ARTICLE REVIEW

PERFORMANCE OF INTEREST-FREE ISLAMIC BANKS *VIS-À-VIS* INTEREST-BASED CONVENTIONAL BANKS OF BAHRAIN*

by

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1. INTRODUCTION

There has been a fast expansion of banking institutions – mainstream and Islamic – over the past decades. But there has also been a proliferation of financial crises and the non-performance of banks. The phenomenon prompted investigations into various aspects of financial services including bank performance and the criteria for its evaluation. Recent years have, indeed, witnessed a flood of writings on the performance of banks in the literature. Islamic economists following in the footsteps of their mainstream precursors have not lagged far behind.

I had just completed an appraisal of the criteria and methods employed recently for measuring the performance of Islamic banks in comparison with their mainstream counterparts (Hasan, 2004) when two more contributions, those of Khaled and Samad, appeared on the scene. Both employ the usual cost-profit touchstone for the purpose, and support the view that there is not much difference between the performance of the two categories of banks, Islamic and non-Islamic. This brief comment deals with the contribution of Samad.

2. COMMENTS/REVIEW

Samad starts by setting up on agreeable grounds a hypothesis for testing whether "Islamic banks may not be at par with the conventional banks

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in terms of profit, liquidity risk, and credit risk" (p. 116). He prefaces his attempt by reiterating the familiar differences between interest-free and interest-based banking systems (Section 2, pp. 117-9). He characterizes these differences as 'structural' and the newly introduced element *zakāt* as a tax. One can reasonably take exception to his views on both counts[1] but the main point of this comment concerns the methodology of the paper and the conclusions it finally arrives at.

The study is confined to a small country Bahrain, and compares the performance of the set of 6 Islamic banks with the corresponding set of 15 mainstream banks operating there. In the absence of information on the point in the paper, one can presume that the study does not leave out any of the banks, Islamic or mainstream. The comparison of these sets is erected on two bases: in terms of volume and in terms of some key financial ratios measuring the liquidity performance of the banks.[2] To facilitate my comment and to make it self-contained, I reproduce Table 1 of the paper below with the addition of a column on the right.

TABLE 1
Performance Measures in Terms of Volume (million $)

Variable	Islamic Banks (6)		Commercial Banks (15)		t-value	Corrected $\lvert t \rvert$-values
	Mean	Standard Deviation	Mean	Standard Deviation		
Total loans	757.8	523.66	19886.2	11349.48	-5.55	4.064
Total assets	1469.6	1131.85	44906.1	27016.53	-5.28	4.603
Total deposits	974.2	887.6	36774.13	22139.71	-5.28	3.899
Profit before tax	32.4	21.37	385.44	202.84	-6.80	2.024
Net Income	31.66	17.88	349.77	187.92	-6.54	4.076
Total equity	385.2	239.29	4472.1	2729.00	-5.16	3.607

The table shows the means and standard deviations for selected items of the balance sheet and income statements of the banks which the study covers. Since all banks commonly do not follow the same definitions of variables indicated in the table, it would have been enlightening for the reader if the consolidation process and compromises or assumptions made in the matter had been stated in the paper.

The above table is based on the aggregate data of the banks for the period 1991-2001 obtained from the *Bank Scope Database* (p. 121). It is not clear whether the mean and standard deviation for each bank in a set were first calculated and were then averaged without using weights to obtain the figures given in the table, or whether absolute figures for a particular item of all the banks in a set for all the years were added to calculate the descriptive statistics. Provision of this information was important as the choice of method could make the results materially different. These observations are equally applicable to the calculation of selected ratios presented in Table 2 of the paper.

In order to examine whether there is a difference in performance between the Islamic banks and conventional (mainstream) banks of Bahrain, the equality of means test is performed; the test is claimed as the most widely used in the literature of performance (of banks by implication).[3] Since the samples are small, Student's *t*-test is applied to assess the statistical difference between the two types of banks (p. 125). Let us examine the bare bones of the method the author has preferred to use and its efficacy for the analysis under review.

In testing hypotheses involving the difference between means, two cases are to be distinguished. First, we may assume that the two means are of samples that have come from the same population or that they have been drawn from the two hypothetical populations having the same mean ($\mu_1 = \mu_2$). Second, we may find that the standard deviations of the two populations are, in fact, different $\sigma_1 \neq \sigma_2$. In the case that Samad employs, if $\overline{X}_1$ and $\overline{X}_2$ are the means of independent *random* samples drawn from population 1 and population 2 respectively, the random variable $(\overline{X}_1 - \overline{X}_2)$ will be distributed as in the first case with a mean of $\mu_1 - \mu_2 = 0$ but with a standard error equal to

$$(1) \qquad S_{\overline{x}_1 - \overline{x}_2} = \sqrt{\frac{\sigma_1^2}{N_1} + \frac{\sigma_2^2}{N_2}}$$

and the test is precisely analogous to the case where $\sigma_1 = \sigma_2 = \sigma$. In practice, even as we may have reasons to believe that the standard deviations of the two sampled populations are different, we shall rarely know their values. We then have little choice but to take recourse to the approximating procedure, i.e., using the sample variances s_1^2 and s_2^2 to estimate the standard error σ_1 and σ_2 using the following formula

$$(2) \qquad S_{\overline{x}_1 - \overline{x}_2} = \sqrt{\frac{s_1^2}{N_1} + \frac{s_2^2}{N_2}}$$

If N_1 and N_2 are large, i.e., more than or equal to 30, the sample values of s_1^2 and s_2^2 will provide reliable estimation of the unknown population variances σ_1^2 and σ_2^2 the t-distribution will approximate well to the normal distribution.

However, if the samples are small as in the present study ($N_1 = 6$ and $N_2 = 15$) and we know that their standard deviations differ $\sigma_1 \neq \sigma_2$, the procedure entails some important modifications to account for the degrees of freedom. First, we estimate the combined standard deviation of the two populations using their respective standard deviations, s_1 and s_2. The following formula is used for the purpose:

$$(3) \qquad S_{1+2} = \sqrt{\frac{(N_1 - 1)S_1^2 + (N_2 - 1)S_2^2}{N_1 + N_3 - 2}}$$

The standard error for the means difference $\sigma^*_{\overline{x1} - \overline{x2}}$ can now be found as under

$$(4) \qquad \sigma^*_{x1-x2} = S_{1+2} \sqrt{\frac{1}{N_1} + \frac{1}{N_2}}$$

The value of t is then calculated as under:

$$(5) \qquad t = \frac{\overline{X}_1 - \overline{X}_2}{\sigma *_{X1-X2}}$$

It may be noted that as the calculation of estimated combined standard deviation of the populations uses $N_1 + N_2 - 2$ observations, the effect is transmitted to the estimation of the value of t. In the present case, this number reduces from 21 to 19. The absolute t values given in the last column of Table 1 above have been estimated following the explained procedure.

With this ground work, we now turn to the focal point of the paper and ask: can we use the statistical significance of difference between means of variables to compare the way Samad does the relative efficiency of the two bank sets? The procedure is at once untenable, to put it mildly. To begin with, one has to be clear as to what it means if the difference between means were statistically significant or insignificant.

In the present case, since no negative values are involved, it is advisable to use only the upper-tailed values of t-distribution. This value for $n = 19$ (i.e., $6 + 15 - 2$) at 0.05 level of significance is 1.431 (Croxton, Cowdenand, and Klien, 1982, p. 671). Thus, whether we use the t-value estimates of Samad or ours as given in Table 1, they are all greater than 1.431, i.e., the difference between the two means is significant in all cases. But other things remaining the same, what does this mean? The answer is straight forward: we reject the null hypothesis that the respective means could come from the same population. Instead, we accept the alternative hypothesis that they arise from different populations. But this fact was already known, so where was the need to undertake the whole exercise? Notice that all the means and corresponding standard deviations of the two sets are so divergent that it is naïve to assume that the population means were equal.

Here there is no difference between the sample and the corresponding population. The sampling theory was simply not applicable. Samad wasted his time in proving what was already patent. And, once

the equality of population means proposition is thrown out, the determination of the degrees of freedom raises serious issues; a complicated procedure has to be followed for the purpose.

Furthermore, even if we assume for the moment that the results imply sampling fluctuations alone causing the means of the two bank sets to differ, how can one deduce from the fact which of the bank sets – Islamic or conventional – is more or less efficient than the other in terms of volume? Here, there is no linkage whatsoever established between statistical significance and banks' performance. His use of the "equality of means test" (p. 120) was misplaced.

Now let us have a look at the ratio analysis part of the paper. The author rightly claims the advantage of the use of ratios to measure bank performance in that it evens up the volume disparities of banks (pp. 120 and 125) but fails to mention any of its limitations.[4] He identifies profitability, liquidity, and credit risk as criteria for the comparative performance evaluation of his two bank sets and selects three ratios under each criterion for the purpose. Let me not question the efficacy of his ratio selection but one must know the numerator and denominator of each and especially the method employed for averaging them. Has he taken their weighted mean or the simple mean? For, the choice might affect the results materially. There is room for presumption that he has taken the simple mean of the ratios.

The weighted mean of ratios must equal the ratio calculated by using the aggregates. If we have, for example, two ratios a/b and c/d, their weighted mean can easily be shown as equal to $(a + c) / (b + d)$ but it will not be equal to their simple mean $\frac{1}{2} [a/b + c/d]$. Which of the two means will be greater will depend on the relative values of a and c, provided $a \neq c$. Among the nine ratios the paper uses we have three for whose calculation the needed aggregate values are available in Table 1 of the paper reproduced earlier. These are: the net loans to assets ratio (*NLTA*) used as a liquidity measure, the equity to net loans ratio (*EQL*) for assessing protection available for absorbing loan losses, and equity to assets ratio (*EQTA*) that is listed in the same category of risk cover. We juxtapose in Table 2 below, the ratios in Samad and alternative values we have calculated on the basis of aggregated variables provided in Table 1.

Table 2 gives rise to two propositions: First, Samad has probably not used the aggregates for his ratios. Second, his *EQL* for Islamic banks at 147.33 is erroneous. For this ratio like all others should be equal to *EQTA* / *NLTA* which it is not. The *EQL* value that satisfies the condition is 86.95.

These blemishes are consequential but more serious is the error of repeating the use of the means difference technique. The ratios are not based on any sampling design, nor is the proof of statistical significance or insignificance in any way related to the performance efficiency of banks, absolute or comparative. In any case, even when one takes the mean of ratios, the resultant figure is still a ratio. And there are separate procedures for finding the significance of proportion differences. But Samad saw fit to use the difference of means formula here as well.

TABLE 2
Comparative Ratios (Percentage)

Ratios	Net Loan to Assets (NLTA)	Equity to Net Loan (EQL)	Equity to Assets (EQTA)
Samad	47.05 (47.53)	147.33 (23.43)	40.91 (11.02)
Hasan	51.56 (44.28)	50.83 (22.49)	26.21 (9.960)

Note: Comparative ratios for conventional banks are shown in parentheses.

3. CONCLUSION

In conclusion, we find that the paper of Samad suffers from many blemishes. He uses an inefficacious methodology in a way that could not help him to achieve the objective of his paper: a logical and reliable pronouncement regarding the comparative efficiency of the Islamic and conventional banks in Bahrain. The only positive contribution of his argument is the section on the literature review though there also he neglects to mention some important contributions, especially those using the fashionable frontier approaches.

Cost-profit factors are important in measuring the efficiency of Islamic banks but not at the expense of the main purpose of their establishment: to help in the promotion of a social dynamism responsive to Islamic norms and priorities (Hasan 2004).

ENDNOTES

1.   The paper does not discuss the 'structure' of Islamic banking: what is discussed under that heading are some of the distinguishing aspects of Islamic banking. The mention of *zakāt* in that connection was a miscarriage: the variable does not play any role in his methodology; it is not even mentioned subsequently. To call *zakāt* a tax is a legacy of orientalist writings on Islam carried forward thoughtlessly by some Muslim scholars. Except for the compulsory payment character, *zakāt* lacks all the features of modern day taxes. A tax, unlike *zakāt*, can be abolished by a piece of legislation, its rates can be altered, and it may not always be aimed to serve specified objectives only. Believers will not, in principle, want to evade or avoid *zakāt*, a common attitude towards taxes. *Zakāt* is part of Muslims' *ᶜibādāh* (worship system). It is the third pillar of the Islamic faith: the *Qur'ān* mentions prayer and *zakāt* repeatedly together.

2.   However, his classification of the issues into (i) in terms of volume and (ii) in terms of ratios could not help him on the efficiency front; rather, it led to avoidable faux pas in the argument.

3.   It would have been more convincing if the author had provided documentation on the point as evidence.

4.   For a discussion of some major limitations of the ratio analysis as an efficiency measure see Hasan (2004, section 3).

REFERENCES

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