What drives the Islamic banks' efficiency: the financial principals or particular managerial practices?

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Abstract

This paper tries to highlight the heterogeneity of Islamic banks’ practices and its implications particular on the level of banks’ efficiency. In particular, we compared the technical efficiency of Saudi Islamic banks which refer to the Hanbali School and the Malaysian ones which refer to the Shafi’i School in interpreting and translating Islamic financial principles into Islamic financial practices. Using the technique DEA during the period 2005-2011, we find that the Saudi Islamic banks are more efficient than the Malaysian ones. In addition, and in order to explain these different technical efficiency levels, we conduct a comparative analysis of the nature and distribution of the various inputs and outputs of the two groups of banks. The results indicate that the level of efficiency of Saudi banks comes mainly from good management. But in our study, we show that good management behind no better managerial performance, but rather it reflects the severity of the competitive environment. Especially, Saudi Islamic banks operate in a more comfortable and less restrictive competitive environment than do the Malaysian banks.

Key words: the determinants of technical and scale efficiency, Islamic banks practices’ heterogeneity, the DEA approach.

JEL Classification: G21, C14

1. Introduction

The efficiency of financial institutions is so important for the whole economic safety and prosperity, especially when the financial intermediation is the main financial mechanism of the economical growth.

A bank is efficient when he limits the waste of an economy wealth through the distribution of bad loans and when he promotes the whole welfare of the economy by optimizing the use of its resources i.e. it finances only the more socially, economically and financially performing projects.
Among the virtues of the Islamic financial principles is the improvement of the banks' efficiency. Especially, and away from religious considerations, the Islamic financial principles establish a mechanism that involves a better and more efficient distribution of wealth.

While the conventional banks, which turnover is essentially built on the interests earned, are trying to maximise credits allocation unconcerned about their quality, the Islamic banks, and since their income is based on the profits generated by the financed projects, are involved in the success of their financing. So the mechanism of maximisation of Islamic banks’ profitability is associated with a safe and optimal distribution of their resources.

Moreover, the three main Islamic financial principles imply more efficient financial institutions compared to conventional ones. First, the prohibition of distribution of interest to depositors leads to costless resources. Second, the principle of share of profit and loss with clients involves a better implication of the bank which will be forced to lead a rigorous selection procedure of the financed projects. Doing so leads to a decrease of non-recovery of the advanced financing. Furthermore, and since the Islamic banks are more concerned with the project quality than with the client solvability, the small entrepreneurs will have the opportunity to finance their projects which improve the overall investment volume. Finally, the asset backing principle largely promotes the safety of the Islamic financial institutions.

So theoretically, the Islamic financial institutions are suspected to be more efficient, especially more cost and technical efficient than their conventional peers.

This theoretical hypothesis is widely confirmed empirically. Especially, we notice many efficiency comparative studies that confirm the significant better efficiency of the Islamic banks compared to the conventional ones (Al Shammari (2003), Al-Jarrah and Molyneux (2003)).

But we notice a conflict among the efficiency determinants of the Islamic banks. Some researchers follow the occidental banks ‘efficiency literature, i.e authors either attempt to link the Islamic banks efficiency to some bank’ specific characteristics such as size or some financial ratios or to some economic variables such as GDP or level income.

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1 The behaviour of conventional banks is restricted by the national and international prudential regulation.
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We also find another research’ stream, that attempts to link the better Islamic banks efficiency to the underlying Islamic principles. Especially, they outlined the resources costless and the lesser non performing financing level compared with the conventional banks.

Differently to the earlier researches’ approaches, this paper attempts to highlight the high heterogeneity among the Islamic banks’ practices.

Especially the aim of this paper is to see to what extend we can connect the Islamic bank efficiency to the managerial practices rather to the Islamic principles. We argue if the Islamic financial’ principles are the determinants of the Islamic banks’ efficiency, so we should not observe different efficiency’ scores among Islamic banks regardless of their respective country or region.

Moreover, the divergence of opinion between the different schools to which refer the Islamic banks’ shariaa scholars, the different Islamic principles interpretation, versus the business practicability and financing commercial viability, all this factors may translate into different managerial decision and practices that can be determinant of the bank’ efficiency level.

To fulfil our objectives, we proceed into two steps. First, we measure the technical efficiency of a sample composed exclusively by Saudi Arabian and Malaysian Islamic banks2, using the DEA approach. The results reveal a significant higher technical efficiency score among the Saudi Arabian Islamic banks (SIBs). Moreover the lesser Malaysian Islamic banks (MIBs) comes essentially from a weak pure technical efficiency score.

Second, we attempt to justify the recorded efficiency differences into their respective managerial practices in organizing and in optimizing the inputs variables ‘use. Especially, and through a descriptive and comparative study we document pertinent differences in the organisation, the utilization rate and volume adequacy of the inputs ‘variables.

The paper is organised as follows: section 2 exposes an overview of the literature dealing with the Islamic bank efficiency ‘determinants. The section 3 outlines the methodology and the result of the technical efficiency measure. Section 4 carries the comparative study among the two groups of banks’ practices. Section 5 concludes the paper.

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2 We outline that the SIBs shariaa scholars refers to hanbali’ school while the SIBs refer to Shafii’ school.
1. The Islamic bank efficiency determinants: a literature overview

While the literature that dealt with the measure and the comparison of the conventional versus Islamic banks’ efficiency is abundant\(^3\), we find few studies that are trying to explore the determinants of the Islamic banks’ efficiency.

Nevertheless, following an overview of the literature interested with this specific problematic, we remark that the existing studies can be classified into two groups. The first group includes studies that extrapolate the efficiency’ determinants of conventional banks and try to see to what extent these conventional efficiency determinants are also valid to determine the Islamic banks’ efficiency. But the second group of studies, tries to connect the Islamic bank’ efficiency to the underlying Islamic financial principles.

From the first group, we find studies that explain the Islamic banks’ efficiency either by their respective inherent characteristics, or by the impact of some economic variables. Ahmed and Noor (2010), argue that the determinants of conventional banks’ efficiency are also pertinent in the Islamic banking industry. Especially they found that the Islamic banks’ efficiency are positively correlated with equity, bank’ size, country’ GDP and with non performing loans\(^4\), but the operating expenses and gross loans has a negative impact. But in an earlier study, Sufian, Noor and Noor (2009) had documented a positive relationship between banks ‘efficiency and loans intensity, size, capitalisation, profitability, low non performing loans and little market share.

Ben Naceur and Omran (2008) examine the influence of bank regulations, concentration, financial and institutional development on Middle East and North Africa (MENA) countries commercial banks’ margin and profitability during the period 1989–2005. They found that bank-specific characteristics, in particular bank capitalization and credit risk, have positive and significant impact on banks’ net interest margin, cost efficiency and profitability. On the other hand, macroeconomic and financial development indicators have no significant impact on bank performance. Also, Noor and Ahmed (2011) studied the impact of the country income level on the banks efficiency; nevertheless their results were not conclusive. Especially, they found that majority of the efficiency bank over the years was dominating from high income country, namely Kuwait and Qatar in MENA banking

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\(^4\) The finding is contradicted with earlier findings by Kwan and Eisenbeis (1995) who found negative relationship between problem loans and bank efficiency.
What drives the Islamic banks efficiency: the financial principals or particular sectors. But it does not necessary that higher income country will lead to efficiency level. Saudi Arabia that fall under middle income country was the most efficient during the study period. Furthermore, Tahir, Baker and Haron (2011) investigated the efficiency of Islamic banks in four different regions; they found significant differences in efficiency between size and not between regions.

But, Dewi and al (2010) argue that the Islamic banks operating in developing countries are more efficient than their developed countries peers. Also, Yaumidin (2007) found that the geographical location and the country regulation have significant impact on Islamic banks.

Viverita et al. (2007) in their study of Islamic bank in Asia, Africa and Middle East, found that the age of each bank was negatively correlated with their respective efficiency scores. Again, this result was not confirmed by Hassen, Shamsher and Bader (2009) who argue that size and age did not significantly influence the banks’ efficiency.

Dealing with the banks managerial performance in optimizing the use and the organisation of inputs variables, Sufian et al. (2008) argue that Islamic bank have been managerially inefficient in exploiting their resources to the fullest extent. This result was documented earlier by Hassan and Hussein (2003), who examined the efficiency of the Sudanese banking system during the period of 1992 and 2000. They found that the overall cost inefficiency of the Sudanese Islamic banks were mainly due to technical (managerially related) rather than allocative (regulatory). Also Samad (1999) found that the Malaysian full-fledged Islamic banks had lower average utilization rate than their conventional peers. Besides Mostapha (2011) measure the relative efficiency of the top 100 Islamic banks, he found that efficiency is sub-optimal and he recommended to Islamic banks to reduce resources that are under-used.

Concerning the second group, it includes almost all studies asserting the better, technical, profit and cost efficiency of the Islamic banks compared to their conventional peers. Moreover we outline a consensus of opinion that seems to put down the substantial efficiency advantages of Islamic banks to their underlying Islamic principles. Al shamari (2003) argue that the documented better Islamic bank efficiency is drawn by the prohibition of distribution of interest to depositors which translate into lower funding costs, compared with their conventional peers. Also El-Gamal and Inanoglu (2002) attribute the better efficiency of Islamic banks to the Islamic asset-based financing products that lead to lower non-performing loan ratios.

As conclusion of this overview, we remark that both approaches present some limits, which we resume in the following points:
- First the studies that attempt to extrapolate the efficiency determinants of conventional banks to the Islamic ones seem to neglect the Islamic banking industry characteristics that are wide different from the conventional banking industry.
- Besides the findings are very contradictory and not enough conclusive to be generalized.
- Second, the studies that attribute the better Islamic efficiency to the underlying principles seem to neglect the high heterogeneity among Islamic banks and tend to consider the GCC Islamic banks as representative of all the other Islamic banks.

1. The measure of the technical efficiency: methodology and results

In this study, we are first concerned with the comparison of the technical efficiency of the SIBs and the MIBs. The technical efficiency (TE) relates to effectiveness with which a given set of inputs is used to produce an output. A firm is said to be technically efficient if it is producing the maximum output from the minimum quantity of inputs that are namely labor, capital and technology. Thus the technical efficiency of a bank is its ability to optimize the resources transformation into multiple financial services and to reduce resources’ waste.

There are numerous ways of measuring bank’s efficiency. But we distinguish two main approaches: the financial ratios analysis approach and the econometric procedure. The first approach recommends examining financial ratios such as return on asset, returns on equity, capital asset ratio and cost / income ratio (Hassan and Bashir (2003) and Bader, Ariff and Shamsher (2007)). While the second approach consists in estimating efficiency using either:

- Parametric methods, such as the stochastic frontier analysis, the thick frontier approach and the distribution-free approach. (Shamsher, Taufiq and Bader (2009), Bonin and al (2005), Kwan (2006)).
- Non-parametric techniques, such as data envelopment analysis (DEA) and free disposal hull analysis). (Haseeb, Ramiz, Ghulam and Awais (2010), Tahir, Baker and Haron (2011), Ali (2012).

In our study, we use the DEA approach for three main reasons:

- Since the study sample’ size is small and as recommended by Milind (2003) and Pasiouras (2007), it will be more suitable to use the DEA approach.
- The DEA approach doesn’t require any predetermined form of the production function as does the parametric approach.
- The DEA approach allows splitting the overall technical efficiency (OTE) into bank managerial efficiency, which is given by the pure technical efficiency (PTE) and the scale efficiency (SE).

Below, we describe briefly the DEA approach, and then we specify the data and the period. Finally we present the measure results.

1.1 The DEA methodology

The DEA, was introduced by Charnes et al. (1978) and it’s based on Farrell’s work (Farrell, 1957). It is a nonparametric technique for measuring the relative efficiency of a set of similar units, usually referred to as decision making units (DMUs).

As it’s defined by Berger and Humphrey (1997) and then by Avikran (2006), DEA identifies the technical efficiency of particular bank by comparing it to similar bank(s) regarded as efficient. Especially, and using linear programming technique, this approach attempts to identify the most efficient bank among the sample. These most efficient banks will compose the efficiency frontier and receive the score of 1. That is, these most efficient banks document an optimal use of the exploited inputs.

The score efficiency of each bank is then measured by the gap between the bank and the frontier. The score varies from 0 to 1.

Moreover in DEA, the OTE measure has been decomposed into two mutually exclusive and non-additive components: pure technical efficiency (PTE) and scale efficiency (SE). This decomposition allows an insight into the source of inefficiencies. The PTE measure is obtained by estimating the efficient frontier under the assumption of variable returns-to-scale. It is a measure of technical efficiency without scale efficiency and purely reflects the managerial performance to organize the inputs in the production process or the manager ability to minimize waste and to optimize the resources ‘use. Thus, PTE measure has been used as an index to capture managerial performance. The ratio of OTE to PTE provides SE measure. The measure of SE provides the ability of the management to choose the optimum size of resources (i.e the optimum input size to produce the actual output level). Inappropriate size of a bank (too large or too small) may sometimes be a cause of technical inefficiency (increasing or decreasing returns to scale). That is the bank is not minimizing the average production cost, and there are scale’ economies not yet exploited. So to achieve this optimal cost, the manager should adjust the size. A bank is scale efficient if it operates at constant returns to scale.

To estimate the efficiency ‘scores, we use the DEAP 2.1 program developed by Coelli (1996).
1.2 Data

This study used a sample of 21 Islamic banks: comprising of 15 Islamic banks operating in Malaysia and 6 Islamic banks operating in the Saudi Arabia.

Our only selection criterion and besides the data availability was the exclusion of Malaysian Islamic banks subsidiaries operating in Saudi Arabia and the exclusion of GCC (golf common countries) Islamic banks subsidiaries operating in Malaysia. Moreover we don’t consider the international Islamic banks operating in the two countries.

Besides, we consider equally the full-fledged Islamic banks and the Islamic windows. Our study covers the period from January 2005 to January 2011. Also we should mention that the study was not cautious about the bias that would introduce the financial world crisis, since we think that the countries were not directly concerned by the crisis.

To measure the technical efficiency of our sample’ banks, we need data related to outputs’ and inputs’ variables. The Islamic banks’ outputs are composed by advanced financing and earning assets, off-balance sheet items. While their inputs’ are composed by shareholders ‘equities, customers’ deposits and the off-balance sheet items. Moreover, and as did all the previous research we consider also as inputs the labor and the fixed capital’ expense.

All the necessary data are annuals and are collected from the annual reports published in the web site of each bank considered in the sample.

3.3 Results of the overall technical, pure technical and scale efficiencies’ scores measure

The table 1 gives descriptive statistics related to efficiency score as measured by the DEA approach using the DEAP 2.1.

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5 According to central bank of Malaysia, we compute 17 islamic banks and 4 international Islamic banks.
6 This component includes the investing financing (musharaka and mudharaba financing) and the commercial financing (murabaha, istisnaa)
7 The earning assets include securities or property held for sale or participations that provide dividend.
8 The inclusion of the off-balance sheet items as an input is of great importance particularly to Islamic investment banks where restricted investment accounts are not recorded in the balance sheet and considered as off-balance sheet items.
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We notice that the scores given in table 1 are average technical efficiency scores. As suggested by Bauer et al. (1998), DeYoung and Hasan(1998), and Isik and Hassan (2002), constructing an annual frontier specific to each year is more flexible and thus more appropriate than estimating a single multiyear frontier for the banks in the sample. Following the earlier studies, for the purpose of the study, we prefer to estimate separate annual efficiency frontier for each year. In other words, there were six separate frontiers constructed for the study.

Table 1: the average DEA’ efficiency scores of the SIB’s and MIB’s

<table>
<thead>
<tr>
<th>Year</th>
<th>OTE</th>
<th>PTE</th>
<th>SE</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005</td>
<td>MIBs</td>
<td>0.41</td>
<td>0.65</td>
</tr>
<tr>
<td></td>
<td>SIBs</td>
<td>0.69</td>
<td>0.87</td>
</tr>
<tr>
<td>2006</td>
<td>MIBs</td>
<td>0.45</td>
<td>0.67</td>
</tr>
<tr>
<td></td>
<td>SIBs</td>
<td>0.70</td>
<td>0.86</td>
</tr>
<tr>
<td>2007</td>
<td>MIBs</td>
<td>0.61</td>
<td>0.806</td>
</tr>
<tr>
<td></td>
<td>SIBs</td>
<td>0.75</td>
<td>0.89</td>
</tr>
<tr>
<td>2008</td>
<td>MIBs</td>
<td>0.32</td>
<td>0.618</td>
</tr>
<tr>
<td></td>
<td>SIBs</td>
<td>0.79</td>
<td>0.95</td>
</tr>
<tr>
<td>2009</td>
<td>MIBs</td>
<td>0.35</td>
<td>0.66</td>
</tr>
<tr>
<td></td>
<td>SIBs</td>
<td>0.82</td>
<td>0.95</td>
</tr>
<tr>
<td>2010</td>
<td>MIBs</td>
<td>0.39</td>
<td>0.65</td>
</tr>
<tr>
<td></td>
<td>SIBs</td>
<td>0.80</td>
<td>0.94</td>
</tr>
<tr>
<td>2011</td>
<td>MIBs</td>
<td>0.42</td>
<td>0.71</td>
</tr>
<tr>
<td></td>
<td>SIBs</td>
<td>0.79</td>
<td>0.9</td>
</tr>
<tr>
<td>Average scores</td>
<td>MIBs</td>
<td>0.421</td>
<td>0.68</td>
</tr>
<tr>
<td></td>
<td>SIBS</td>
<td>0.762</td>
<td>0.912</td>
</tr>
</tbody>
</table>

The SIB’s banks seem to be more overall technical, managerial and scale efficient. That is the SIB’s waste only 23.8% of their inputs but the MIBs’s could generate the same level of output using only 42.1% of their inputs, i.e. the MIBs not fully exploit their available inputs, and they could save 57% of their inputs.
Moreover, for both banks the scale inefficiency is overweighting the OTE\(^9\). That is the Islamic banks are operating under either increasing returns to scale or decreasing returns to scale, and both groups of banks are far from their optimal size, which is associated with the lowest average cost. And then they are spirited missing opportunities to reduce their average cost and then improving their competitiveness. The scale inefficiency translates into two possible scenarios: either (1) the presence of scale economies not yet exploited, i.e. the bank is recommended to increase inputs to reduce the average costs. in this case, the bank is operating under increasing returns to scales (IRS), or (2) the bank is over exploiting its inputs, and then should to reduce its size to find the optimal input productivity. Those banks are operating under decreasing returns to scale (DRS).

To identify under which regime the two groups of banks are operating, we carry an analysis of returns to scale.

Table 2: returns to scales analysis
The table gives the % annual share of banks

<table>
<thead>
<tr>
<th></th>
<th>MIBs</th>
<th>SIBs</th>
<th>MIBs</th>
<th>SIBs</th>
<th>MIBs</th>
<th>SIBs</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>DRS</td>
<td>62.5%</td>
<td>66.6%</td>
<td>60%</td>
<td>50%</td>
<td>65%</td>
<td>50%</td>
<td>71%</td>
<td>66.6%</td>
<td>72.5%</td>
<td>66.6%</td>
<td>70.6%</td>
<td>83%</td>
<td>68.3%</td>
</tr>
<tr>
<td>IRS</td>
<td>32.5%</td>
<td>16%</td>
<td>34%</td>
<td>33.3%</td>
<td>29.2%</td>
<td>16%</td>
<td>22.8%</td>
<td>33.3%</td>
<td>21.5%</td>
<td>33.3%</td>
<td>22.7%</td>
<td>16%</td>
<td>24.6%</td>
</tr>
<tr>
<td>CRS</td>
<td>5%</td>
<td>16%</td>
<td>6%</td>
<td>16%</td>
<td>5.8%</td>
<td>33.3%</td>
<td>6.2%</td>
<td>0</td>
<td>6%</td>
<td>0</td>
<td>6.7%</td>
<td>0</td>
<td>7.1%</td>
</tr>
</tbody>
</table>

\(^9\) The study’ findings contradict those of Sufian and al (2008) and those of Hassen and Hussein (2003) who argue that Islamic banks draw their efficiency especially from a managerial efficiency measured by the PTE.
Table 2 asserts that almost all of the both groups are operating under DRS regime. That’s their inputs volume exceeds the optimal level. So we recommend to Islamic banks to think to develop new financial services, new products and new transformation channel of the inputs in excess.

This recommendation is also recommended by Zakariah ben Ibrahim (2010) who argue that the role of banking traditional activities is gradually declined. In the awake of competitiveness and liberalization, Islamic banks must be more innovative and entrepreneurship to maintain business and survival. Traditional activities have to compete with other fund providers such as Islamic capital market, venture capital and others. One way to be innovative, Islamic banks should create new services that can generate income. Studies by Shahida et. al (2005:12) shows that banks involved with higher level of non-traditional activities tend to have more net income margin, fewer core deposits and exhibit less risks.

Concerning the PTE, this measure allows the isolation (from the scale inefficiency) of the managerial practices’ performances in optimizing the use of the available inputs, in order to maximize the output level and to limit the waste and the unexploited inputs. Such optimizing behavior involves the reduction of the average production costs, the resources’ save, the competitiveness improvement and the wealth growth. Regardless the inefficiency due to inadequate size, The SIBs seem to enjoy of better managerial practices’ performance in organizing and in exploiting the available inputs. Thanks to their manager efficient practices, they achieve the exploitation of 94.8% of the available inputs, while the MIBs managerial practices’ are exploiting only 68.5% of the available inputs which involve the waste or the under use of the available inputs.

In the next paragraph, and through a comparative analysis between the practices of each group, we try to identify and to outline the inefficient practices that may cause the MIBs technical inefficiency.

4. Comparative analysis: the Saudi Arabian versus Malaysian’ Islamic banks practices

As reveals the precedent paragraph, the OTE, the PTE and the SE scores of the SIBs are higher than those of the MIBs. So we couldn’t henceforth attribute exclusively the better efficiency of Islamic banks compared to conventional ones to the financial Islamic principles, since the later are unifying the overall Islamic banks.

That’s why, we propose in this study to explore to what extent the different Islamic practices may determine the Islamic bank efficiency. Our argument support is the two different schools of thoughts used by the two groups of banks to interpret and to
translate the principle into practice. Especially, the MIBs refer to Shaffi School while the SIBs refer to Hanbali School.

Moreover, the two groups of banks are operating into two different contexts. That is, the two groups of banks faced different pressures and have different tools to manage and to confront their particular environment. Especially they affront different heightened competition levels and different economic situations.

The practices explored in this study are related to the outputs’ nature and the corresponding income (financings’ billing and investments’ choices and strategies) and the inputs’ nature and corresponding costs (resources ‘remuneration, labor and fixed capital expenditures).

4.1 Comparison of the inputs’ variables and structure

It’s true that the two sets of banks assume the same inputs’ variables that are mainly: fixed capital expenses, labor expenses and resources’ remunerations, but the structure of the variables and their respective costs can be so different. So we carry a comparison of the distribution of the total expenditures between these three inputs ‘variables. The results are given in table 3.

<table>
<thead>
<tr>
<th>% of total income</th>
<th>SIBs</th>
<th>MIBs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Labor expenses</td>
<td>24%</td>
<td>19%</td>
</tr>
<tr>
<td>Average of labor productivity : employees number</td>
<td>0.25 /income’ monetary unit</td>
<td>0.16/ income’ monetary unit</td>
</tr>
<tr>
<td>Fixed capital expenses</td>
<td>26%</td>
<td>35%</td>
</tr>
<tr>
<td>Resources’ remuneration</td>
<td>2.9%</td>
<td>8%</td>
</tr>
<tr>
<td><strong>total costs/total incomes</strong></td>
<td><strong>0.58%</strong></td>
<td><strong>0.65%</strong></td>
</tr>
</tbody>
</table>

The study documents again a higher efficiency measured by the ratio total costs/total income in the SIBs. The finding corroborates our earlier finding asserting the higher technical efficiency scores of the SIBs compared with to MIBs ones.
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This finding asserts that the SIBs are better optimizing the use of the existing inputs. Moreover, the SIBs control better the costs and try to produce at cheaper costs.

the comparison of the different expenses/income distribution reveals that the most significant difference becomes from the resources’ remuneration of each set of banks. While, the resource’s remuneration consume about 2.9% of the SIBs gross income, this same input variable consume about 8% of the MIBs gross income.

Moreover, a close look at the annuals reports of each set of banks, allowed us to draw the following remarks concerning each input variable:

a- **Labor expenses:** the table reveals that the SIBs spend more money on human resources than do the MIBs. This may be explained by two main reasons: (1) the MIBs employees seem to be more productive that the SIBs ones (to produce 1$ income, SIBs spend on labor 0.25$, while MIBs spend only 0.16$) (2) besides the MIBs work with their compatriot labor, the SIBs import the qualified labor and assume therefore large payroll.

b- **Fixed capital expenses:** The investment expenses that assure growth are present in the both sets of banks. But we remark the investment strategies and objectives of each set of banks are wide different. Especially the SIBs seek for an asset growth i.e. for branch expansion and new delivery channels. While the MIBs investment’ expenses and besides the asset growth, are more related to (1) IT infrastructure and systems, (2) research and development and product innovation and (3) re-branding and branch remodeling. So the MIBs seem to be more concerned with the growth quality rather quantity. The importance attributed to research and development and product innovation will be translated into future more efficient and competitive banking industry. But will not be immediately productive. Such investment bears its fruits in the long term and may be costly at the short and medium term.

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**Table 4:** the distribution of fixed capital expenses

<table>
<thead>
<tr>
<th>Expenses in property and equipment /gross income</th>
<th>SIBs</th>
<th>MIBs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Investment in tangible asset</td>
<td>17.9%</td>
<td>18.6%</td>
</tr>
<tr>
<td>Investment in intangible asset</td>
<td>8.1%</td>
<td>16.4%</td>
</tr>
</tbody>
</table>
Also, the different growth strategies adopted by the two set of banks, may explain the better scale efficiency of the SIBs which seem to be closer to their optimal size. Especially, investing in innovation and research and development as do the MIBs don’t permit a fast and visible growth. That’s why they seem more far from the optimal size and they are still operating under an IRS. So, the MIBs should think for rapid solution of growth, through mergers and unions, to profit of the scale economies and so to reduce the average income ‘cost.

d- Resources remuneration: in this particular input variable, we record significantly different levels. That’s why we suspect that the resources’ remuneration is the crucial input variable that draws the more technical efficiency of the SIBs.

We refine the analysis and explore the resources structure of each set of banks.

**Table 5: the resources’ structure of each set of banks**

<table>
<thead>
<tr>
<th>Resources’ component</th>
<th>SIBs</th>
<th>MIBs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equities</td>
<td>15.63%</td>
<td>4.5%</td>
</tr>
<tr>
<td>Wholesale market</td>
<td>25.31%</td>
<td>20.88%</td>
</tr>
<tr>
<td>Investment accounts through wakala or mudharaba contracts</td>
<td>65.25%</td>
<td>51.27%</td>
</tr>
<tr>
<td>Maturity structure of the investment accounts</td>
<td>70% within 3 years</td>
<td>79.39% within six months</td>
</tr>
<tr>
<td>Saving accounts through amana contracts</td>
<td>5%</td>
<td>3%</td>
</tr>
<tr>
<td>Demand deposit</td>
<td>7%</td>
<td>18.2%</td>
</tr>
<tr>
<td>Resources’ cost/gross resources</td>
<td>1.85%</td>
<td>0.92%</td>
</tr>
<tr>
<td>Income distributed to depositors/ gross deposits</td>
<td>0.9%</td>
<td>2.1%</td>
</tr>
<tr>
<td>Retail deposits/gross deposits</td>
<td>70%</td>
<td>35%</td>
</tr>
<tr>
<td>Corporate deposits/gross deposits</td>
<td>30%</td>
<td>65%</td>
</tr>
</tbody>
</table>

10 These accounts are profit sharing i.e their holders perceive a share of the gross bank’ profit. So they are costless and don’t imply fixed charges.
11 The saving accounts are free.
N.B

1. **By difference to the SIBs, the MIBs distribute gifts and hiba to the demand and saving deposits.**

2. **Also in the annual reports, the MIBs seem to be more transparent in the disclosure of the annual reports. Especially they distinguish between the different resources’ income: income that comes from the investment of shareholders capital, those coming from the investment of the demand deposits, those coming from the mudharaba deposit.**

Table 5 and the following notes let the comparison between the two set of banks unfair. And the better PTE documented by the SIBs seem to be caused not by some over managerial performance in optimizing the use of inputs variables, but rather by the costless and abundance of resources. Also the table 5 helps to explain the better SE documented by the SIBs, since it helps to illustrate the shortfall that support the MIBs compared to the SIBs from an excess of liquidity pressure.

Especially, following an exploratory analysis of the table 4, we draw the following remarks:

- Besides the abundance and the low cost of the SIBs resources, they profit of more mudharaba deposits. Such deposits provide more freedom to the SIBs that will be less constrained in the use of these funds. Such opportunity will reduce the shortfall that may support the SIBs compared to the MIBs.

- Then and since deposits are mainly generated from corporate sector, it’s conceivable that they pose some supplementary liquidity pressure to the MIBs compared to the SIBs which join of some flexibility since 70% of the deposits are due within 3 years. Such constraint will limit the MIB investments’ choices. Especially they will be more cautious about the liquidity of their investment rather of their profitability.

- Moreover, the SIBs seem to rely more on the whole sale market which is supervised by the SAMA (Saoudi Arabian monetary agency). Such government support provides cheaper resources and relaxes the liquidity pressure.

- Nevertheless, we should notice that it’s true that gifts and hiba distributed by MIBs raise the resources costs, but their help them to preserve their customers in a highly competitive market. Especially, the SIBs use costly incentives to attract customers but then spend little to retain them.

As conclusion of the exploration of the input variables, we deduce that the better efficiency of the SIBs comes essentially from the abundance and costless resources which relax the liquidity’ constraint, provide more freedom in the use of funds and
limit the possible shortfalls. Also the focus on asset growth closes the SIBs to their optimal size.

But the focus on the innovation and research and development as do the MIBs and the attempt to retain customers, promises further improvement of the MIBs.

4.2 Comparison of the outputs’ variables and structure

The output’ variables of Islamic banks are mainly composed by the investing and financing activities.

To understand the better PTE and SE of the SIBs compared to the MIBs, it’s useful to look closely on the distribution of their assets or to their inputs transformations.

<table>
<thead>
<tr>
<th>% of the total asset</th>
<th>SIBs</th>
<th>MIBs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Financing activities</td>
<td>61%</td>
<td>41%</td>
</tr>
<tr>
<td>Investment activities</td>
<td>17%</td>
<td>14%</td>
</tr>
<tr>
<td>Cash and liquidity</td>
<td>16%</td>
<td>42%</td>
</tr>
</tbody>
</table>

The first remark that emerges from this table is the huge amount of liquidity held by the MIBs. Such amount will translate into considerable shortfalls for these banks compared to the SIBs. That is and under liquidity pressure which is imposed by the short deposit maturity, the MIBs are unable to fructify optimally this liquidity either in financing or investing activities. Here also, we find another explanation of the scale inefficiency of the MIBs that are operating under an IRS regime and of their pure technical inefficiency through the waste of earning opportunities.

Hereafter, we carry a refined analysis of the financing and the investment activities of each set of banks.

<table>
<thead>
<tr>
<th>% total investment</th>
<th>SIBs</th>
<th>MIBs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Investment in fixed income security</td>
<td>3.4%</td>
<td>58%</td>
</tr>
<tr>
<td>Financial investment held for sale</td>
<td>6.6%</td>
<td>40%</td>
</tr>
<tr>
<td>Investment in property available for sale</td>
<td>90%</td>
<td>2%</td>
</tr>
</tbody>
</table>

12 Besides, we notice recently a correction in investment asset value among the SIBs and an emerging focus on core banking business. In fact the volume of investment passed from 25% to 13% in 2011.
What drives the Islamic banks efficiency: the financial principals or particular ......

From this distribution, we remark very different distribution of the investment activities’ choices of the two sets of banks. Moreover the above distribution explains again the better technical efficiency of the SIBs in optimizing the output’s incomes, through the investment variable.

First the SIBs prefer investing in properties to gain in value. But the MIBs that are operating under liquidity pressure, are unable to undertake such illiquid but profitable investments.

Moreover, the SIBs tend to limit their investment in risky asset such as equities and in fixed income security associated with little earning. But again and for liquidity pressure, and to be able to distribute fixed income to depositors, the MIBs are forced to limit their investment in such liquid, risky and less performing assets.

| Table 8: description of the financing activity of each set of banks |
|-----------------|----------------|----------------|
| % gross financing | SIBs | MIBs |
| Retail financing | 63.4% | 55.7% |
| Corporate financing | 33.6% | 44.3% |
| Business corporate financing | 98.8% | 79.8% |
| Investment corporate financing | 1.14% | 20.2% |

Both sets of banks focus on the household or the retail sector. Nevertheless, we notice significant difference in the corporate financing purposes. From this table, the MIBs seem to be more efficient in financing the economy growth, since they finance the enterprises’ growth and investment. But the SIBs seem to be more cautious in this regard and more selective. Especially they finance the household sector and only the business corporate. We should highlight that these financing purposes are safer and allow higher financing margins, while the investment corporate financing imply variable profit rate and so are more risky.

So, the cautious and safer practices in selecting the financing’ beneficiaries may help to explain the better technical efficiency of the SIBs, compared with the MIBs which seem to be forced to accept risk.

Also, we document high heterogeneity among the used products in the two sets of banks. Table 8 synthesizes the respective main products of each set of banks.
Table 9: the distribution of the different financing products of each set of banks

<table>
<thead>
<tr>
<th>MIBs’ products</th>
<th>SIBs’ products</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bai Inah, Bai al Dayn, Bai Bithaman Ajil, Istisna’, Murabahah, Ijarah and Musharakah Mutanaqisah.</td>
<td>Corporate mutajara, installment sale, murabaha, istisna’</td>
</tr>
</tbody>
</table>

In terms of products and services, there are more than 40 Islamic financial products and services that may be offered by the banks using various Islamic concepts such as Mudharaba, Musharaka, Murabaha, Ijarah, Qardhul Hasan, Istisna’ and Ijarah Thumma Al-Baii.

Nevertheless, when we examine the products’ range offered by the MIBs and the SIBs, we notice that the MIBs’ products range exceeds SIB’s one, by some particular products. Especially the bai-inah; bai-daiin and the baii bithaman ajil are financial products only offered by the MIBs. Besides the billing way of these products help to explain the lesser technical efficiency documented by the MIBs

Below, we try to highlight the particularities of each one of these three products:

**Bai’Bithaman Ajil (BBA) (deferred pricing):**

This product consists in the sale of goods on a deferred pricing basis. That is the buyer will receipt immediately the good, but the price will be fixed at some later date. Used as bank financing product, this product implies that the bank buy cash the good desired by its customer. The good is immediately delivered to the customer, but the pricing and the payment are deferred to later dates.

So, the use of this financing product implies floating margins to banks and high level of credit and interest risks. So the MIBs are required to spend more on the risks management. Then, the use of this product helps to explain the lower cost efficiency

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13 Not proposed by all the Malaysian banks, but only Malaysian banks offer such products.
14 Mohd. Bakir (2008), Sudin Haron (1999) and Saiful Azhar (2005), asserted that the number of Islamic banking products applied in GCC countries are less than their Malaysian counterparts. Especially, they noted the rejection of two popular products by Malaysian Islamic banking i.e bay al-innah and bay al-dayn by GCC countries. Some of them but no all members GCC applied the principle of tawarruq in their Islamic banking operations.
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of the MIB, compared to SIBs\textsuperscript{15} which implement product selective strategies (retention of the safe products and waiver of the risky ones).

We note moreover, that the use of this product may be unsafe for the MIBs who are engaged to distribute fixed income to their depositors, especially when we document an interest rate diminution. In this case (which is our actual case during the study period) such billing practices may be very costly and may drive important losses for the MIBs.

Also, the only practice of murabaha (as do the SIBs), which implies the precision from the beginning of the bank margin, lets SIBs fixing the highest margin rate, to be able to affront the worst possible changes of the interest rate. That is, the MIBs products prices’ level will be higher than the MIBs’ one, since the later allow their margins to vary according to the benchmark interest rate’ evolution.

\textbullet{} **Bai’ al-Daiin** (debt trading): securitization

It’s a refinancing technique used only by the MIB. The technique consists in selling for cash the claims of the bank. This practice joins the securitization which is radically forbidden by the SIBs’ shariaa board scholars. Nevertheless, we should mention that the MIBs shariaa board scholars allow this practice only in presence of documents evidencing real debts arising from fide merchant transactions.

It is obvious that the use of such practice lets the MIBs subjected to higher risk levels, and requires them to spend more money in risk management. Again, we find another possible explanation of the lower cost efficiency documented in the MIBs compared with the SIBs’ one.

\textbullet{} **Bai’ al-Inah**

The use of this financing product implies that the bank sells an asset to the customer on a deferred payment and then it immediately repurchases the asset for cash at a discount. This financing technique which appears as a particular form of tawarrok helps banks to offer consumer loans to their customers. This technique is not

\textsuperscript{15} We should notice that the SIBs forbid the use of such product because it’s not compliant with shariaa that forbid uncertainty in any contractual relation.
permissible by the SIB’s sharia scholars because, it is supposed underlying some Riba practices, especially when the good underlying the exchange is fictional, and we assist only to a transfer of liquidity between the bank and its customer.

From this exposure, it seems that the MIBs tend to converge toward the conventional banks. The MIBs sharia scholars are ready to release the Islamic principles and to waive to the restrictive Islamic financial laws. The MIBs seem more concerned with their intermediation efficiency level than with, their own technical.

So and to conclude with this idea, from a comparative examination of the MIBs and the SIBs’ balance-sheet, it appears that the MIBs use more risky and less expensive financing products. Such practice implies that MIBs spend more money in risk management and earns fewer profit margins, than did the SIBs which document better technical scores. The SIBs reach these performance not because of better competence or better skills, but because of some particular safe practices, that consist in selective customers and product' procedures, besides the billing at the highest prices as preventive measure against any unfavorable changes in the benchmark interest rates.

Conclusion

The existing literature even leads comparison between the Islamic and the conventional banks. The main contribution of this paper is to lead comparison among an overall sample of Islamic banks, especially to highlight the high practices’ heterogeneity among the Islamic banks; moreover the particular practices may influence and determine their technical efficiency.

The paper proceeds into two steps. First it compares the technical efficiency of Malaysian and Saudi Arabian Islamic banks. Second, we carry a comparative analysis among their respective practices inherent to the distribution and to the characteristics of their respective inputs and outputs’ variables.

The results reveal that SIBs banks appear more technical efficient than the MIBs. Moreover, and as expected, the particular practices of the MIBs help to explain their relative technical efficiency.
Especially, the poor scale inefficiency documented by the MIBs, especially almost all of the Malaysian’ banks are operating under DRS, lets us suspecting that the development of new products and new channel for inputs transformation will help the MIBs to improve their scale efficiency.

Besides, the weak PTE documented by the MIBs seem to be the result of exogenous pressure, such as liquidity constraint, difficult refinancing, short-maturity deposits, overcrowded banking industry and heightened competition, rather than the result of a weak managerial performance or intelligence.

Nevertheless and due to the high importance accorded by the MIBs to research and development, to product innovation and to IT infrastructure and system lets us anticipating future efficiency improvement for the MIBs.

References


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