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Measuring the Malaysian Islamic Subsidiaries and Commercial Banks' Efficiency

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Abstract. This study measures and ranks the relative efficiency of the domestic Islamic subsidiaries and commercial banks in Malaysia from the year 2008 to 2010. Nine domestic commercial banks and nine Islamic subsidiaries are selected. The study uses the Data Envelopment Analysis as the method to measure the relative efficiency of the selected banks in intermediating personnel expense and total customer deposits (i.e. inputs) into total loan (i.e. output). The study focuses on the technical efficiency, pure technical efficiency and scale efficiency. This study found that the technical inefficiency of the selected banks in 2008 was due to the pure technical inefficiency. This indicated that the scale efficiency was higher than the pure technical efficiency. However, in 2009 and 2010, the pure technical efficiency was higher compared to the scale efficiency. Hence, the technical inefficiency was due to the scale inefficiency.

Keywords: Islamic subsidiaries, commercial banks, efficiency, Malaysia.

1. Introduction

The Central Bank of Malaysia played a major role to ensure the stable performance of the Malaysian financial institutions. One of the initiatives made was the pronouncement of the Financial Sector Master Plan in 2001, which aimed at improving the efficiency, innovation, flexibility, resilience and dynamism of the banking institutions, by paying extra attention on the domestic banking institutions [1]. Thus, this study measures the relative efficiency using the Data Envelopment Analysis (DEA); a non-parametric technique that computes a relative ratio of outputs to each unit of inputs [2].

According to Carton and Hofer [3], the efficiency measures how well the organizations utilize their physical, financial and human resources. Fadzlan [4] analyzes the productivity changes of 10 Malaysian commercial banks for the year 1998 to 2003. The productivity regress of 6.3% was mostly due to the technological change rather than the technical efficiency change (6.1% and 0.2% respectively).

In another study, Hamim S., et al. [5] state that the technical efficiency and cost efficiency of the full-fledged Islamic banks are higher than the Islamic windows, but lower compared to the conventional banks. On the other hand, the Islamic windows are technically less efficient than the conventional banks.

By using a sample of 22 Islamic banks and 18 conventional banks in 11 Organization of Islamic Conference countries, Taufiq, et al. [6] reveals that the Islamic banks are more efficient in terms of the revenue and profit efficiency. However, the conventional banks are more efficient in term of the cost.

In year 2003 to 2007, the conventional commercial banks are 83% more technically efficient than the Islamic banks [7]. In addition, Batchelor and Wadud [8] support that the scale efficiency of the Islamic banks is lower than the conventional commercial banks.

Marimuthu and Arokiasamy [9] investigate the productivity of 20 conventional commercial banks in Malaysia. On average, the improvement in productivity level is 1.7 percent per year. This study argues that

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the improvement in the productivity level is due to the improvement in the efficiency level rather than technological advancement.

2. Research Method

The study analyzed the efficiency level of nine Islamic subsidiaries and nine commercial banks. The duration of study was from year 2008 to 2010. The list of banks included in the study is as Table 1.

Table 1: List of Domestic Commercial Banks and Islamic Subsidiaries Included in the Study

No.	Commercial bank	Islamic subsidiary
1	Affin Bank Berhad	Affin Islamic Bank Berhad
2	AmBank (M) Berhad	Alliance Islamic Bank Berhad
3	Alliance Bank Berhad	AmIslamic Bank Berhad
4	CIMB Bank Berhad	CIMB Islamic Bank Berhad
5	EON Bank Berhad	EONCAP Islamic Bank Berhad
6	Hong Leong Bank Berhad	Hong Leong Islamic Bank Berhad
7	Malayan Banking Berhad	Maybank Islamic Berhad
8	Public Bank Berhad	Public Islamic Bank Berhad
9	RHB Bank Berhad	RHB Islamic Bank Berhad

The data were extracted from the banks' annual report and from the Bankscope Database. The study applied the DEA to measure the relative efficiency. According to Avkiran [2], the relative efficiency is defined as the ratio of weighted sum of outputs to weighted sum of inputs. The study adopted the intermediation approach in defining the inputs and outputs. The inputs selected were personnel expenses and total customers deposits, while the output was total loans.

Three types of efficiency were generated from the analysis, which were the technical efficiency (TE), pure technical efficiency (PTE) and scale efficiency (SE). The TE reflects the ability of a firm to obtain the maximal outputs from a given set of inputs considering the size of operation [2]. On the other hand, the PTE is a measure of efficiency without taking into consideration the scale effect under the variable-return to scale circumstances [10]. The SE is a component of the TE that can be attributable to the size of operation [2]. If there is difference in the TE and PTE score for a particular firm, then the firm is operating at wrong scale or scale inefficient [11].

3. Findings

Table 2 shows the TE, PTE and SE level of the banks for the year 2008. On average, the TE is 70.1%, PTE is 79.3% and SE 89.3%. It must be highlighted that there are two components that contribute to the TE level, which are the PTE and SE level [12]. Based on the result, on average the technical inefficiency of the banks in Malaysia is due to the pure technical inefficiency (also known as managerial inefficiency).

Table 2: Technical Efficiency, Pure Technical Efficiency and Scale Efficiency for year 2008

No.	Bank Name	TE	PTE	SE
1	Maybank Islamic Berhad	1.000	1.000	1.000
2	Public Islamic Bank Berhad	1.000	1.000	1.000
3	AmIslamic Bank Berhad	0.944	0.949	0.994
4	Alliance Islamic Bank Berhad	0.929	1.000	0.929
5	AmBank (M) Berhad	0.896	1.000	0.896
6	EONCAP Islamic Bank Berhad	0.805	0.818	0.984
7	Malayan Banking Berhad	0.720	1.000	0.720

8	EON Bank Berhad	0.720	0.793	0.907
9	RHB Bank Berhad	0.692	0.863	0.801
10	CIMB Bank Berhad	0.684	0.913	0.749
11	Affin Bank Berhad	0.659	0.713	0.923
12	Public Bank Berhad	0.608	1.000	0.608
13	RHB Islamic Bank Berhad	0.590	0.593	0.995
14	Alliance Bank Berhad	0.568	0.619	0.917
15	Hong Leong Islamic Bank Berhad	0.554	0.558	0.991
16	Affin Islamic Bank Berhad	0.467	0.476	0.980
17	Hong Leong Bank Berhad	0.435	0.599	0.726
18	CIMB Islamic Bank Berhad	0.354	0.372	0.953
AVERAGE		**0.701**	**0.793**	**0.893**

Based on the analysis, it is found that Maybank Islamic Berhad and Public Islamic Bank are fully efficient under TE, PTE and SE. The result shows that the most efficient commercial bank is AmBank (M) Berhad, which is ranked as the fifth most efficient bank in the industry. On the other hand, CIMB Islamic Bank Berhad scores the lowest efficiency level under TE and PTE. However, the SE level of CIMB Islamic Bank Berhad is higher compared to the several other banks. Based on the result, it indicates that the low TE level of CIMB Islamic Bank Berhad is mainly due to managerial inefficiency rather than the inefficient scale of operation.

Table 3 below shows the efficiency level for the year 2009. Maybank Islamic Berhad and Public Islamic Bank Berhad are maintaining their efficiency level for the second year of study. In 2009, the most efficient commercial bank is EON Bank Berhad, which is ranked as the fifth most efficient bank. Both managerial efficiency and scale of operation leads to the high TE level of EON Bank Berhad. However, in order to be on the frontier, the bank has to improve their PTE (by 7%) and SE (by 7.8%).

Table 3: Technical Efficiency, Pure Technical Efficiency and Scale Efficiency for year 2009

No.	**Bank Name**	**TE**	**PTE**	**SE**
1	Maybank Islamic Berhad	1.000	1.000	1.000
2	Public Islamic Bank Berhad	1.000	1.000	1.000
3	AmIslamic Bank Berhad	0.907	1.000	0.907
4	EONCAP Islamic Bank Berhad	0.861	1.000	0.861
5	EON Bank Berhad	0.858	0.930	0.922
6	CIMB Islamic Bank Berhad	0.838	0.861	0.973
7	Alliance Islamic Bank Berhad	0.805	1.000	0.805
8	Malayan Banking Berhad	0.805	1.000	0.805
9	AmBank (M) Berhad	0.803	0.937	0.858
10	Affin Bank Berhad	0.798	0.834	0.957
11	Alliance Bank Berhad	0.763	0.794	0.961
12	RHB Bank Berhad	0.752	0.902	0.834
13	Public Bank Berhad	0.727	1.000	0.727
14	CIMB Bank Berhad	0.672	0.824	0.816
15	RHB Islamic Bank Berhad	0.655	0.675	0.970
16	Affin Islamic Bank Berhad	0.567	0.623	0.911
17	Hong Leong Bank Berhad	0.472	0.584	0.808

18	Hong Leong Islamic Bank Berhad	0.439	1.000	0.439
AVERAGE		**0.762**	**0.887**	**0.864**

Surprisingly, CIMB Islamic Bank Berhad, who is ranked lowest in 2008, has improved its ranking to the sixth most efficient bank. The bank has improved its managerial efficiency as compared to year 2008, while maintaining the scale of operation. In contrast, Hong Leong Islamic Bank Berhad is the least efficient bank in 2009. Although the bank is very efficient in terms of managerial efficiency, however, it is operating at the inappropriate scale of operation. On average, the TE for year 2009 is 76.2%, PTE 88.7% and SE 86.4%. This indicates that in 2009, the technical inefficiency is due to the scale inefficiency.

The efficiency level for the year 2010 is shown in Table 4. On average, the TE was 79.2%, PTE 91.4% and SE 86.8%. In 2010, the technical inefficiency is also due to the scale inefficiency.

Table 4:Technical Efficiency, Pure Technical Efficiency and Scale Efficiency for year 2010

No.	**Bank Name**	**TE**	**PTE**	**SE**
1	Maybank Islamic Berhad	1.000	1.000	1.000
2	Public Islamic Bank Berhad	1.000	1.000	1.000
3	CIMB Islamic Bank Berhad	0.926	0.979	0.946
4	AmIslamic Bank Berhad	0.883	1.000	0.883
5	AmBank (M) Berhad	0.880	1.000	0.880
6	Public Bank Berhad	0.832	1.000	0.832
7	Affin Bank Berhad	0.830	0.888	0.935
8	RHB Bank Berhad	0.827	0.967	0.855
9	EON Bank Berhad	0.827	0.913	0.906
10	RHB Islamic Bank Berhad	0.821	0.855	0.959
11	EONCAP Islamic Bank Berhad	0.813	1.000	0.813
12	Malayan Banking Berhad	0.809	1.000	0.809
13	Alliance Islamic Bank Berhad	0.789	1.000	0.789
14	Alliance Bank Berhad	0.709	0.752	0.943
15	CIMB Bank Berhad	0.700	0.836	0.837
16	Affin Islamic Bank Berhad	0.602	0.694	0.867
17	Hong Leong Islamic Bank Berhad	0.501	1.000	0.501
18	Hong Leong Bank Berhad	0.498	0.576	0.864
AVERAGE		**0.792**	**0.914**	**0.868**

Maybank Islamic Berhad and Public Islamic Bank Berhad are on the frontier for the third year. These banks are the benchmark and the model for the other banks in the industry, as they remain efficient in three consecutive years. On the other hand, AmBank (M) Berhad improves the managerial efficiency to become the most efficient commercial bank in 2009. However, the TE level in year 2010 drops by 3% as compared to year 2009.

Meanwhile, Hong Leong Islamic Bank Berhad defeats its commercial banks, Hong Leong Bank Berhad, in the ranking. However, both Hong Leong Bank Berhad and Hong Leong Bank Berhad score low TE as compared to other banks. The inefficiency of Hong Leong Bank Berhad is mainly contributed by the managerial inefficiency. Although the SE level of Hong Leong Islamic Bank Berhad is lower compared to Hong Leong Bank Berhad, but its managerial efficiency helps in improving its ranking. Thus, Hong Leong Bank Berhad must evaluate the managerial efficiency and at the same time review its scale of operation.

4. Conclusion

This study analyzes the efficiency level of the Islamic subsidiaries and commercial banks in Malaysia using DEA. This study focuses on the three efficiency measures, namely the TE, PTE and SE. Based on the findings, in 2008, the technical inefficiency of the selected banks is due to the pure technical inefficiency. However, in 2009 and 2010, the technical inefficiency is due to the scale inefficiency. This is an indication that the banks are operating inappropriate scale of operation. As this trend is continuing for two consecutive years, thus, there is a need for the regulators to review the scale of operation among the selected banks.

There are few limitations of this study. First limitation of this study is the sample size. The study only covers up to the financial year-end 2010, which is the most recent financial year-end available. Therefore, study makes 54 observations on the banks from 2008 to 2010. Since, this study only covers a sample period of three years (i.e. 2008 to 2010), future research may cover for a longer sample period.

In addition, the study only focuses on the Islamic subsidiaries, which are the upgraded Islamic windows. These Islamic subsidiaries are given the license to operate as the full-fledged Islamic banks. In fact, there are two full-fledged Islamic banks, which are not covered in this study; Bank Islam Malaysia Berhad and Bank Muamalat Malaysia Berhad. Thus, future study may include these banks as part of the sample.

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