Efficiency of Islamic Financial Institutions

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Abstract

Islamic finance is an ethical finance because it encouraged investment in sectors socially responsible. It prohibits investment in the illicit sectors and supports the distribution of profits and losses. In this study, we investigated the efficiency of 21 Islamic banks around the world over a period of five years ranging from 2010 to 2014. We use in this context the ESOP, ROAE, Ooi, CTI, denies understanding overall profitability and the method of wrapping the data (DEA) to calculate efficiency scores.

Index terms— efficiency, Islamic banks, ratio analysis, DEA.

1 Introduction

evertheless, the Islamic finance remains for centuries; it has really begun its activity in 1963 with the birth of the First Islamic bank "Al MITGHAM". Other banks have been emerged in the 1970s with the occurrence of the organization of the Islamic Conference (OIC) namely Al Social Nassar Bank in 1971 and the Bank of Dubai in 1975 to count today more than 500 banks. Indeed, the Islamic finance is supported on the chariaa and therefore it prohibits the Riba, the gharare, the maysire and maintains the sharing of profits and losses. Thus, the Islamic finance is interested only to grant the means available to their jobs. In addition, the Islamic finance has exposed the interest of several researchers. Some have focused on the efficiency of Islamic banks; while others focused to a comparison between the Islamic banks and traditional banks.

Indeed, the efficiency is the reasonable use of available resources in order to achieve the targets set out in advance. In other words, it is the ability to achieve the goals collected while minimizing the means employed. To judge the stability of a firm, it is necessary to judge its productive performance and situate it in relation to its competitors. It is, therefore, to study the efficiency of this last and to examine the manner with which it manages its resources. Subsequently, the efficiency of a company is a topical theme, whatever the size or sector of activity. This is justified by the fact that the improvement of this efficiency involves various strengths to know: reduction of costs, improvement of the quality of product and services offered, gain a competitive advantage, and conquer new markets.

As well, there is a continuum of studies dealing with the efficiency and the performance of Islamic banks. And therefore the findings are mixed: sometimes in favor earlier to the disadvantage of the Islamic banking system.

In this framework, as an important pillar in the process of economic development, a fundamental question is exposed on the determination of level of efficiency or productivity of the Islamic banking sector. And therefore, we ask the following question: Islamic banks are -they technically efficient?

To answer this question, it is necessary, in a first time; throw a glance on the review of the literature concerning the efficiency of Islamic banks and to appeal to the different approaches of measures of technical efficiency in a second time.

2 II.

3 Review of the Literature

Islamic banks are composed of a compliance board to the Chariaa whose role is to monitor the activities of the bank and to ratify its financial transactions based on the principles of the Islamic jurisprudence. As much,

according to Iqbal (1997), a bank is so-called Islamic if some foundations are respected namely the prohibition of the interest (the Riba), the prohibition of excessive risk (Al-Gharar), the distribution of profits and losses, the support of real assets and the prohibition of activities illegitimate. These specificities of Islamic banks have captivated the reflection of researchers checking to study if in respecting the provenances of Islam, these financial institutions are they efficient.

The main products of Islamic banks are presented in the following table:

4 Mousharaka

A contract for the participation of two or more parties in the capital and the management of a same case, it is a partnership with allocation of losses and profits.

5 Mourabaha

A contract of purchase and resale with a profit margin prefixed in advance, that is to say that the bank buys a supplier a tangible property at the request of its client, the well is resold to the customer at a price equal to the cost of purchase plus a margin.

6 Ijarah

A leasing contract or lease by which a bank buys a well for the completion of a project and the rents to a company for an amount and a maturity agreed.

7 Al-Istisnaa

Brings together the Moustasnii (invest isseur) and the Sanii (Contractor manufacturer) for the execution of a property for a fee payable in advance. The two parties will agree on the price and the time of delivery.

8 The Bai al-Salam

This technique is to pay in advance of goods predetermined. And the financial pays the price of the asset in advance for a delivery date deferred.

9 Qard-Hasan

It is a loan without interest often supported to a guarantee, granted by the Bank to its customers in order to cope with circumstances distinctive (death, marriage, child education?.).

The Sukuks Are an Islamic commitment backed by a tangible assets. They indicate a right of debt during a specified period and they are attached to investment funds where the risk and yields assistants are predefined.

In effect, the Bank Literature Analysis Two types of efficiency: the efficiency of scale and technical efficiency. First of all, the efficiency of scale is defined according to Yudistira (2004) as "the ratio between the cost and the volume of production of a bank". Similarly, **??**arell (1957) has distinguished between technical efficiency and allocative efficiency. With respect to technical efficiency, discerning its origin in the theoretical work of fundamental Debreu (1951), **??**oopmans (1951) and Farrell (1957), it is to seek the optimal output that can create according to a certain level of inputs. In other words, it is to achieve a certain level of output with a minimum of inputs. While a firm is called allocativement efficiently if it uses the programs of productions are less expensive and which ensure the profit the most high that is to say that it uses the inputs of production in the optimum proportions taking into account their market price.

On the empirical plan, a diversity of work are centralized on the study of the efficiency of Islamic banks based on multiple methods including the method of financial ratios, traditional non-parametric method (analysis of wrap data (DEA)) and the method parametric (analysis of the stochastic border (SFA)).

For the method non-parametric DEA has been developed by **??**arell (1957) in his article "The Measurent of productive efficiency". The DEA allows you to determine the maximum of inputs to inject into a mechanism of production beyond which the profit fall. It consists of user the mathematical programming to build a border in fractions (part-wise surface) based on a set of data of the production units. Of this fact, the efficiency of a unit of production is calculated by report to this border in fragments.

As to the stochastic approach, named yet" model to errors composed", is developed by Aigner, Lovell and Schmidt (1977), **??**eeusen and Van den Broek (1977). It decomposes the error term into two components: On the one hand, a component of inefficiency by report to the border that follows an asymmetrical distribution defined positively to a production function, and on the other hand, a component of random error representing the measurement errors and the exogenous shocks that follows a symmetrical distribution Normal.

In this context, based on the method of financial ratios traditional, Samad (2004)

10 Framework of the Study a) Presentation of the sample

The necessary information is collected via the annual reports of Islamic Banks sample of our study: six banks represent the Africa (Tunisia, the Sudan, Egypt, Senegal, Tanzania and the Nigiria), seven belong to Asia

(Bangladesh, Malaysia, Pakistan, Brunei, Indonesia, Sri Lanka and Thailand), three in Europe (Switzerland, the United Kingdom and Turkey), and finally five located in Middle East (Saudi Arabia, Kuwait, Qatar, Dubai and the Emirates-Arabes-United). These data relate to a period of study extending from 2010 to 2014.

11 b) Research Methodology

In order to understand the efficiency of Islamic banks, we use jointly the analysis by the financial ratios and the method DEA.

? The method of financial ratios: According to Farell **??**1957), in order to assess the average productivity of banks, the founding chronic centralised on the analysis of the efficiency of the banks have had recourse to certain ratios to know the market share (Smirlock, 1985 and Evanoff & Fortier, 1988), ratios of profitability, efficiency, liquidity, etc... And this is to differentiate between conventional banks and Islamic banks (Olson & Zoubi, 2008) or either to compare the efficiency of different Islamic Banks (Qureshi & Shaikh, 2012).

The variables of the method of financial ratios are summarized in the following table:

12 Interpretation of Results

13 a) Analysis by the ratios

The method of analysis by the ratios aims to clarify the level of the performance of a bank according to its capacity to operate revenues and to control costs.

To this effect, we use the test of Spearman correlation coefficient and the descriptive statistics in order to judge the performance of Islamic Banks object of our study. Based on the test results of the Spearman correlation coefficient, we see a relationship significantly negative between the performance of the average assets invested (ESOP) and efficiency income (OOI). While, the correlation between Efficiency Profit (measured by the performance of the own funds ROAE) and the efficiency income is significantly positive. However, concerning the ratio of efficiency cost (ITC) and the efficiency profit (ESOP and ROAE) are positively and significantly correlated. While, for the ratio denies this relationship is not significant. Thus, our results certify the idea obtained by Qureshi and Shaikh (2012) who have concluded a significant positive correlation between scores of efficiency and the two ratios of profit (ESOP and ROAE).

14 ? Correlation between variables

? Rank of banks according to the mean and standard deviation of the Ratios Has the basis of the results of this table, we discern that the overall situation of the banks, the subject of our sample, is generally in degradation during the period of study with a few improvements relatively low. This is justified in large part by the consequences of the subprime crisis which has slightly affected the Islamic banks than those conventional.

However, despite the consequences of this situation, various banks including Albaraka Turkey, Dubai Islamic Bank, Islamic Bank of Senegal and Bank Muamalet Indonesia have experienced an improvement of indicators of their performance (ESOP, ROAE, OOI) while the ratios of efficiency cost (ITCS and denies) have experienced a decrease. By contrast, Albaraka Egypt, Amana Tanzania, Saudi Arabia Al-Inma, Dar Al-Islami Trust Switzerland, Emirates Global Islamic Bank Limited Pakistan, European Investment Bank United Kingdom, Boubyan Bank Kuwait, Lotus Halal Capital Investments Nigiria, Islamic Bank of Thailand and Islamic Bank Bangladesh Limited have been marked by a decrease in the ESOP and ROAE and an increase in other ratios. While, Affin Babk Malaysia and Bank Islam Brunei

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Darussalam have been characterized by an improvement of these different ratios of profit, revenue and cost.

In effect, based on the classification by ratios of different banks, we note that Albaraka Tunis, Al-Inma Saudi Arabia, Islamic Bank of Senegal, Bank Islam Brunei Darussalam, Albaraka Turkey and Bank Muamalat Indonesia have captured the first rows in term of average of ratios profit, income and cost. As well, the banks of Nigiria, U.K., Tanzania, Egypt, Kuwait, Bangladesh, Qatar and Sudan occupy the last row in terms of efficiency benefit, revenue, and cost.

In addition, we can see that the banks having spent the first ranks in terms of profit are those which have managed to combine efficiency with income cost efficiency. Yet, the barriers of the overall efficiency of the Islamic financial institutions are justified by an institutional environment and culture not favorable to the development of Islamic banks, lack of the spirit of competitiveness, the lack of experience in the marketing of products and services appropriate to the Chariaa and/or poor management of costs.

17 b) The method of wrapping the data (DEA)

The DEA method is a technique of "benchmarking" where the scores of efficiency shall inform on the margin for improvement of efficiency in terms of the consumption of inputs and production of output. Therefore, the DEA is a tool to aid in the decision. It is, again, to a non-parametric method. She has known an exponential success since its appearance. Of this fact, Emrouznejad et al (2008) stipulate that more than 4000 research articles relating to this method have been published in scientific journals. As well, the approach DEA measure the efficiency based on a set of outputs and inputs. It is to measure the efficiency of a unit of decision by calculating the relative difference between the point representing its values of inputs and outputs observed by report to a hypothetical point on the border of production. In other words, the border of production is appreciated by a envelope curve formed segments of the right assembling the entities efficient. And therefore, all the points examined are placed on or under the Border of production.

In effect, the term efficiency refers to an optimal situation; that is to say a level of maximum output for a given level of input or a level of input minimum for a given level of output. In addition, the technical efficiency (TE) measure the ability to create the maximum amount of goods with a certain level offered to factors of production. In other words, it is the ability to use the minimum of factors of production in order to produce a given quantity of goods. In addition, technical efficiency defines the set of output and input in physical terms. And therefore three main types are to discern. First of all, the efficiency cost where the outputs are moderate in physical terms and the inputs in physical terms and monetary policy. Then, a efficiency income according to which the outputs are measured in physical terms and monetary policy and the inputs in physical terms. And finally, a profit efficiency where the outputs and inputs are expressed in physical terms and monetary policy.

In turn, the DEA method decomposes the technical efficiency in: Efficiency pure technique (TPE) and the efficiency of scale (SE), which is determined according to a model with yields of scale variables (increasing returns to scale or decreasing). Technical Efficiency pure relates to the inefficiency linked to a management perfectible; that is to say that a company is called inefficient if its management is perfectible and, therefore, the company is poorly managed. Whereas, the efficiency of scale refers to the inefficiencies linked to a size not optimal; that is to say a company is called inefficient if it has not reached its optimal size. In contrast, the yields of scale can be either croissants, called IRS so it is an economy of scale, either decreasing, designated DRS and it is in this case a diseconomy of scale.

In the light of the following table, we have determined the scores of efficiency via an Option DEA Where t=5 (the number of periods), p=3 (the width of the window) and W=3 (the number of windows). The score of the technical efficiency average pure during the whole period of the study is to the order of 90.39% which means that the Islamic banks of our sample would have been able to create the same quantity of output operated with only 90.39% of worn inputs where a loss of 9.61% of resources. As well, we note that the average scores PTE exceed those of TE; this is explained by the fact that the PTE are the TE excluding any inefficiencies of scale. This conclusion is confirmed by that of Niazi (2003). Still a technical efficiency of 65.41% means that in total the Islamic banks can reduce all inputs of 34.59%. Similarly, a value of technical efficiency of pure 90.39% implies that a better management allows you to reduce the consumption of input of 9.61%.

Yet, for the banks of Pakistan and Turkey, in improving the way in which the banks are managed, respectively 12.7% and 39% of inputs can be saved. And by adjusting the size of the banks, the consumption of inputs can be reduced respectively of 8.1% and 32.7%. Similarly, for the Bank of Emirates, she is well managed since its technical efficiency pure reached a level of 100%. Of this fact, it cannot improve its efficiency pure. Therefore, the margin for improvement is located in an adjustment of its size in saving 0.3% of inputs. The same case for the banks of Dubai, Nigiria, Sri Lanka and Saudi Arabia who display a technical efficiency of pure 100%.

In addition, in order to better identify the nature of the returns to scale and to explain the inefficiencies of scale if it exists, we have used on the same database another model NIRS (Non-Increasing Returns to Scale). Of this fact, if the CRS score is equal to the Score VRS, then the Bank operates with constant returns to scale (CRS), in other words, an increase of inputs is worth a corresponding increase of outputs (it is the case of Qatar International Bank, Amana Tanzania, Bank Islam Brunei Darussalam, Dar Al-Islam Switzerland and Bank Muamalat Indonesia).

Whereas, if the score CRS is different from the VRS score, therefore the Bank operates with yields of scale variables (VRS) which means that an increase in inputs should be an unequal increase of outputs. And therefore, the yields of scale can be croissants (IRS: increasing returns to scale) if the increase in outputs exceeds the inputs, or descending (DRS: decreasing returns to scale) in the case where the increase in outputs does not exceed that of the inputs. Thus, to determine if it is of IRS or DRS, we supported on a comparison of scores to VRS NIRS scores. Of this fact, according Coelli et al. (1998), if the VRS score is equivalent to the Score NIRS, the Bank operates with decreasing returns to scale DRS. By contrast, if the score VRS is different from the NIRS score, the Bank operates with increasing returns to scale IRS.

Thus, we have compared the contribution of scores of technical efficiency pure (PTE) to the efficiency of scale is for the determination of technical efficiency (TE), we discern a domination of the technical inefficiency pure in report to the inefficiencies of scale for the following banks: "AL Baraka Tunisia", "Albaraka Sudan", "European Islamic Investment Bank United Kingdom", "Islamic Bank of Senegal", "Islamic Bank Bangladesh Limited" and "Affin Bank Malaysia". This justifies a inefficient management of these banks concerning the exploitation of these resources despite the fact that they operate on a scale relatively optimal.

In effect, these inefficient banks throughout the period and operate with decreasing returns to scale. As to "Emirates Global Islamic Bank Limited Pakistan", "Emirates Islamic" and "Al-Inma Saudi Arabia", they are also inefficient on the entire period but operate with increasing returns to scale. Whereas, "Qatar National Islamic Bank", "Islamic Bank of Thailand", "Bank Muamalat Indonesia", "Dar Al-Islam Swiss Trust", "Bank Islam Brunei Darussalam" and "Amana Tanzania " prove efficient. Yet, Srairi and Kouki (2012) stipulate that small banks tend to operate in CRS or IRS with banks of large size extend to operate in CRS or DRS. This conclusion is adequate to our achievements as the banks of our sample operating in IRS are of small sizes (depending on the natural logarithm of the total active) from banks of large size operating in DRS.

V.

18 Conclusion

Islamic finance is today an important growth across the world and is becoming more and more necessary as a competitor of the finance the so-called "conventional". It is for this reason, this paper represents a study of the efficiency of a sample of a few Islamic banks on a global scale. This study is interested in 21 Islamic banks whose data have been gathered at the basis of the annual reports of the banks over a period extending from 2010 to 2014. Our conclusions are based on the outputs of two methods: the method of financial ratios and to the method DEA.

This work would allow practitioners, through the evaluation of the performance of the Islamic banking sector to undertake the necessary corrective action in the event of under-performance and contribute to a better allocation of financial resources; and the results that are derived could thus constitute a tool to help the decision making for the monetary authorities having recently introduced products and islamic banking.

In the light of the method of analysis by the ratios, we discern Albaraka Tunis, Al-Inma Saudi Arabia, Islamic Bank of Senegal, Bank Islam Brunei Darussalam, Albaraka Turkey and Bank Muamalat Indonesia has monopolized the first positions in term of average of ratios ROAE, ITCS and NTE. As much, the banks of Nigiria, U.K., Tanzania, Egypt and Kuwait must their first ranks in terms of efficiency in terms of standard deviation. With regard to the banks of Bangladesh, Qatar and Sudan have dedicated the last row in terms of efficiency benefit, revenue, and cost.

Similarly, the test of Spearman correlation has allowed us to find that the analysis by the ratios and the DEA lead to concordant results. As well, these two methods are complementary.

In effect, the method DEA presents interesting outcomes: the majority of banks in our sample are technically inefficient, with an average loss of 9.61% of inputs to the production of the same level of output to the exception of "Qatar International Islamic Bank", "Islamic Bank of Thailand", "Bank Muamalat Indonesia", "Dar Al-Islam Swiss Trust", "Bank Islam Brunei Darussalam" and "Amana Tanzania". Of course, the results and conclusions acquired at the end of this work are approvable only for the sample and the period in question. However, this work may constitute a starting point for other subsequent studies in what it would be advisable to introduce other variables of efficiencies.

19 Bibliographies

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Figure 1:

1

Figure 2: Table 1 :

2

Variable Size of the bank Esop (Return on average asset) ROAE (Return on average equity) OOI (other operating income) Itcs (cost to income ratio) Denies (ratio Cost) ? The method of DEA allows exploring the level of Meaning Control Variable Profit Efficiency Income efficiency Cost efficiency	Definition Natural logarithm of the total of assets Net result/average total assets Net result/equity capital Other operating revenue/average total assets Overhead/GNP Other costs that interests/average total assets	Year Volume XVI Issue VI Version I ( ) Global Journal of Management and Business Research
efficiency of a bank, over time, using the resources		

[Note: to achieve an output well determined. As well, prior to resorting to the DEA for the study of the efficiency of Islamic banks in our sample, we begin first of all by the exposure of our variables are summarized in the following table:]

Figure 3: Table 2 :

3

Inputs

Figure 4: Table 3 :

4

		Esop	Roae	Ooi	Itcs	The NTE
Esop	Correlation	1.0000				
Roae	Correlation	0.6285***	1.0000			
	Prob	0.0000				
Ooi	Correlation	-0.3573***	0.0670	1.0000		
	Prob	0.0002	0.4968			
Itcs	Correlation	0.1403	0.1222	-0.0392	1.0000	
	Prob	0.1535	0.2144	0.6915		
The NTE	Correlation	0.2700***	0.1753*	0.1828*	0.2140**	1.0000
	Prob	0.0053	0.0737	0.0619	0.0284	

* level 10%
** Level 5 and 10%
*** Level 1%, 5% and 10%

Figure 5: Table 4 :

5

Rank		According to the Average					According t	
Banks		ROAA	ROAE	OOI	CTI	NTE	ROAA	RO
Affin Bank (Malysie)		9	8	1	1	17	12	8
Al-I NMA Bank (Saudi Arabia)		2	9	1 2	10	21	15	18
Albaraka Sudan		8	10	13	7	12	14	17
Albaraka Tunisia		1	2	3	3	4	20	20
Albaraka Turkey		5	3	2	17	14	17	21
Albaraka (Egypt)		21	20	17	13	16	1	2
Amana (Tanzania)		13	18	7	19	13	2	3
Amana (Sri Lanka)		17	15	10	21	7	10	16
Bank Islam Brunei Darussalam		4	7	6	14	3	8	15
Bank Muamalat (Indonesia)		6	1	19	16	20	16	14
Islamic Bank of Senegal		3	5	16	15	8	6	6
Boubyan Bank (Kuwait)		15	13	9	5	15	5	9
Dar Al-Islamic Trust (Switzerland)		12	12	8	18	19	7	10
Dubai Islamic Bank		7	6	18	20	16	9	13
Emirates Islamic Bank		16	14	5	11	6	11	7
Emirates Global Islamic Bank Limited (Pakistan)		18	19	14	6	5	13	11
European Islamic Investment Bank (United Kingdom)		19	16	11	2	11	3	12
Islamic Bank Bangladesh Limited		10	4	4	4	1	19	5
Islamic Bank of Thailand		14	21	20	12	2	17	4
Lotus Halal Capital Investments (Nigiria)		19	21	21	8	18	4	1
Qatar International Islamic Bank		11	11	15	9	9	18	19

Figure 6: Table 5 :

6

	Banks	Country	TE	TPE	SE	Return to scale
B1	Dubai Islamic Bank	Dubai	77.2%	81.7%	94.4%	DRS
B2	European Islamic Investment Bank	United Kingdom	18.8%	92.3%	20.4%	DRS
B3	Boubyan Bank	Kuwait	58.4%	66.8%	87.5%	DRS
B4	Islamic Bank of Senegal	Senegal	16.7%	84.3%	19.8%	DRS
B5	Islamic Bank Bangladesh Limited	Bangladesh	16.9%	75.1%	22.5%	DRS
B6	Albaraka	Sudan	54.3%	98%	55.4%	DRS
B7	Albaraka	Tunis	61.3%	90.5%	67.7%	DRS
B8	Lotus Halal Capital Investments	Nigiria	22.5%	100%	22.5%	DRS
B9	Affin Bank	Malaysia	6.4%	72.4%	8.9%	DRS
B10	Albaraka	Egypt	87%	88.8%	97.9 %	DRS

Figure 7: Table 6 :

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