Is Islamic bank a substitute or complement to Conventional ones?

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Abstract—The aim of this research is to determine empirically how bank features and the overall financial environment affect differently the profitability of banks utilizing a data set of 51 Islamic banks and 71 conventional banks over the period 2005-2012. We use a dynamic panel data model to notice internal and external factors that explain the bank profitability. The empirical evidence confirms the importance of country level characteristics, and firm level features. In fact, a diversity of internal and external banking characteristics were used to expect profitability. Controlling for macroeconomic environment and industry-specific variables, the results show that high capital-to-asset and loan-to-asset ratios lead to greater profitability. In general, there is no significant difference between interest based banking and free interest bank in respect of profitability there is a divergence in leverage and size.

Key words: Islamic Bank- Conventional Bank- Profitability- GMM- MENA countries.

I. Introduction

Recent decades have seen the emergence of a new finance called Islamic finance. Its particularity is that it puts into practice the principles related to Islamic jurisprudence, in particular prohibition of interest and adherence to other Sharia (Islamic law) requirements. Islamic banking practice started on a modest scale in the sixties and, since then, the practice has grown considerably. Accordingly, many Islamic banks have been established and have developed all over the world recording exceptional growth rate of 10-15% for the last 10 years, which is a much higher rate than in conventional finance. This significant growth is expected to continue in the upcoming years (Schoon, 2009).

The Islamic finance authorizes the business and encourages the spirit of the entrepreneurship, the risk-taking and guarantees for the profit. However, this system forbids the business of money and the interest. This system recommends a sharing of the risks and the earnings between the investor and the entrepreneur in all the forms. In fact, Islamic banks are evidently different from conventional banks; besides, they have many similarities since they are both financial intermediaries. Islamic and conventional finance use different approaches towards the same goal (Venardos, 2005).

The key principles underlying Islamic banking and finance are the prohibition of Riba and adherence to other Sharia (Islamic law) requirements. Since 1960, banks have offered Islamic financial services. These Sharia compliant services now sum-up to a global industry amounting to around $2 trillion in assets, of which 80% is accounted for by Islamic banks (including Islamic windows of conventional banks), 15% Sukuk (Islamic bonds), 4% Islamic mutual funds and 1% Takaful (Islamic insurance) (The Economist, 2014). According to the Islamic Financial Services Board (2013), Iran is the biggest Islamic banking market (accounting for around 40% of global Islamic banking assets) followed by Saudi Arabia (14%), Malaysia (10%) and the United Arab Emirates (UAE) and Kuwait (both with 9% shares). For instance in places such as Saudi Arabia around 35% of banking sector assets are Sharia compliant, statistics are lower for UAE (22%), Qatar (20%) and Malaysia (20%). While Islamic banking and financial assets comprise under 1% of total global financial assets (given Credit Suisse's (2013) estimates of world financial assets), it is a sector that has grown faster than conventional finance since the 2007/8 banking crisis, and this trend is expected to continue into the near future (The Economist, 2014).

Unlike the previous empirical research, this study assesses the issue whether Islamic banks are a substitute or complement to Conventional ones. It enriches the literature in this respect by considering the specificities of Islamic banking sector to identify the determinants of the profitability. Furthermore, this study considers a large sample of 51 Islamic banks and 71 conventional banks operating in the MENA countries between 2005 and 2012. We use a dynamic panel data model to

identify internal and external factors that explain the bank's profitability.

The remainder of this paper is as follow: section 1 exposes the relevant literature review. After a brief preliminary of financial ratios, the econometric specification methodology is summarized in section 2. Section 3 displays results and discussion. Eventually, summary and conclusion are presented.

1. Literature review

Several papers are interested in studying the Islamic bank performance by adopting different methods. While authors focus only on one or a sample of Islamic banks, others try notably to compare Islamic bank performance to conventional ones.

Many papers in literature argue that Islamic banks are superiors to conventional banks in terms of performance (Rosly and AbuBakar, 2003, Samad, 2004; Awan, 2009; Safiullah, 2010). However, studies, which addressed empirically the issue of Islamic banking performance, lead to various conclusions since their period of study; their econometric method and their sample are different. Comparative studies lead to different conclusions of the superiority performance between Islamic and conventional banks. The study of Kader and Asarpota (2007) aimed to evaluate the performance of the 3 UAE Islamic banks and to compare it to 5 conventional banks in the time period 2000 to 2004. The examination of various performance measures are related to profitability, liquidity, risk and solvency, and efficiency. They found that Islamic banks of UAE are relatively more profitable, less risky, less liquid, and more efficient than their conventional counterparts. The study performed by Čihák and Hesse (2008) of twenty banking systems[1] demonstrate that Islamic banks are financially stronger than conventional ones. Many components could influence the bank's profitability: total expense and deposits represent positive and insignificant impact on ROA while a non-interest expense has positive and significant impact on ROA. Also, ROA is significantly affected by total equity to total assets and total loans to total assets. In a recent paper, Čihák and Hesse (2010) compare the stability of Islamic and conventional banks, using data from 20 member countries of the Organization of Islamic Conference (OIC) between 1993 and 2004. They highlight that the small Islamic banks exhibit more stability than similar-sized conventional institutions. In case of Pakistan, Sanaullah Ansari and Khalil-ur-Rehman (2011) conclude that five Islamic banks are much superior to five conventional banks from year 2005 to 2009since they can increase their market share.

Islamic bank deposits increase the profitability more than conventional banks deposits.

In contrast, considering a sample of 18 conventional banks and 22 Islamic banks over the period 1990-2005, Hassan et al. (2009) found that conventional banks were generally more efficient than Islamic banks. Safiullah (2010) concludes that conventional banks are better than Islamic banks in terms of commitment to economy, productivity and efficiency after comparing four conventional banks and four Islamic banks in Bangladesh during 5 years from 2004 to 2008.According to Jaffar and Manarvi (2011), Islamic banks performed since they possess an adequate capital and enjoy a better liquidity position. But, conventional banks performed better in terms of management quality and earning ability. For the period 1991-200, the result of Samad (2004) implies that there is a significant difference in credit performance between Islamic and conventional banks in Bahrain. Nevertheless, there is no important major difference in liquidity and profitability performances between the two sets of banks. Muhammad Hanif et al (2012) select a sample of 22 conventional banks and Islamic banks in Pakistan[2] and argue that conventional banking is better than Islamic in terms of profitability and liquidity. In credit risk management and solvency maintenance terms, Islamic banking leads.

Akhter et al (2011) emphasize that there is likely no significant difference between interest based banking and free interest banking in respect of profitability; there is a divergence in liquidity and credit performance. As Beck et al. (2010), they find no significant difference between Islamic and conventional banks in terms of insolvency risk[3]. Abedifar et al (2011) investigate risk and stability of 456 banks from 22 countries between 2001 and 2008 using two-step GMM technique modeling approach of relationship between risk, capital and bank efficiency. They found no significant difference between Islamic banks and conventional ones in terms of insolvency risk. In credit risk, Islamic banks write-off credits more frequently or/and have lower loan recoverability compared to interest based banks.

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[1] A large sample covering 520 observations for Islamic banks and 3248 observations for 397 conventional banks.

[2] Performance indicators are distinguished on external (customer behavior and perception about both Islamic and conventional banking) and internal bank factors (in terms of profitability, liquidity, credit risk and solvency).

[3]Using a cross-country sample of banks of 141 countries over 1995 to 2007,Beck et al (2010) and conclude that there is little difference in terms of efficiency, asset quality, stability and business orientation of the two types of banks over the whole study period. Profitability is significant and positively correlated to efficiencies measures considered.

Beck, Demirgüç-Kunt and Merrouche (2013) investigate Islamic bank performance issues using a sample of banks from 141 countries over 1995 and 2007. Using a variety of regression approaches (OLS, fixed effects and robust regression) and comparing risk, efficiency and business model features, they find few significant differences between Islamic and conventional banks. Besides, the study of Zarrouk,H. and Ben Jedidia Daoud ,KH. & Moualhi, M., (2016) show that profitability determinants did not differ significantly between Islamic and conventional banks.

2. Data and econometricmodeling
2.1. Data and sample

Most comparative studies concentrated on Islamic banking industry in a single country, and smaller number of studies covers the banking sector in a panel of countries where Islamic banks are operated. Samad (2004) analyses the case of Bahrain over the period of 1991-2001. Rosly & Bakar (2003) and Samad & Hassan (2000) proceed to comparative analysis in Malaysia. Kader and Asarpota (2007) compare Islamic and conventional banks in UAE over the period of 2000-2004. Ahmed and Hassan (2007) compare banks in Bangladesh. However, Olson and Zoubi (2008) and Zrairi (2008) spread their research to more than one country and provide a comparison of both types of banks in GCC region. We extend our comparative analysis to 10 countries including Asian and North African ones.

Data were collected for 51 Islamic banks and 71 conventional banks operating in Qatar, Turkey, UAE, Egypt, Kuwait, Yemen, Sudan, Bahrain, Saudi Arabia and Jordan covering the period of 2005-2012. These countries were chosen because of the importance of Islamic banks in their banking system and data availability.

2.2. Bank profitability indicators

2.2.1. Dependent Variable

There are many ratios that are used to measure the profitability of banks. Most often used are: Return on assets (ROA), Return on equity (ROE), the Net profit margin (NIM). ROA indicates the management's skill to create profits from the bank's assets (Dietrich and Wanzenried, 2011). ROA and ROE are also a frequently used measure for bank profitability. The banks' profit margin, measured by profit-before-taxes over total assets, reveals the banks' adequacy to realize higher profits by diversification of their portfolios (Hassan and Bashir, 2003).

$ROA = \frac{Net\ Income}{Total\ Assets}$ .It measures the total income divided by total assets. This ratio shows the ability of the bank to use its assets to generate income.

$ROE = \frac{Net\ Income}{Shareholder's\ Equity}$. This is the ratio of net income divided by its total equity. It measures the total cost as a percentage of total equity and indicates the ability of the bank to use its own capital to make profits.

$NPM = \frac{Profits\ before\ taxes}{Total\ Assets}$ .This ratio examines the degree of success of an investment compared to its debt situations of company decisions. If this measure is negative, it means that the company has not made optimal decision because the financial costs were higher than the amount of returns generated by investments.

2.2.2. Explanatory variables

The explanatory variables will be of two types, those being the bank characteristic variables and macroeconomic variables (which are used to control for economic and financial structure indicators). The choice of explanatory variables is mostly based on the work of Hassan and Bashir (2003) and Dietrich and Wanzenried (2011).

a- **Microeconomic variables**

$NLTA = \frac{Net\ Loans}{Total\ Assets}$ .Net loans compromise loans to Banks or to credit institutions, net loans and customer loans to business groups. The ratio of net loans to total assets measures the percentage of net loans relative to total assets. A high value of this ratio indicates that a bank is paid and liquidity is low which causes more risk for the bank.

$ETA = \frac{Equity}{Total\ Assets}$ .This is a financial ratio indicating the relative susceptible proportion of own capital to finance the assets of a company. Most of the companies aim at having a high ratio of assets / equity because it shows that they have the good financial strength of lever.

$OVD = \frac{Overhead}{Total\ Assets}$. It serves to estimate the importance of the expenses of personal and other not financial expenses as depreciation allowances and in reserves on tangible assets and immaterial with regard to the total asset of the bank.

$CF = \frac{Consumer\ and\ short-term\ funding}{Total\ Assets}$ .This ratio joins the management of the liquidity to the banking profitability. On the other hand, CF has an inverse relation with the profitability. So more this ratio is lowmore the bank is considered liquid and conversely (Hassan and Bashir, 2003).

LnA: It is an indicator of size of the bank. Guru and al (2002) considered the size of the bank in the model of profitability to consider the flow of the granted loans and the easy access of the big banks to the markets of assets. Furthermore, Demirguc-Kunt and Huizinga (on 1999 and 2001) proved that it has a positive and significant impact on the margins of interest.

NIETA= $\frac{\text{Non Interest Earning assets}}{\text{Total Assets}}$ It informs us about the efficiency of the management of the spending with regard to the assets of the year t.

TAX= $\frac{\text{Total taxes paid}}{\text{before tax profits}}$: Taxes are generally an involuntary fee levied on individuals or corporations that is enforced by a government entity, whether local, regional or national in order to finance government activities.

b-Macroeconomics variables

With the aim of separating the effects of the banking characteristics on the profitability, it is necessary to control other factors which were promoted in the literature as possible determiners of banking performance. In this perspective, we use these external macroeconomic indicators to the bank. These variables are delayed in one year supposing that it takes time for their effects to banks. They include:

GDP: it is the Growth rate of real GDP; it represents the variation relative to the reduction or to the increase of the level of the economic activity in a country. This indicator is used in the short and medium-term forecasts on the economic situation in a country. We expect a positive relation with the banking performance. (Kosmidou and others, 2006; Hassan and Bashir, 2003) move forward that a higher growth of GDP stimulates the demand of bank loans what affects positively the banking profitability. The association between the economic conditions and the performance of financial sector is validated well in the literature (Demirguc-Kunt and Maksimovic, on 1996).

INF: The inflation rate measures the overall percentage increase in the consumer price index for all goods and services. If the inflation is expected to rise that will reduce expenditure and borrowing by firms and households. Since high inflation rates are generally associated with high interest rates on loans, it can impact positively and significantly the bank performance as it is evidenced by empirical studies (e.g. Athanasoglou et al., 2008; Kosmidou et al., 2006; Demirguc-Kunt and Huizinga, 1999).

Table 1. Description of variables

Category	Variables	Measurement	Notation	Expected Effect
Dependent Variables	**Profitability ratios**	Return on assets = Net profit after tax/total assets	ROA	
		Return on equity= Net profit after tax/ equity capital	ROE	
		Net Profit Margin (= Net Interest Margin in the database)	NPM	
Déterminants		**Independent variables**		
Bank-specific	Liquidity	Loan to Total Asset Ratio = Loan/total assets	NLA	+/-
	Leverage	Equity / Total Assets	ETA	+/-
	Funds use Management	Non-interest earning assets over total assets	NIETA	+
		Overhead (non-interest expenses) over total assets	OVD	-
	Funds source management	Consumer and short-term funding over total assets	CF	-
	Size	Ln (Real Assets)	LnA	
	Tax rate	Taxes and mandatory contributions payable (%)	TAX	-
Macroeconomics	Economic activity	Gross domestic product per capita, constant prices	GDP	+
	Inflation	Inflation, average consumer prices Percent change	INF	+/-

Notes: + means positive effect;- means negative effect; +/- either positive or negative effect.

2.3 Econometricmodeling

The general model relating the performance measures to a variety of indicators is specified as follow:

Profitability$_{ijt}$=α$_0$+ α$_i$B$_{it}$+β$_j$X$_{jt}$ +ξ$_{it}$ [1]

$\xi_{it} = \upsilon_i + \mu_{it}$

Where P_{ij} is the measure of performance for bank i in country j at time t. B_{it} are

microeconomicvariables for bank i at time t. X_{jt} are macroeconomics variables for country j at time t. α_0 is a constant, α_1 and β, are coefficients, however ξ_{it} is the disturbance, with υ_i the unobserved bank-specific effect and μ_{it} the idiosyncratic error.

Bank profitability shows a tendency to persist over time (due to impediments to asset quality, market structure imperfections and/or macroeconomic shocks). Therefore, we adopt a dynamic specification of the model by including a lagged dependent variable among the regressors (Athamasoglou et al., 2008). The regression [1] augmented with lagged profitability is:

$$Profitability_{ijt} = \alpha_0 + \partial Profitability_{ij,t-1} + \alpha_1 B_{it} + \beta X_{jt} + \xi_{it} \quad [2]$$

Where $P_{ij,t-1}$ is the one year lagged performance and ∂ the speed of adjustment to equilibrium.

A value of ∂ between 0 and 1 implies that profits persist, but they will eventually return to their normal level. A value close to 0 implies a rather competitive structure of market (high speed of adjustment), while a value of ∂ close to 1 implies that the banking market is less competitive (very slow adjustment).

The quality of the GMM-sys estimates depend mainly one the validity of the matrix of instruments and the assumption that the error term has no autocorrelation. Two tests then proposed are:

- **Test1 (Instruments)**: The matrix of instruments should not be correlated with the disturbance to the regression is correct. This hypothesis is assessed using the Sargan test.

- **Test2 (Autocorrelation residues)**: Residues thus obtained are expected to be correlated to the order 1, but not to order 2. The tests AR (1) and AR (2) of Arellano and Bond (1991) are used to verify this hypothesis.

3. Results and discussion

The analysis of the descriptive statistics of our sample in Table (2) makes the following striking points result: we notice that the average profitability of the shareholders of the conventional banks is superior to that of the Islamic banks (14.88 % against 12.08 %). We notice as well, as the Islamic banks are on average better capitalized than the conventional banks (29.44 % against only 16.39 %). It is clear that Islamic banks lead in the majority of the profitability indicatorsmeasured by ROA or ROE. This indicates that assets of Islamic banks are capable of yielding more return than conventional ones.

The funds source managementindicates an average clearly lower for the Islamic banks. Furthermore, concerning the size of the banks of our sample, it seems that the conventional banks have an active way clearly upper to that of the Islamic banks (15.31 % against 7.65 %).Finally, a comparison of the industry-specific variable shows that tax rate is on-average higher for the conventional banks (15% against 7%). That is a surprise given that regulation is a much higher standard for the conventional banks.

This section analyzes the results of the regression. The data of the sample of 51 Islamic banks and 71 conventional banks are used to answer and spread previous researches over a period going from 2005 to 2012. The dependent variable was delayed, which measures the degree of obstinacy of the profitability, measured by ROA, ROE or NPM, is statistically significant through majority of models, indicating a high degree of obstinacy of banking performance and justifying the use of a dynamic model. Furthermore, the test of Sargan shows no proof of an identification of the limitations in most of the cases. There is no autocorrelation too.

The main purpose of our research is to examine profitability of Islamic and Conventional banks and to determine which factors amongst bank characteristics and macroeconomic/industry-specific environment variables have the utmost effect pertaining to a bank's profitability.

To estimate the relation between the profitability and the internal characteristics of banks, our analysis uses several banking ratios. In our study, we noticed that leverage has a significant and positive effect on all the ratios of profitability in the conventional banks. This positive relationship between the capital ratio and the return on assets is the same for both banks. Strongly capitalized banks have more opportunities to seize investment opportunities. In addition, highly capitalized banks are less exposed to the risk of bankruptcy, so the bankruptcy costs are lower.

This positive sign is due to several factors related to Islamic banks such as lower bankruptcy costs due to the tangibility of bank transactions; transactions and information costs are reduced through diversification of trades and activities in Islamic banks, etc. Previous studies on the determiners of the bank's profitability in the United States found a strong positive and statistically significant relation between leverage and the profitability. Indeed, this ratio, scrutinized as a measure of the risk of insolvency, allows reducing the cost of the borrowed funds. The positive sign of the coefficient was perceived in invaluable searches which studied the banking profitability to be known, Athanasoglou and al (2008), Pasiouras and Kosmidou (2007), Kosmidou (2006), Goddard and al (2004), Claessens, Demirguc-Kunt and Huizinga

(2001) and Demirguc-Kunt and Huizinga (1999,2000).

The regulations are one of the most important characteristics of the industry which can have an incidence on the profitability of a commercial bank. If regulators reduce the constraints compulsory for banks, banks can begin more risky operations (Hassan and Bashir, 2005).

When banks take a high degree of risk, the depositors and the shareholders gain. On the other hand, when banks fail, the depositors lose. We used the rate of tax as a proxy for the financial taxes of regulation which should have a negative impact on profits. The negative impact of the taxation is higher in the classic banks than in the Islamic banks. The negative effect of taxation on conventional banking profitability is explained by the fact that the tax is deducted from the result, which affects ROA and ROE (Demirgüç-Kunt and Huizinga (1999).

However, there is a positive relationship of taxation on the profitability of Islamic banks. In fact, the authorities take into account the taxation of Islamic financing operations in order to avoid double taxation. Islamic banks financing arrangements are generally structured in such a way that several transfers of ownership are required (the bank or its subsidiary buys property which it resells with a margin or leases with a call option), each transfer of ownership assuming a right of transfer (Tribunal, 20 mars 2008, p 23).

Besides, the regulation authority obliges the most risky Islamic banks to hold more equity. In the majority of countries where Islamic banks are located (Qatar, Malaysia, UK, Tunisia, etc.), regulators believe that Islamic banks should not allow depositors in participating investment accounts to suffer a loss in their invested capital or a significant decline in returns of their deposits. Islamic banks, therefore, have an implicit obligation to ensure and guarantee depositor's investments. Thus, instead of being voluntary, the practice becomes compulsory and the participating investment accounts are considered as virtually certain capital (Fiennes 2007).

So we were waiting for the lack of specific prudential regulation for Islamic banks to positively affect the profitability of Islamic banks.While the difference between Islamic and conventional banks does not decrease the need for regulation and supervision, regulation should not affect their profitability and competitiveness relative to conventional banks (Chapra and Khan, 2000; Hassan and Dicle, 2005).

The funds use management OVD is used to give information about the variations of the costs of operations of the bank. Most of the literature support that by reducing the expenses the efficiency improves what increases the profitability of the financial institution, implying a negative relation between the ratio of operating expenses and the profitability (Bourke, 1989). However, Molyneux and Thornton (1992) stipulate a positive relation, persuading that the high profits gained by banks can be attributed in the shape of expenses of payroll paid to more productive human resources. In any case, it should be attractive to identify the dominant effect, in a banking environment developed as Malaysia.

Operating expenses seems to be an important determinant of the profitability. However, their negative effect means that there is a lack of efficiency in the management of the expenses, because banks charge a part of the costs to the customers. According to Guru and al (2002), high costs are linked with a high volume of banking activity and thus with higher income. Thus, an effective management of the costs is essential for a better profitability, and as a consequence there is a significant and positive relation between the cost control and the banking profitability. Certainly, an effective management of the costs is a precondition for the improvement of the of bank's profitability in all countries, which did not reach the level of necessary maturity to connect the effects of the increase of the spending with the increase of the profits of banks. Our results organize themselves with the works of Demirguç-Kunt and Huizinga (1999, 2000) which stipulate that the variable operating expenses deflated by the total active has a positive coefficient in the regression of the margin of interest.

The results show that non-interest earning on total assets ratio has a positive and significant effect on profitability variables in Islamic banks. The greatest part of the earnings of Islamic banks comes from non-interest earning activities, and, consequently, the ratio of non-interest earning assets on total assets has a positive effect on profitability. The earnings diversification strategy refers to the importance of other sources of revenue different from the traditional net profit revenue. These earnings expect the access to financial innovation and new sources of revenue (Harrison et al., 1991).

The positive coefficient of the conventional banks suggests that profit in non-financing activities boosts the bank's profitability. Our finding is in contrast with the empirical study of Izharand Asutaya (2007) concluding that non-interest earning had no statistically significant impact on the Indonesian bank profitability.

Size is a dynamic variable because, as the bank grows and changes scale, its structure is transformed and its management priorities are evolving, so its perception of its environment is broadening.

It is obvious that banks in the rich countries are bigger in size. The big size should favor economies of scale and reduce the cost of the collection and the data processing (Boyd and Runkle, 1993).

Generally, the big banks have the advantage to supply a bigger range of financial services to their customers, and thus to mobilize more funds (Bashir, 1999).

In our study, we found a significant and positive impact to the Islamic banks against a significant and negative effect into Conventional Banks.The impact of size on banking profitability diverges according to the studies. Dietrich and Wanzenried (2011), Rouisi and al (2010) show that size affects positively profitability. Bashir and Hassan (2003) find the same result for Islamic banks; this can be explained by the fact that banks of higher possibility to allowing a greater volume of loans and financing to their clients compared to smaller banks, which increases their return on assets. Moreover, large banks tend to have more diversified portfolios of banks compared to small banks, which reduce their risk. Economies of scale can also result from a larger size.

Pasiouras and Kosmidou (2007), Srairi (2008) and Sanusi & Ismail (2005) show that size affects negatively the profitability. They suggest that if the size of the bank exceeds a certain level, the Profitability declines. This result is due to agency costs, overheads and other costs related to extremely large business management. The study by Athanasoglou and al (2008) reveals that the size of the bank does not matter for profitability. This is that small banks usually try to grow faster, even to the detriment of their profitability. In addition, the newly created banks are not particularly profitable, or not at all profitable, in their early years as they place more emphasis on increasing their share of rather than improving their profitability.

We found a positive relationship between size and the interest margins, which is in line with the study of Atanasoglou et al. (2006) that reports a positive influence of size on profitability, what is explained by the benefits of economies of scale. However, papers that specifically analyze the impact of bank size on interest margins report negative relationship between them (Kasman et al., Saad and el Moussawi, 2012; Hamadi and Awdeh, 2012).

The study indicates that size effect exists, that small and medium sized Islamic banks exhibit higher overall profitability compared to large conventional banks. These results support the hypothesis that the smaller the bank assets are the higher its profitability.

Even though the other bank characteristic variables are not significant, their signs are mostly the same as prior predictions. The only exception is Taxation which has a positive relationship on the profitability of Islamic banks.

The sign of liquidity of Net loans on the total assets (NLA) is positive. This ratio is used to indicate the quality of assets in numerous studies and as measure of the credit risk of the bank. This is coherent with the arguments of evaluation of standard assets which imply a positive relation between the risk and the profit. The empirical studies show that if the ratio of loans is associated with margins of interest higher, the shareholders have an aversion for the risk and look for more important earnings to compensate for the high credit risk (Demirguc-Kunt and Huizinga, on 1999; Flamini and al, on 2009). Lee and Hsieh (2013) also noticed that the relation of the Net loans on the active total is significantly positive with the profitability (ROA and ROE) for 42 Asian countries.

Indeed, an increase of the liquidity indicates that the bank took more financial risk in the massive granting of the credits. This ratio measures the percentage of the totals of assets invested in the financing. In other words, a high ratio implies a higher profitability and thus more risk as it was demonstrated in the study of the profitability of the Islamic banks elaborated by Bashir (2000). Other studies such as Demirguc-Kunt and Huizinga (1997) take the inverse way and warn that a lower value of this relationship reveals that the bank is more liquid, but plans a reduction in profitability.

The Loans of the Bank should be the main source of income, and should have a positive incidence on profits. However, because most of the loans of the Islamic banks are under the form of division of the profits and the losses, the relation of loan-performance depends on the variation expected from the economy.

A higher ratio of loans in Islamic banks suggests that they have a capability to convert deposits into income-earning assets (Kader and Asporta (2007); Samad (2004); Samad and Hassan (2000) and Metwally (1997).

Islamic banks have demonstrated a greater capacity to expand their market share and to provide financing to customers, especially as they are newly established institutions, and there is a strong demand for Islamic financial products to customers who want to comply with Muslim ethics. We note that the number of Islamic banks compared to conventional banks is minimal. Conventional banks tend to have a smaller volume of liquid assets compared to Islamic banks. Hence the negative relationship between bank profitability and the proportion of liquid assets to total assets transformation is profitable for banks. The more deposits are converted into loans, the greater the margin of interest and profit. Our results show that conventional banks tend to have less liquid assets (sign (-) of NLA) and to be more profitable (sign (+) of NIM). A small proportion of the bank's liquid assets (large volume of loans) would increase bank profitability. This positive relationship between NIM and volume of loans is already verified by the studies of Olson and Zoubi (2011), Rouisi et Al (2010), Pasiouras etKosmidou (2007), Naceur et

Goaied (2003), Srairi (2008), Sanusi et Ismail (2005)).

The funds source management (CF) has a negative impact on profitability, indicating that Islamic banks do not lend funds as actively as conventional banks. Since liquidity holding is revealed an expense, the correlation between consumer and short term funding to total assets and profitability is expected to be negative (Hassan and Bashir, 2003).

The ratio of the consumer and short-term funding on the total the assets is a cash ratio which comes near the liabilities. It has a negative relation with the profitability. Our analysis confirms previous studies and demonstrates a negative relationship with the Islamic and Conventional banks.

In the absence of the guaranteed yields, the Islamic banks take a high degree of risk in their operations to increase the expected profits and generate comparable efficiencies for their customers. Nevertheless, if the management of the bank takes too much risk, the depositors can frighten of the safety of their deposits and can even remove them, which engenders an insufficiency of liquidity for the bank. The banking regulators consider that the measures of management are careless; they can intervene to control its operations. On the other hand, if the bank's management takes little risk, the bank would not be very profitable.

In our study, the GDP has a positive effect on the profitability of Islamic and conventional banks contrary to the inflation which presents a negative impact on the profitability.

The inflation has a negative effect on the profitability of banks if salaries and overheads increase more quickly than the inflation rate. Nevertheless, preceding studies revealed a positive relation between the inflation (INF) and the profitability of banks (Bourke, on 1989). For the conventional banks, the high inflation rates lead generally to a higher lending rate, and thus higher income. However, in the case of Islamic banks, the inflation hasa positive impact on the performance if a largest part of the profits of the Islamic banks run as from the direct investment, the shareholding and the other activities of negotiation (of Murabahah).

4. Summary and conclusion

The purpose of our analysis was to ascertain whether structural differences exist between conventional and Islamic banks in term of profitability. In addition, we tried to explain these differences. We specified an empirical frame to study the effect of the banking and macroeconomic specific determinants on the profitability of both Islamic and conventional banks in the MENA region. In our approach, we used variables such as capital structure, size, taxation, funds source management, funds use management, liquidity, macroeconomics and profitability ratios. We built a

sample of 122 Islamic and conventional banks. The data cover a period from 2005 to 2012.

The results show that the capital ratio is important for explaining the profitability in conventional banks. While funds use management are negatively and strongly bound to Islamic banks, showing that the decisions of the cost's management of the bank influence the results of banks.

The study's importance stems from the importance of the subject that the study discusses and deals with. In addition to revealing important information about banks profitability, the study is significant in overviewing the relationship between bank size and profitability in emerging market. The result shows that the size has a significant and a positive effect on the profitability of Islamic banks; however, it has a significant and negative relationship with Conventional banks.

The growth rate of the GDP influences positively the profitability of banks because it affects directly the income of companies and households. The study shows the effect of the specific and macroeconomic variables on the profitability of the banking institution.

Banks have to take into account these variables to improve their performances in particular variables on the quality of assets, the smugness of the capital and the liquidity. Banking institutions have to diversify their sources of income and optimize the costs. The institutions of regulations should establish a better control of the credit risk and the liquidity and to encourage the banking competition.

The preceding empirical analysis allows us to shed some light on the relationship between bank characteristics and profitability measures in Islamic and conventional banks.Moreover, it indicates that the two types of bank are complementary to each other.

These results are a rich indicator of the differences between Islamic and conventional banks. In order to well determine profitability of Islamic banks, further research must take account of other internal and external factors.

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Appendix

Conventional Banks		Countries
Qatar National Bank		Qatar
Emirates NBD PJSC		UAE
National Commercial Bank (The)		KSA
National Bank of Abu Dhabi		UAE
Emirates Bank International PJSC		UAE
Abu Dhabi Commercial Bank		UAE

Samba Financial Group		KSA
National Bank of Kuwait S.A.K.		KUWAIT
Riyad Bank		KSA
First Gulf Bank		UAE
Saudi British Bank (The)		KSA
Banque Saudi Fransi		KSA
Arab National Bank		KSA
National Bank of Dubai Public Joint Stock Company		UAE
Ahli United Bank BSC		Bahrain
Arab Banking Corporation BSC		Bahrain
Mashreqbank		UAE
Union National Bank		UAE
Commercial Bank of Qatar (The) QSC		Qatar
Gulf Bank KSC (The)		KUWAIT
Gulf International Bank BSC		Bahrain
Bank Muscat SAOG		KUWAIT
Burgan Bank SAK		KUWAIT
Doha Bank		Qatar
Saudi Hollandi Bank		KSA
Saudi Investment Bank (The)		KSA
Commercial Bank of Kuwait SAK (The)		KUWAIT
Al Ahli Bank of Kuwait (KSC)		KUWAIT
Commercial Bank of Dubai P.S.C.		UAE
Bank Al-Jazira		KSA
Ahli United Bank KSC		KUWAIT
Awal Bank		Bahrain
BBK B.S.C.		Bahrain
United Saudi Bank		KSA
International Bank of Qatar Q.S.C.		Qatar
National Bank of Bahrain		Bahrain
National Bank of Ras Al-Khaimah (P.S.C.) (The)-RAKBANK		UAE
Bank of Sharjah		UAE
Al Khalij Commercial Bank		Qatar
Ahli Bank QSC		Qatar
National Bank of Oman (SAOG)		KUWAIT
Bank Dhofar SAOG		KUWAIT
Saudi Cairo Bank		KSA
International Banking Corporation BSC		Bahrain
Bank Sohar SAOG		KUWAIT
Arab Bank for Investment & Foreign Trade-Al Masraf		UAE
National Bank of Fujairah		UAE
Commercial Bank International P.S.C.		UAE
National Bank of Umm Al-Qaiwain		UAE

Oman International Bank	KUWAIT
Invest Bank P.S.C.	UAE
Oman Arab Bank SAOG	KUWAIT
Barwa Bank	Qatar
United Arab Bank PJSC	UAE
BMI Bank BSC	Bahrain
Future Bank B.S.C.	Bahrain
Bank Melli Iran	UAE
Commercial Bank of Oman S.A.O.G.	KUWAIT
Ahli United Bank (Bahrain) B.S.C.	Bahrain
Alubaf Arab International Bank	Bahrain
Commercial Bank of Oman S.A.O.G. (Old)	KUWAIT
Bank of Oman, Bahrain and Kuwait SAOG	KUWAIT
Bahraini Saudi Bank (The) BSC	Bahrain
Bahrain Commercial Facilities Company BSc	Bahrain
Al khaliji France SA	UAE
Majan International Bank SAOC	KUWAIT
Credit Europe Bank (Dubai) Ltd	UAE
Commercial Bank of Bahrain B.S.C.	Bahrain
Financial Group of Kuwait KSC	KUWAIT
Industrial Bank of Oman SAOG	KUWAIT
Addax Bank BSC	Bahrain

Countries	Islamic Banks
UAE	Sharjah Islamic Bank 2
	Tamweel PJSC
	Abu Dhabi Islamic Bank 2
	Dubai Bank
	Dubai Islamic Bank plc
	Emirates Islamic Bank PJSC
KUWAIT	Boubyan Bank KSC
	First Investment Company K.S.C.C. International Investor Company, K.S.C. (The)
	Kuwait Finance House
	Kuwait International Bank
Qatar	Qatar International Islamic Bank
	Qatar Islamic Bank SAQ
KSA	Al Rajhi Bank-Al Rajhi Banking & Investment Corporation

	Bank AlBilad
	Islamic Development Bank
TURKEY	Kuveyt Turk Katilim Bankasi A.S. -Kuwait Turkish Participation Bank Inc
	Türkiye Finans Katilim Bankasi AS
	Albaraka Turk Participation Bank-Albaraka Türk Katilim Bankasi AS
BAHRAIN	ABC Islamic Bank (E.C.)
	Albaraka Banking Group B.S.C.
	Arcapita Bank B.S.C
	Bahrain Islamic Bank B.S.C.
	Capivest
	Citi Islamic Investment Bank
	Gulf Finance House BSC
	IIB-International Investment Bank B.S.C.
	Investors Bank BSC
	Khaleeji Commercial Bank
	Shamil Bank of Bahrain B.S.C.
	Unicorn Investment Bank BSC Venture Capital Bank BSC (c)-VCBank
	Seera Investment Bank BSC
	Elaf Bank
JORDAN	Islamic International Arab Bank
	Jordan Islamic Bank
YEMEN	Islamic Bank of Yemen for Finance & Investment
	Saba Islamic Bank 2
	Shamil Bank of Yemen & Bahrain Tadhamon International Islamic Bank
SUDAN	Bank of Khartoum
	Faisal Islamic Bank (Sudan) IslamicCo-operative Development Bank
	National Bank of Sudan
	Sudanese Islamic Bank
	Tadamon Islamic Bank
	Al Salam Bank
	Al Baraka Bank Sudan
	Sudanese Islamic Bank
	Al Shamal Islamic Bank
	Industrial Development Bank
EGYPT	Faisal Islamic Bank of Egypt

Table 2. Summary Statistics

	Islamic Banks			Conventional Banks		
Variables	Obs	Mean	Std.Dev	Obs	Mean	Std.Dev
ROA	339	2.641	7.159	488	2.222	4.505
ROE	339	12.085	17.320	488	14.884	15.025
NPM	332	4.949	6.976	486	3.211	1.311
CF	319	44.813	25.002	485	55.841	15.650
NLA	293	87.759	113.460	483	74.069	33.150
OVD	56	31.164	29.513	302	23.717	39.828
ETA	339	29.446	27.523	488	16.391	10.855
LnA	306	.891	1.575	464	17.666	31.478
NIETA	327	.020	.065	457	5.262	6.235
TAX	244	7.655	2.341	488	15.315	1.636
GDP	72	30.850	15.941	33	37.318	17.777
INF	72	6.858	6.884	33	7.902	8.705

Table 3. GMM-Sys estimation Dép. Variable: ROA (Model 1)

	Islamic Banks		Conventional Banks	
	Coef.	t-stat	Coef.	t-stat
Dep-Vart-1	.106	0.70	.108	1.97
CF	-.065	-0.72	-.011	-0.37
NLA	.0385	0.65	-.001	-0.05
OVD	-.127	-1.34	-.020	-1.02
ETA	.157	0.89	.146	4.50
LnA	.534	2.52	-.018	-7.47
NIETA	72.975	3.65	.0191	0.65
TAX	.040	0.20	-.541	-3.06
GDP	.0158	.36	0.042	1.7

INF	-.0236	-.39	-0.072	-2.21
Sargan test[1]	$\chi^2(5)= 7.364$		$\chi^2(9)=23.732$	
AR (1) [2]	**No autocorrelation**		**No autocorrelation**	

1. The test for over identifying restrictions in GMM dynamic model estimation. The null hypothesis is that the instruments used are not correlated with the residuals.
2. Arellano-Bond test for AR (1) in first differences rejects the null of no first order serial correlation. The test for AR (2) does not reject the null that there is no second order serial correlation.

Table 4. GMM-Sys estimation Dép. Variable: ROE (Model 2)

	Islamic Banks		Conventional Banks	
	Coef.	t-stat	Coef.	t-stat
Dep-Vart-1	.1482	0.74	-.053	-0.92
CF	-.346	-0.57	-.197	-0.56
NLA	.149	0.36	.225	0.83
OVD	-1.173	-2.01	-.337	-1.50
ETA	.936	0.84	1.195	3.14
LnA	4.163	2.33	-.248	-8.99
NIETA	220.453	1.47	.285	0.86
TAX	.808	0.45	-5.072	-2.48
GDP	.285	1.07	.613	2.06
INF	-.107	-.26	.078	.19
Sargan test1	$\chi^2(5)= = 5.828$		$\chi^2(9)= 18.936$	
AR (1)2	**No autocorrelation**		**No autocorrelation**	

1. The test for over identifying restrictions in GMM dynamic model estimation. The null hypothesis is that the instruments used are not correlated with the residuals.
2. Arellano-Bond test for AR(1) in first differences rejects the null of no first order serial correlation. The test for AR(2) does not reject the null that there is no second order serial correlation.

Table 5. GMM-Sys estimation Dép. Variable: NPM (Model 3)

	Islamic Banks		Conventional Banks	
	Coef.	t-stat	Coef.	t-stat
Dep-Vart-1	-.032	-0.62	-.488	-6.89
CF	.125	0.84	.0105	0.72
NLA	-.027	-0.28	.004	0.48
OVD	.095	0.74	.008	0.95
ETA	-.031	-0.16	.008	0.54
LnA	.140	0.42	.001	0.67
NIETA	-34.268	-1.35	.019	1.60

TAX	-.013	-0.03	-.393	-5.23
GDP	.049	2.51	.001	1.34
INF	-.006	-.14	-.001	-1.42
Sargan test1	$x^2(5)= 6.597$		$x^2(9)= 16.825$	
AR (1)2	**No autocorrelation**		**No autocorrelation**	

1.The test for over identifying restrictions in GMM dynamic model estimation. The null hypothesis is that the instruments used are not correlated with the residuals.

2.Arellano-Bond test for AR (1) in first differences rejects the null of no first order serial correlation. The test for AR (2) does not reject the null that there is no second order serial correlation.