probability value (Prob> Chi2) is less than 5%. In this context, there is not a problem of correlation between the explanatory variables and residue. This value is shown in Table 3 that summarizes the estimation performed for four periods. Also, for the model (2), the probability values (Prob> Chi2) are less than 5%. In this context, there is not a problem of correlation between the explanatory variables and residue. These values are presented in Table 4 which summarizes the estimation performed for the 4 selected periods.

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The dependent variable, which measures the degree of obstinacy of profitability calculated by ROA and ROE , is statistically significant through the majority of models , suggesting a high degree of obstinacy of banking performance and justifying the use of a dynamic model. In addition, the Sargan test does not show any indication that the shortcomings have been established in most cases. There's no autocorrelation, either. The main goal of our research is to analyze the profitability of Islamic and Traditional Banks and to decide which factors have the greatest impact on the profitability of a bank between bank characteristics and macro-economic / industry-specific environmental variables. Our research uses many banking ratios to estimate the relationship between profitability and the internal characteristics of banks. In our report, we noted that leverage has a important and positive impact on all profitability ratios in traditional banks. This positive relationship between the capital ratio and the asset return is the same for both banks. Strongly capitalized banks have more resources to take advantage of funding opportunities. In addition, highly capitalized banks are less vulnerable to the possibility of bankruptcy, so the costs of bankruptcy are lower. This positive sign is due to a variety of factors related to Islamic banks, such as lower bankruptcy costs due to the tangibility of bank transactions; transaction and information costs are minimized by diversification of trades and activities in Islamic banks, etc. Previous research on the profitability determinants of the bank in the United States has shown a clear positive and statistically relevant relationship between leverage and profitability. Indeed, this ratio, considered as a measure of the probability of insolvency, allows the expense of the borrowed funds to be reduced. The positive sign of the coefficient was seen in the invaluable searches which studied the profitability of the banks to be known, Athanasoglou et al (2008), Pasiouras and Kosmidou (2007), Kosmidou (2006), Goddard et al (2004), Claessens, Demirguc-Kunt and Huizinga (2001) and Demirguc-Kunt and Huizinga (1999,2000). Regulations are one of the most significant characteristics of the sector and can have an effect on the profitability of a commercial bank. If regulators reduce the restrictions placed on banks, banks can start more risky operations (Hassan and Bashir, 2005). If banks take a high level of risk, depositors and shareholders would benefit. In the other side, if the bank’s collapse, the depositors would lose. Islamic banks' funding agreements are typically arranged in such a way as to involve multiple transfers of ownership (the bank or its subsidiary purchases assets that it resells with a margin or leases with a call option), each transfer of ownership assuming the right of transfer. In addition, the regulator obliges the most volatile Islamic banks to hold more equity. In the majority of countries where Islamic banks are located (Qatar, Malaysia, United Kingdom, Tunisia, etc.), regulators claim that Islamic banks should not cause depositors in participating investment accounts to experience losses in their invested capital or a substantial reduction in the return on their deposits. Islamic banks therefore have an implied duty to ensure and guarantee investment by the depositor. Thus, instead of being optional, the exercise becomes obligatory and the participating investment accounts are deemed to be essentially certain resources (Fiennes 2007). So we waited for the lack of specific prudential regulation for Islamic banks to have a positive effect on the profitability of Islamic banks. Although the disparity between Islamic and traditional banks does not minimize the need for regulation and supervision, regulation does not affect their profitability and competitiveness relative to conventional banks (Chapra and Khan, 2000; Hassan and Dicle, 2005).

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Appendix

Table 1. Summary statistics

stat	No. Of obs	Mean	Max	Min	Std.dev	Skewnss	Kurtosis
ROA	**176**	**1.915511**	**30.5**	**-11.88**	**3.467646**	**3.864826**	**32.27924**
ROE	**176**	**9.494318**	**263.95**	**-119.81**	**23.37807**	**6.470236**	**86.16999**
Ovrhea	**176**	**46.01784**	**207.14**	**-283.05**	**41.07977**	**-4.128686**	**37.21802**
Reservs	**176**	**5.186875**	**23.47**	**0.38**	**4.035328**	**1.988445**	**7.390395**
Taille	**176**	**9.909301**	**11.27443**	**8.43489**	**0.613071**	**-0.0913954**	**2.683812**
Deposit	**176**	**0.830612**	**0.924292**	**0.61045**	**0.051286**	**-1.353003**	**5.69665**
Marcap	**176**	**2170.483**	**7906**	**351**	**1302.026**	**1.581676**	**6.10416**
GDP	**176**	**5.644318**	**18.8**	**-2.7**	**3.95952**	**0.9003793**	**5.57904**

Table 2 the correlation matrix

	ROA	ROE	overhead	reserves	taille	deposits	marcap	GDP
ROA	1.0000							
ROE	0.1768	1.0000						
Overhear	-0.1062	0.0267	1.0000					
Reserves	0.0424	-0.0705	-0.0453	1.0000				
Taille	0.2659	0.1106	-0.1185	-0.0797	1.0000			
Deposits	0.1009	-0.0219	0.2415	0.2025	0.2371	1.0000		
Marcap	0.1655	0.0511	0.0172	-0.2759	0.6964	-0.1477	1.0000	
GDP	-0.0055	0.0048	-0.0428	0.1117	-0.0659	-0.0443	-0.0237	1.0000

Table 3

	Coefficients
Dependent variable: ROA	
Overhear	-0.005617 (-0.89)
Reserves	0.1579863 (2.03)**
Taille	-0.3375427 (-0.38)
deposits	5.560505 (0.65)
marcap	0.0006888 (1.91)***
GDP	-0.0110073 (-0.17)
Cons	-1.352201 (-0.13)
Number of banks	22
Adjusted R^2	0.0456
F	3.57
Prob>F	0.000

Table 4

	Coefficients
Dependent variable: ROE	
Overhear	0.0321583 (0.57)
Reserves	0.8109684 (1.15)***
Taille	23.13633 (2.85)**
deposits	139.179 (1.80)*
marcap	.0010828 (0.33)
GDP	-.1764077 (-0.31)
Cons	-342.4151 (-3.72)***
Number of banks	22
Adjusted R^2	0.1034
F	2.84
Prob>F	0.0119

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