Journal of Research in Economics and International Finance (JREIF) (ISSN: 2315-5671)
Vol. 4(2) pp. 27 - 33, February, 2015
DOI : http://dx.doi.org/10.14303/jrief.2015.100
Available online http://www.interesjournals.org/jreif

Full Length Research Paper

Islamic and conventional banks: Efficiency and stability during the current crises

Afifa Ferhi*[1] and Ridha Chkoudali[2]

[1] Higher Institute of Management of Tunis
[2] Faculty of Economics and Management, University of Nabeul, Tunisia

Corresponding author email address: Ferhi_afifa1983@yahoo.fr

ABSTRACT

The aim of this study is to compare the efficiency and stability of Islamic and conventional banks in 14 MENA countries over the period 1990-2010 using both the static frontier analysis (SFA) and the DEA. The empirical results show what is not considered Islamic banks as a financial system that are characterized by efficiency superior to conventional banks.

Keywords: Efficiency, Stability, Islamic banks, Conventional banks, DEA, Stochastic frontier analysis (SFA).

INTRODUCTION

Banks operate in a highly competitive environment and their long-term sustainability is largely determined by their degree of efficiency. It should also be noted that the efficiency of a financial system, where the banking system dominates the productive sector, necessarily involves the efficiency of the banking intermediation.

Islamic banking is no exception to this standard. Indeed, in an unstable economic environment characterized by a multiplicity of financial crises, attention is gradually moving towards the techniques of Islamic finance since the financial system based on the principles of Sharia proves to be stable and resistant in front of the conventional system failures. Therefore, it has now become urgently necessary for Islamic banks to enhance their efficiencies to take advantage of this opportunity.

The main objective of this research paper consists in measuring, in the following sections, the efficiency of the Islamic financial system. We will later compare the efficiency of financial banks and their conventional counterparts. However, we should first understand the terms "conventional banks", "Islamic banks" and "banking efficiency."

Islamic finance is based on the principles of Sharia which require justice, transparency and fairness. It differs from conventional financial practices through a different conception of the values of capital and labor. Thus, these practices emphasize ethics and morals which take their sources from the divine revelation and from the Sunnah while building economic and financial practices at the time of the Prophet Mohamed "the salvation of God be upon him ".

In general, banks are located in a highly competitive environment besides; their long-term sustainability is largely determined by their degree of efficiency. It should also be noted that the efficiency of a financial system, where the banking system dominates the productive sector, necessarily involves the efficiency of the banking intermediation.

In this research, we will see the difference between the efficiency of the Islamic banks and that of the conventional ones in 29 countries. In the following sections, we will discuss the research methodology followed by the results and so that we can draw a conclusion in the final section of the research.

LITERATURE REVIEW

There is a plentiful literature on the efficiency of banking institutions: detailed reviews can be found somewhere else (Allen N. Berger and David B, 1997, Humphrey Berger and Mester, 1997; Brown and Skully, 2002, Kabir Hassan, 2006, Estelle Brack and Ramona Jimborean, 2009). A small subset of this literature focuses on Islamic

Table1. Islamic banking efficiency studies

Context	Studies
No significant difference in efficiency between Islamic and conventional banks	
▪ Five countries: Bahrain; Kuwait; Singapore; Qatar; UAE	Grigorian and Manole (2005)
▪ Malaysia	Mokhtar et al. (2006)
▪ Twenty one countries: Bahrain; Bangladesh; Brunei; Algeria; Egypt; Gambia; United Arab Emirates; Indonesia; Jordan; Kuwait; Lebanon; Qatar; Malaysia; Pakistan; Saudi Arabia; Senegal; Tunisia; Turkey; Yemen; Sudan; Iran	Bader (2008)
▪ Eleven countries: United Arab Emirates; Egypt; Bahrain; Jordan; Kuwait; Lebanon; Qatar; Saudi Arabia; Turkey; Yemen; Tunisia	Hassan et al. (2009)
Islamic banks are significantly more efficient than conventional banks	
▪ GCC: Oman; Bahrain; Kuwait; Qatar; Saudi Arabia; UAE	Al-Muharrami (2008)
Islamic banks are significantly less efficient than conventional banks	
▪ GCC: Oman; Bahrain; Kuwait; Qatar; Saudi Arabia; UAE	Srairi (2010)
The efficiency of Islamic and conventional banks is compared, but the significance of any difference is not tested	
▪ Cross-country: Conventional banks in the USA and randomly drawn Islamic banks	Said (2012)
▪ Four countries: Saudi Arabia; Jordan; Egypt; Bahrain	Al-Jarrah and Molyneux (2005)
Studies of Islamic banks only	
▪ Twenty one countries: Brunei; Egypt; Gambia; Algeria; Bahamas; Bahrain; Bangladesh; Indonesia; Iran; Jordan; Kuwait; Lebanon; Malaysia; Mauritania; Qatar; Saudi Arabia; Sudan; Tunisia; UAE; UK; Yemen	Hassan (2005, 2006)
▪ Sixteen countries: Bahrain; Bangladesh; Egypt; Pakistan; Saudi Arabia; Turkey; UAE; Gambia; Indonesia; Iran; Kuwait; Malaysia; Qatar; South Africa; Sudan; Yemen	Sufian (2009)
▪ Thirteen countries: Algeria; UAE; Yemen; Bahrain; Bangladesh; Brunei; Egypt; Indonesia; Jordan; Kuwait; Malaysia; Qatar; Sudan;	Viverita et al. (2007)

banking either alone or in comparison to conventional banking (observe Table 1 for details of studies which use frontier estimation methods to derive measures of efficiency). The rest of this section will center predominantly on the comparative literature.

The results of studies previous empirical of Islamic and conventional banking is mixed: some of them found that there is no significant difference in efficacy between the two types of banking. (El-Gamal and Inanoglu, 2005; Bader, 2008; Hassan et al., 2009; Shahid et al., 2010); some studies do not test whether observed differences in efficiency are significant and this is mainly because to small sample size (Al-Jarrah and Molyneux, 2005; Said, 2012). One study (Al-Muharrami, 2008) indicated that Islamic banks are significantly more efficient than conventional banks, but results of significance tests are not shown, and the result is based on a sample which just contains 7 Islamic banks. Only a few studies find, as expected in advance, that Islamic banks are significantly less efficient than conventional banks, but the possible reasons for the gap are not explored further (Mokhtar et al., 2008; Srairi, 2010).

These studies are attractive and present a way forward in terms of isolating the underlying causes of the different performance of Islamic and conventional banks. It is necessary, however, for a comparison of efficiency between conventional and Islamic banks based on a large sample of banks by an approach which makes no underlying assumptions regarding the banks' objectives, and which allows for inter-bank differences in outlook.

DATA AND MODEL SPECIFICATION

The data used in this part of our study are preliminary data about 209 Islamic and conventional banks in 29 countries over the period 1999-2010. The sample consists of financial institutions found in the database of the Bank Scope.

In our study, efficiency is measured using the (SFA) parametric approach and the (DEA) non-parametric approach.

Using the SFA method, we will proceed to the explanation of costs and profits. The form used in this type of analysis is essentially based on the translog form. Let Y be the endogenous variable that can take the value of the total cost (TC).

Three outputs (y1, y2, y3) and three inputs (I1, I2, I3) are taken into account. It should be pointed out that in the expression of the cost function; the inputs are presented according to their prices, where p1 is "Personnel expenses", p2 "other expenses", and p3 "interst expenses". The outputs and the shape of the cost function are considered in terms of quantities. Therefore, the general form of this expression is presented as follows:

Table2. Estimating the Translog cost frontier

Variables	*variable time*		*invariable time*	
	Coefficient	*P value*	*Coefficient*	*P value*
Ly1	-0.3790551	0.000	-0.271085	0.000
Ly2	-0.1525923	0.018	-0.1199987	0.067
Inflation	0.0044499	0.009	0.0050373	0.002
Type	-0.1366234	0.193	-0.1065021	0.373
Size	0.3483109	0.000	0.3930674	0.000
Market Share	0.4068711	0.000	0.2967125	0.03
Risk-Taking	-0.0534136	0.000	-0.0648248	0.000
_cons	8.902392	0.000	7.6328011	0.015

$$LogCT = \alpha_0 + \sum_{m=1}^{n=3}\alpha_m Ly_m + \sum_{s=1}^{k=3}\beta_s LogP_s + \alpha_t t + \tfrac{1}{2}\alpha_u t^2 + \tfrac{1}{2}\sum_{m=1}^{3}\sum_{m'=1}^{3}\zeta_{mm'}Ly_m Ly_{m'} + \tfrac{1}{2}\sum_{s=1}^{3}\sum_{s'=1}^{3}\zeta_{ss'}Lp_s Lp_{s'}$$
$$+ \sum_{m=1}^{3}\sum_{s=1}^{3}\gamma_{ms}Ly_m Lp_s + \sum_{m=1}^{3}\delta_{mt}tLy_m + \sum_{s=1}^{3}\delta_{st}tLp_s + \gamma_E \ln E + \tfrac{1}{2}\gamma_{EE}(\ln E)^2 + \varphi_{E1}\ln E.Ln(p_1) + \varphi_{E2}\ln E.Ln(p_2)$$
$$+ \varphi_{E3}\ln ELp_3 + v'Z$$

where Z is a vector of the control variables.

For the correct specification of the model, some hypotheses should be applied, the most important of which is the homogeneity regarding the prices. In other words, the following relationship should be checked:

$$LnCT(Y_1,Y_2,Y_3;\lambda p_1,\lambda p_2,\lambda p_3;t) = LnCT(Y_1,Y_2,Y_3;p_1,p_2,p_3;t) + Ln\lambda$$

Checking the above hypothesis leads us to draw the following constraints:

$$\beta_1 + \beta_2 + \beta_3 = 1$$

$$\begin{cases}\zeta_{11}+\zeta_{12}+\zeta_{13}=0\\ \zeta_{22}+\zeta_{12}+\zeta_{23}=0\\ \zeta_{13}+\zeta_{23}+\zeta_{33}=0\end{cases}$$

$$\begin{cases}\gamma_{11}+\gamma_{12}+\gamma_{13}=0\\ \gamma_{21}+\gamma_{22}+\gamma_{23}=0\\ \zeta_{31}+\zeta_{32}+\zeta_{33}=0\end{cases}$$

$$\zeta_{tp1} + \zeta_{tp2} + \zeta_{tp3} = 0$$

By applying the above constraints on the fundamental form, we get the following reduced form:

$$Ln\left(\frac{CT}{p_3}\right)_{it} = \alpha_0 + \sum_{n=1}^{m}\varphi y_n + \beta_1 L\left(\frac{P_1}{P_3}\right)_{it} + \beta_2 L\left(\frac{p_2}{p_3}\right)_{it} + \alpha_t t + \frac{1}{2}\alpha_{tt}t^2 + \frac{1}{2}\zeta_{11}(LY_1)^2 + \frac{1}{2}\zeta_{22}(LY_2)^2$$
$$+ \frac{1}{2}\zeta_{33}(LY_3)^2 + \zeta_{12}LY_1LY_2 + \zeta_{13}LY_1LY_3 + \zeta_{23}LY_2LY_3 + \frac{1}{2}\zeta_{11}\left[L\left(\frac{p_1}{p_3}\right)_{it}\right]^2 + \frac{1}{2}\zeta_{22}\left[L\left(\frac{p_2}{p_3}\right)_{it}\right]^2$$
$$+ \zeta_{12}L\left(\frac{p_1}{p_3}\right)_{it}L\left(\frac{p_2}{p_3}\right)_{it} + LY_1L\left(\frac{p_1}{p_3}\right)_{it} + \gamma_{22}LY_2L\left(\frac{p_2}{p_3}\right)_{it} + \gamma_{31}LY_3L\left(\frac{p_1}{p_3}\right)_{it} + \gamma_{32}LY_3L\left(\frac{p_2}{p_3}\right)_{it} +$$
$$\delta_{tp1}tL\left(\frac{P_1}{P_3}\right)_{it} + \delta_{tp2}tL\left(\frac{p_2}{p_3}\right)_{it} + v_1\,\text{inf}\,lation + v_2 TYPE + v_3 depliab + v_4 size + v_5 dpop +$$
$$v_6 marketshare + v_7 risktaking + v_8 cgdp + \varepsilon_{it}. \quad (2)$$

Using the same inputs and outputs, we proceed to the study of efficiency using the nonparametric approach based on the DEA method. We will present the results of efficiency scores along with the results of the parametric approach.

On the basis of these estimates, we will assess the various technical efficiencies on a global scale, per type of bank, per year and per country.

ESTIMATION RESULTS

- **Results on the basis of the SFA approach**

From the reduced form above (2), we will estimate the stochastic frontier so as to find technical efficiency. In fact, the latter's estimate leads to the following results, which will be shown in Tables (2).

The Y_1 variable is the loan. In our results, the loan has a significant but negative effect on cost efficiency, both in variable and in invariable periods. Our results are consistent with the idea that if the loans are non-performing or past due, the operating costs rise due to the difficulty of dealing with these loans, that is to say, any deterioration in the credit quality reduces the efficiency cost. According to the study of Miller (1997), Athanasoglou et al. (2008) and Liu H. et al. (2010), a loan can negatively affect efficiency.

Concerning the second variable Y_2, which implies the net liquid assets, and on the basis of the results estimated at an invariable time, probability takes a positive value equal to 0.018, that is below 5%, whereas its coefficient takes a negative value equal to -0.1525923, which means that the net liquid asset has a significant but a negative effect on the banks' cost efficiency. Our results are consistent with those of Miller (1997) and Abreu and Mendes (2002) who found a negative relationship between liquidity and cost efficiency. This is a surprising result, in

Table3. Average efficiency scores of Islamic and conventional banks

	EC_SFA_VT	EC_SFA_IT	EP_SFA_VT	EP_SFA_IT	DEA_CRS	DEA_VRS
Global	95.5%	96.0%	97.3%	96.0%	65.5%	62.5%
IB	94.5%	95.0%	97.4%	95.0%	65.2%	61.7%
CB	96.5%	96.8%	97.1%	96.8%	64.9%	63.2%

Table4. Average efficiency scores per country

Country	EC_SFA_TV		EC_SFA_TI		EP_SFA_TV		EP_SFA_TI		DEA_CRS		DEA_VRS	
	IB	CB	IB	BC	IB	CB	IB	CB	IB	CB	IB	CB
Saudi Arabia	97,2%	95.7%	97,4%	96.1%	98,6%	97.2%	97,4%	96.1%	66,4%	66.1%	59,3%	59.4%
Bahrain	92.6%	97.6%	93.0%	97.8%	99.2%	99.3%	93.0%	97.8%	71.1%	64.5%	60.2%	63.2%
Egypt	97.1%	94.4%	92.6%	95.0%	98.3%	99.0%	92.8%	95.0%	62.5%	63.3%	60.7%	60.7%
Jordan	97.7%	97.7%	98.0%	97.9%	99.7%	99.7%	98.0%	97.9%	63.0%	63.8%	58.9%	72.7%
Kuwait	97.4%	96.6%	95.9%	96.7%	97.5%	99.4%	95.9%	96.9%	68.5%	67.8%	67.2%	72.7%
Malaysia	96.8%	96.4%	97.3%	96.8%	98.0%	98.1%	97.3%	96.8%	61.0%	63.0%	60.6%	65.8%
Sudan	96.8%	97.9%	97.2%	98.2%	99.3%	99.9%	97.2%	98.2%	65.2%	69.2%	57.1%	69.1%
United Arab Emirate	97.6%	96.9%	97.9%	97.2%	96.6%	97.4%	97.9%	97.2%	61.3%	66.4%	64.7%	60.6%
Yemen	68.4%	90.6%	70.8%	91.4%	83.9%	70.7%	70.8%	91.4%	63.9%	63.9%	63.7%	67.6%
Qatar	97.6%	97.6%	98.0%	97.8%	96.4%	97.2%	98.0%	97.8%	70.3%	63.9%	60.3%	62.0%
Tunisia	98.5%	98.3%	98.7%	98.5%	99.3%	99.6%	98.7%	98.5%	67.1%	67.6%	63.7%	57.0%
Iraq	99.0%	91.3%	99.0%	90.7%	51.6%	36.9%	99.0%	90.7%	80.4%	51.0%	57.6%	57.0%
Syria	96.3%	96.0%	96.9%	96.3%	95.0%	92.2%	96.9%	96.3%	71.3%	62.8%	69.3%	67.2%
Lebanon	97.9%	96.4%	98.1%	96.7%	99.5%	98.9%	98.1%	96.7%	62.7%	63.3%	61.7%	62.0%

some way, especially in the current crisis during which we saw how banks were seeking liquidity.

For the variable inflation, the probability value is positive and significant for both cases, that is to say, in variable and invariable time with values respectively equal to 0.009 and 0.002, that is below 5%, and positive coefficient values equal to 0.0044499, in variable time and 0.0050373, in fixed time.

Therefore, inflation has a positive and significant impact on banks' cost efficiency. As a consequence, our results are consistent with the ones found by many authors, such as Bourke (1989), Molyneux and Thornton (1992), Demirgüç-Kunt and Huizinga (1999), Athanasoglou et al. (2006, 2008) and Pasiouoras and Kosmidou (2007).

For the variable size, the coefficient value is 0.3483109 whereas that of the probability is 0.000, that is below 5%. On the basis of these results, the cost frontier moves up. Consequently, the larger a bank is, the less opportunities it has to minimize its costs. In the literature about the banking efficiency, the results regarding the effect of the bank size on inefficiencies differ. For example, on the one hand, Kwan (2006) and Sensarma (2006) found that large banks are less efficient in cost than smaller ones. On the other hand, Roa (2005) found that the size has no impact on cost inefficiencies in the United Arab Emirates.

The variable "SECURITIES" (total productive assets) has a significant and positive effect on the banking efficiency either in variable or in invariable time. Our results are consistent with the ones of Staikouras et al. (2008) who found that this variable is positively related to efficiency but they also added that this relationship could be negative if a bank invests heavily in securities at the expense of lending.

The variables "Market Share and Risk Taking" are significant in variable and in fixed time with probability values below 5%. Several economists used the Risk Taking ratio to measure and assess banking efficiency. We can mention, for example, Kwan and Eisenbeis (1995), Altunbas et al. (2007) and Godlewski (2004) who underline a simultaneous but negative influence between the risk level and banking performance.

Similarly, we re-estimated the profit function applying the same variables used in the cost function. The estimate has the following results:

- **The efficiency score using the DEA and SFA methods**

  - ✓ **Average efficiency scores of Islamic and conventional banks**

Regarding the DEA method, we will use both the model of constant returns to scale (CRS) of Charnes, Cooper and Rhodes (CCR-1978) and the one of variable returns to scale (VRS) of Banker, Charnes and Cooper (BCC-1984). The choice of both models helps us calculate the technical efficiency to scale for each country and each Islamic and conventional bank.

The scores in the case of constant returns to scale are more important than they are in that of variable returns. In the case of constant returns, the scores reached, on average, 65.2% in the Islamic banks whereas they were 64.9% in the commercial banks, which means that Islamic banks are a bit more efficient than their conventional counterparts.

Furthermore, in the table3 above, the cost and profit efficiency scores in variable and invariable periods are presented using the SFA method.

It seems that the average value of the efficiency cost of conventional banks in variable and invariable time is slightly higher than that of Islamic banks. However, concerning the profit efficiency, we can see that Islamic banks, in variable time, have average efficiency scores a bit better than those registered by conventional banks, which is not the case in variable time where the efficiency scores of Islamic banks are lower than those of conventional banks.

  - ✓ **Average efficiency scores per country**

The table4 above summarizes the average efficiency scores per country of all the Islamic and conventional banks in the sample according on the basis of the DEA and SFA methods.

Table (4) shows the detailed results of the average efficiency per country using the DEA and SFA methods. When reading this table, it seems that the efficiency scores calculated with the DEA method are more important either in the case of constant returns to scale or in that of the variable ones.

According to the results, it appears that Bahrain, Egypt, Qatar are among the most important countries in which Islamic banks are the most efficient.

At the same time, using the SFA method, we presented the cost and profit efficiency scores both in variable and invariable times. Most of the average values of cost efficiency in both periods are somewhat larger for the Islamic banks than for the conventional ones. The efficiency scores of Islamic banks in variable time are between 91.6% and 99.6%, however, for commercial banks, they vary between 90.6% and 98.3%. The average cost efficiency values for Islamic banks in invariable time vary between 70.8% and 99.7%, whereas for commercial banks, they are between 90.7% and 98.2%. Saudi Arabia, Qatar, Jordan, Malaysia, the Russian Federation, the United Kingdom, the Cayman Islands and Singapore are among the countries where the cost efficiency scores are the most considerable.

  - ✓ **Per year efficiency scores**

    - ➢ **Comparison of the per year efficiency scores of Islamic and conventional banks**

By analyzing the previous table, we can see that the per year efficiency scores of the Islamic and conventional banks are very close to one another during our research period; 1999-2010.

On the basis of the SFA method, the cost and profit efficiency scores, in variable time, during the 2007/2010 period, are stable for Islamic banks, however, for conventional banks, they fell sharply. This decline of the efficiency scores within conventional banks can be explained by the emergence of the current crises.

According to Erkki Liikanen's report (2012), the 2007-2008 period presents the first phase of the "subprime crisis" that caused the collapse of the investment portfolios and generated a lack of confidence in the financial markets and consequently affected the functioning of the market. This explains the results generated in this study where the efficiency scores of conventional banks, according to both the SFA and DEA methods, showed a decrease in 2007 and 2008.

Similarly, according to Erkki Liikanen's (2012) report, the early 2009 presented the third phase; it is about the "economic crisis". The crisis now hit the real economy and the public finance, the thing which explains the slight decline of the Islamic banks' efficiency scores (see table5 below). The Islamic banks are not attacked by this crisis because they are far from the development of the mortgages which are forbidden by the Islamic law and the Sharia. For this reason, the subprime crisis did not affect the Islamic financial institutions Nevertheless; its influence on Islamic banks is not excluded disproportionately because of its effects on the real economy and the financial markets in general. Its effects are due to an infection of the traditional financial institutions and the rest of the other economic sectors.

Our results show that the efficiency scores of the Islamic banks dropped slightly in 2010 according to both the SFA and DEA methods. This can be explained by the fact that 2010 is the year where the fourth phase called "sovereign debt crisis" exists. Given the current institutional framework of the European Union, the systemic links between the banks and the sovereign debt represent considerable challenges. The Greek crisis spread in various countries of the euro area and became a major worldwide concern. The crisis affected the global markets of the East and West such as the Japanese stock market and other markets in Europe and in the

Table5. Per year efficiency cores of Islamic and conventional banks

	EC_SFA_TV		EC_SFA_TI		EP_SFA_TV		EP_SFA_TI		DEA_CRS		DEA_VRS	
Year	IB	CB	IB	CB	IB	CB	IB	CB	IB	CB	IB	CB
1999	96,0%	97,9%	95,0%	96.8%	97,4%	97,1%	95,0%	96,8%	70,3%	75,0%	61,9%	64,6%
2000	95,8%	97,7%	95,0%	96,8%	97,4%	97,1%	95,0%	96,8%	73,8%	72,2%	64,9%	60,6%
2001	95,6%	97,5%	95,0%	96,8%	97,4%	97,1%	95,0%	96,8%	75,8%	76,4%	63,9%	63,2%
2002	95,3%	97,3%	95,0%	96,8%	97,4%	97,1%	95,0%	96,8%	70,8%	73,0%	60,1%	61,3%
2003	95,0%	97,0%	95,0%	96,8%	97,4%	97,1%	95,0%	96,8%	74,6%	76,6%	59,1%	65,6%
2004	94,7%	96,7%	95,0%	96,8%	97,4%	97,1%	95,0%	96,8%	74,6%	74,1%	62,9%	60,8%
2005	94,4%	96,4%	95,0%	96,8%	97,4%	97,1%	95,0%	96,8%	79,1%	72,1%	65,0%	61,3%
2006	94,1%	96,1%	95,0%	96,8%	97,4%	96,2%	95,0%	96,8%	75,8%	65,2%	58,7%	63,9%
2007	93,9%	95,8%	95,0%	96,8%	97,5%	95,3%	95,0%	96,8%	75,0%	67,1%	59,4%	63,2%
2008	93,7%	90,5%	95,0%	96,8%	97,5%	92,2%	95,0%	96,8%	75,0%	65,6%	59,2%	60,5%
2009	93,6%	80,1%	95,0%	96,8%	97,5%	89,1%	95,0%	96,8%	69,4%	60,9%	61,7%	59,3%
2010	93,6%	75,7%	95,0%	96,8%	97,5%	87,2%	95,0%	96,8%	69,4%	56,5%	64,2%	59,6%

United States as well as in many countries around the world. The Gulf countries had not been immune to these effects even though they had no clear direct relationship with the crisis.

It can be concluded that Islamic banks had been only slightly and indirectly affected by the European crisis.

SUMMARY AND CONCLUSION

This study aims at defining the efficiency of the Islamic and conventional banks. For this reason, we suggest evaluating the efficiency of a 209-bank sample over the 1999/2010 period.

The used estimates are the stochastic frontier analysis (SFA) and the DEA method. The empirical analyzes conducted in this study show significant results. First, according to both the SFA and DEA methods, the average efficiency scores of Islamic banks is close to that of conventional banks

The results obtained through the DEA method suggest that the average efficiency scores of Islamic banks with constant returns to scale reached 65.2% and with variable returns to scale 61.7%, whereas for conventional banks, the scores reached 64.9% for the constant returns to scale and 63.2% for the variable ones. Therefore, according to the SFA method, it seems that the average value of the conventional banks' efficiency is slightly higher than that of the Islamic banks.

Our empirical results also show that the average efficiency per country is slightly higher for Islamic banks than for their conventional counterparts, still according to the DEA method. The results also show that Bahrain, Egypt, Qatar and Turkey are among the countries where Islamic banks are the most efficient.

Still on the basis of the SFA method, the profit cost efficiencies scores in variable and in invariable time are very similar but with a slight increase within Islamic banks. Saudi Arabia, Qatar, Jordan, Malaysia, the Russian Federation, the United Kingdom, the Cayman Islands and Singapore are among the countries where the cost efficiency scores are the highest. As for the results of the profit efficiency scores, Bahrain, Jordan, Cayman Islands and Singapore are among the countries where Islamic banks are the most efficient.

By analyzing per year efficiency scores, we can say that Islamic banks have been affected by the European crisis only slightly and indirectly.

According to the SFA method, the cost and profit efficiency scores, in varying times during the 2007/2010 period, are stable for the Islamic banks, however for the conventional banks, they declined. This fall can be explained by the outbreak of the current crises.

The efficiency scores of conventional banks, according to both the SFA and DEA methods, declined in 2007 and 2008. This can be explained by the fact that the 2007/2008 period is the first phase of the "subprime crisis" that caused the collapse of the investment portfolios and created an atmosphere of mistrust in the financial markets and, therefore, affected the functioning of the market.

We found out that in 2009, the efficiency scores of Islamic banks declined a bit. This year is the third phase where we talk about an "economic crisis" which is now affecting the real economy and the public finance. The Islamic banks are not attacked by this crisis as they don't use mortgages, which are forbidden by the Islamic law and by the Sharia.

Furthermore, the Greek crisis spread to more countries in the euro zone and became a worldwide major concern. It affected the markets in the East and in the West, such as the Japanese stock market and other exchange markets in Europe and in the United States as well as in many countries around the world. The Gulf countries were not immune to these effects even though they have no apparent direct links with the crisis.

Therefore, we can say that the Islamic banks are but slightly and indirectly affected by the European crisis.

REFERENCES

Abreu M, Mendes V (2002). Commercial Bank Interest Margins and Profitability: Evidence from E.U. Countries. Working Paper Series, Porto.

Aigner DJ, CAK Lovell, P Schmidt (1977). Formulation and estimation of frontier production function models. J. Econometrics. 6: 21–37.

Al-Jarrah I, Molyneux P (2005). Efficiency in Arabian banking. In: Iqbal, M., Wilson, R. (Eds.), Islamic Perspectives on Wealth Creation. Edinburgh University Press, Edinburgh. Pp 97–117.

Al-Muharrami S (2008). An examination of technical, pure technical and scale efficiencies in GCC banking. Am. J. Fin. Account. 1(2): 152–166

Altunbas Y, Carbo S, Gardener EPM, Molyneux P (2007). Examining the relationships between capital, risk and efficiency in European banking. European Fin. Management. 13(1): 49–70.

Athanasoglou P, M Delis. C Staikouras (2006). Determinants in the bank profitability in the South Eastern European Region', J.Fin. Decision Making, 2**:** 1-17.

Athanasoglou P, S Brissimis, M Delis (2008). 'Bank-specific, industry-specific and macroeconomic determinants of bank profitability', J. Int. Fin. Markets, Institutions, and Money, 18: 121-36.

Bader MKI (2008). Cost, revenue, and profit efficiency of Islamic versus conventional banks: international evidence using data envelopment analysis.Islamic Economic Studies 15 (2): 23-76.

Battese and Coelli (1995), « A Model for Technical Inefficiency Effects in a Stochastic Frontier Production Function for Panel Data", Empirical Economics.) 20:325-332

Bourke P (1989). Concentration and other determinants of bank profitability in Europe, North America and Australia, J. Banking Fin. 13: 65-79.

Brown K, Skully MT (2002). International studies in comparative banking: a survey of recent developments. SSRN eLibrary.

Charnes A, WW Cooper, E. Rhodes (1978) " Measuring the efficiency of decision making units." European J. Operations Res. Pp429-444.

Demerguç-Kunt A, Huizinga H (1999). "Determinants of commercial bank interest margins and profitability: Some international evidence", *World Bank Economic Review*. 13: 379-408.

Dennis Olson, Taisier A. Zoubi (2011), « Efficiency and bank profitability in MENA countries" Emerging Markets Review 12: 94–110.

Donthu Naveen, Boonghee Yoo (1998). "Cultural Influences on Service Quality Expectations,"

El-Gamal MA, Inanoglu H (2005). Inefficiency and heterogeneity in Turkish banking: 1990-2000. J. App. Econ. 20 : 641–664.

Erkki Liikanen (2012). « Crise financière et dette souveraine : impact sur la zone euro », Fédération Wallonie-Bruxelles.

Fadzlan Sufian (2008). "The Efficiency of Islamic Banks: Empirical Evidence from the MENA and Asian Countries Islamic Banking Sectors", The Middle East Business and Economic Review. 20: 1.

Godlewski CJ (2004). "Bank capital and credit risk taking in emerging market economies", J. Grigorian, D.A., Manole, V., 2005. A cross-country nonparametric analysis of Bahrain's Banking System. In: IMF Working Paper WP/05/117. InternationalMonetary Fund, Washington, DC.

Halkos GE, Salamouris DS (2004). Efficiency measurement of the Greek commercial banks with the use of financial ratios: A data envelopment analysis Approach. Management Account Res. 15 (2): 201-224.

Haseeb Shahid, Ramiz ur Rehman, Ghulam Shabbir Khan Niazi, Awais Raoof (2010). "Efficiencies Comparison of Islamic and Conventional Banks of Pakistan », Int. Res. J. Fin. Econ. ISSN 1450-2887. 49.

Hassan MK (2005). The cost, profit and X-efficiency of Islamic banks. In: Paper Presented at 12th ERF Annual Conference, www.erf.org.eg/CMS/getFile.php?id=469

Hassan MK (2006). The X-efficiency in Islamic banks. Islamic Economic Studies 12 (2): 49–78.

Hassan T, Mohamad S, Bader MKI (2009). Efficiency of conventional versus Islamic banks: evidence from the Middle East. International Journal of Islamicand Middle Eastern Finance and Management 2 (1): 46–65.

Kwan S (2006). "The X-efficiency of commercial banks in Hong Kong", J. Banking Fin. 30: 1127-1147.

Kwan S, Eisenbeis R (1995). "An Analysis of Ineffi ciencies in Banking." J. Banking Fin. 19(3-4): 733-734.

Lenartowicz and Ratchford (1996). « Productivity Assessment of Multiple Retail Outlets", J. Retailing, 72: 4

Meeusen W, Van Der Broeck J (1977). Efficiency estimation from Cobb-Douglas production functions with composed error, Int. Econ. Rev. 18: 435-444.

Mokhtar HSA, Abdullah N, Al-Habshi SM (2006). Efficiency of Islamic banking in Malaysia: a stochastic frontier approach. J. Econ. Co-operation 27 (2): 37–70.

Molyneux P, J Thorton (1992). The determinants of European bank profitability. J. Banking Fin. 16 (6): 1173-1178.

Roa A (2005). Cost frontier efficiency and risk-return analysis in an emerging market, Int. Rev. Fin. Analysis 14: 283–303.

SR Ika, N Abdullah (2011). "A comparative study of financial performance of Islamic banks and conventional banks in Indonesia;" *Int. J. Bus.Soc. Sci.* 2(15): 199-207.

Said A (2012). Comparing the change in efficiency of the Western and Islamic banking systems. J. Money, Investment and Banking. 23: 149–180.

Samad A (2005). Performance of interest-free Islamic banks vis-a-vis interest based conventional banks of Bahrain. *IIUM J. Econ. Management.* 13 (2): 209-216. Retrieved Mac 18, 2010 from EconLit database.

Sensarma R (2006). "Are Foreign Banks Always The Best Comparison of State-Owned, Private and Foreign Banks in India,"Economic Modeling. 23: 717-735.

Shahid H, Ur Rehman R, Niazi GSK, Raoof A (2010). Efficiencies comparison of Islamic and conventional banks of Pakistan. Int. Res. J. Fin. Econ. 49: 24–42.

Shephard RW (1970) " Theory of Cost and Production Function", Princeton University Press, Princeton (NJ).

Srairi SA (2010). Cost and profit efficiency of conventional and Islamic banks in GCC countries. Journal of Productivity Analysis 34 (1): 45–62.

Staikouras C, E Mamatzakis, A Koutsomanoli-Filippaki (2008). 'Cost efficiency of the banking industry in the South Eastern European region.' Journal of International Financial Markets, Institutions and Money 18(5): 483-497

Sufian F (2009). The determinants of Islamic banks' efficiency changes: empirical evidence from the MENA and Asian banking sectors. International Journalof Islamic and Middle Eastern Finance and Management 2 (2):120–138.

Viverita V, Brown K, Skully M (2007). Efficiency analysis of Islamic banks in Africa, Asia and the Middle East. Review of Islamic Economics 11 (2): 5–16.

Yudistira (2004). "Efficiency in Islamic banking: An Empirical analysis of eighteen banks", Islamic Economic Studies. 12(1)

How to cite this article: Afifa and Ridha (2015). Islamic and conventional banks: Efficiency and stability during the current crises. J. Res. Econ. Int. Finance. 4(2):27-33