Financial Performance Evaluation of Domestic Commercial Banks: An Empirical Study in Malaysia

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Abstract: This study aims to evaluate the financial performances of commercial banks over the period from 2011 to 2015 in Malaysia. The sample comprises five domestic commercial banks; CIMB, Public Bank, Maybank, AmBank, and RHB Bank all listed in the Malaysian Stock Market (Bursa Malaysia). The data for this study taken from the annual reports of the banks and Bursa Malaysia official website. This data is analyzed by multiple regression and DEA efficiency scores to check the relationship between bank performance and bank size, operational efficiency and asset management. The asset management, operational efficiency and bank size are taken as independent variables along return on asset (ROA) as dependent variable. The findings of this study reveals there is significant relationship between ROA and asset management. The operational efficiency shows less significant relationship with bank performance. According to the comparison of all predictors, bank size has more strong relationship with bank performance because domestic banks are inefficient to control their costs than efficiently operating by optimized economies of scale.

Keywords: Domestic Commercial Bank, Financial Performance, Empirical Study in Malaysia

Introduction

Banks are considered the mainstay of the global economy, providing capital fund for governance, innovation, job creation, infrastructure, and overall prosperity of the economy (Ishaq, Karim, Zaheer, & Ahmed, 2016). There have been wide and extensive studies in the last few decades on the evaluation of financial performance of financial institutions around the globe. This global attention can be attributed to the increasing globalization and competitive nature of the financial industry and international financial markets. The era preceding the Asian financial crisis of 1998 witnessed the fragmentation of the Malaysian banking system with 88 domestic banking institutions comprising among others 22 domestic commercial banks and 16 foreign commercial banks. However, in year 2000 Bank Negara Malaysia (BNM) which is the central bank of the country initiated and carried out a holistic restructuring, consolidation and rationalization in the banking industry in Malaysia. Beginning from 2011, the financial sector has recorded an expansion of 8.3% at an average annual rate to account for 11.8% of real GDP in 2012 compared to 7.8% in 2011. The Financial Sector Master Plan (FSMP) of 2011 to 2015 implementation witnessed the expansion of the sector by an annual growth rate of 8.3% (Mazlan, Ahmad, & Jaafar, 2016). During this period, the Malaysian financial system has become increasingly more diversified and competitive. Risk Weighted Capital Ratio (RWCR), Return on Equity (ROE) and Return on Asset (ROA) of the domestic commercial banks improved from 4.2% to 11.8%,

1.1% to 1.6% and 13.8% to 16.8% respectively between the years 2011 to 2015. According to Bank Negara Malaysia (BNM) assessment report, domestic banks have reinforced their role as a key contributor of growth in the Malaysian economy. As the country seeks to transform itself to a developed and more competitive economy by 2020 under the Economic Transformation Plan of the Government, financial sector is expected to show a vital role in this transition process based on productivity gains and innovation as envisioned in the Financial Sector Blue Print 2011-20 (FSBP) released by BNM in 2012. The FSBP projected that Total Assets of the banking sector is assessed to raise to nearly three times of GDP by 2020 from 2.4 times in 2011 (Subramaniam *et al.,* 2014).

The Malaysian banking sector's underlying structure remain on stable and sound ground, despite the continuing concerns in US and Europe in terms of slow economic growth rate, high profile sovereign debt calamities and fiscal issues. Factors that we keep close watch on -such as liquidity, Profitability, asset quality, funding and capitalization - continued to show up favorably on our radar (BNM, 2013). Considering the significance of an efficient banking system to the economic development of any country, it is therefore not surprising that a lot of attention has been drawn to this topic in recent years. The financial performance of the banking sector is a subject that has attracted a lot of interest in recent years. Empirical evidences to date are vast on the US banking system (Leonardi *et al.,* 2016) and the banking systems in the developed and western

countries (Ciegis, Ramanauskiene, & Startiene, 2015).

Very few studies have been published in this period on the evaluation of financial performance as well as measuring the efficiency scores of domestic banks in Malaysian banking sector using multiple regression and the input orientation approach of Data Envelopment Analysis (DEA) (Ng et al., 2014). In the light of these knowledge gaps, this paper departs from the aforementioned studies and seeks to provide new empirical evidence on the financial performance of domestic commercial banks in the Malaysian banking sector by including additional variables using descriptive statistics, correlation, multiple regressions as well as the input orientation approach of Data Envelopment Analysis (DEA) from 2011 to 2015. This study will provide the empirical evidence concerning the progress that was made by domestic commercial banks in Malaysia in terms of its financial performance from 2011 to 2015 by producing the indicators for comparison purposes. Secondly, the study's outcome could help the country's financial regulators in development of policy to compact with unexpected change in economic conditions, capital appropriate regulations and other factors that might affect the banks' financial performance.

Literature Review

Mostly, the measurement of the financial performance of banks and other financial institutions has been prepared by using a combination of financial ratios analysis, performance against budget measurements, benchmarking, or a mix of these different methodologies (Armstrong *et al.*, 2015). For instance, it is known in literature of accounting, there are inadequacies related with use of some financial ratios. However, ROA are used to measure the financial performance of domestic commercial banks in Malaysia. Bank size, asset management, and operational efficiency were used together to examine the relationships between them and the financial performance. Basically, most of the literature on current bank performance refers to the objective of financial institutions as that of earning adequate returns and decreasing the risks reserved to earn this return (Abbas, Tahir, & Rahman, 2012). There is a mostly acknowledged relationship between risk and return, the higher the risk then the higher the expected return. Therefore, traditional methodof bank performance have measured both risks and returns. Beltratti and Stulz (2012) suggested in his study that there is a need for greater risk management in relation to more current portfolio management, and this requires a countless importance upon the nature of risk and return in the asset structures of banks, and myriad variation of assets so as to spread and decrease the bank's risks. The growing competition in the international banking markets, the discussion towards monetary unions and the new

technological revolutions proclaim major changes in banking environment. This also enhances the challenge in all banks to make timely preparations in order to be competitive in the new financial relied on the size of their assets. Using a multi standards methodology, the study classified Greek banks along with the return and operational aspects, this study demonstrates the differences of the bank's profitability and efficiency between large and small banks. Frequent studies have been conceded on using ratios (Said and Tumin, 2011; and Almazari, 2011). Likewise, efficiency literarily means the maximum output that can be produced from any specified total inputs. This mentions to the level of efficiency of a firm (DMU) which assigns capitals in order to maximum capacity of output production. Prior research in the banking industry was mainly concerned with the assessment of average productivity, using some kind of indices and with cost evaluation (Ferrier and Lovell, 1990). Later, researchers lean towards to proxy of efficiency by market share. They supposed that banks which control a large market shares are predictable to earn higher profits in return as a result of lower unit costs (Evanoff & Fortier, 1988). Similarly, banks with lower cost organizations could maximize profits either by supporting the current prices level and size or by decreasing the price level and increasing, a positive relationship between market structure. Hence, a firm's profits being accredited to the advances made by more competent firms.

Although, numerous studies accompanied on the efficiency and output in Europe, United States (U.S) and other Asia-Pacific banking industry relating to the financial institutions in their countries. Likewise, the Malaysian banking industry has not monitored traditionally in this direction, there has been few study aimed at this area owing to the lack of available data sources and the small sample of banks compared to the countries mentioned above. As pointed by Kwan (2003), the reason for the research shortage on the efficiency of Asian banks is due to the lack of publicly available data for non-publicly traded Asian financial institutions. The utmost noteworthy research shown on Malaysian banks was by Katib and Mathews (2000) which deliberate the banking industry's management structure features and technical efficiency in Malaysia by DEA from 1989 to 1995. Okuda and Hashimoto (2004) investigated the advanced technology of Malaysian domestic commercial banks with Stochastic Cost Functions approach accustomed to non-performing loans from the year 1991 to 1998. Krishnasamy *et al.* (2004) has explored Malaysian banks post-merger productivity changes. Furthermore, they found that during the period of 2000- 2001, post-merger Malaysian banks has attained a total element productivity growth of 5.1%. Another empirical study by Sufian and Abdul Majid (2006) hypothesize that the large banks are standardly

more x-efficient while the small banks were more price efficient. Matthew & Mahadzir (2006) observed the technical efficiency and productivity of domestic and foreign commercial banks in Malaysia from 1994 to 2000. The findings exposed that the foremost source of productivity growth is technical alteration and foreign commercial banks tends have a higher efficiency level than domestic commercial banks. Tze et al., (2011) provide work for the DEA method. They propose that there is a little development after merger in the banks' financial performance and efficiency score. Prior studies had tended to measure efficiency by assembling data envelopment analysis (DEA) borders relating to particular time periods such as by Sufian (2004) and Mohd Said *et al.* (2008). The former Sufian (2004) expected efficiency levels depends on three sub-periods: 1998 to 1999, relating to the pre-merger period; 2000, reflected as the merger period; and 2001-2003, signifying the post-merger period. The consequences shown that Malaysian banks' efficiency levels declined significantly in the merging period (merger year). But higher during the post-merger period, relative to the pre-merger period. Mohd Said *et al.* (2008) stated inconsistent results. Generally, the merger scheme did not improve the productive efficiency of the commercial banks in Malaysian banking industry. The efficiency scores are projected which relies on three year periods each, to be premerger, merger and the post-merger periods, extending between 1998 and 2003. The aforesaid studies measure efficiency by making a separate limit for the different respective periods. The efficiency scores are then associated between the respective periods in other to enumerating the effects of mergers on their efficiency level. This study contributes to the prior studies by developing a DEA common frontier, pervasive the data collections for all banks in the sample through the study period.

Methodology

This study evaluates the financial performance of five big commercial banks of Malaysia for the period from 2011 to 2015. Using the Multiple regression analysis, the study examines the relationship between financial performance

measured by return on assets through bank size, asset utilization and operational efficiency. Also a Data Envelopment Analysis is carried out using the BCC model to measure the efficiencies of the banks. The sample size of this study contains eight domestic commercial banks operating in Malaysia. The relevant and required data for the purpose of this study was take out from the annual reports; income statements and balance sheets of the respective commercial banks generated from the DataStream of Thomson Reuters. The financial performance, measured by return on assets (ROA), is the dependent variables. The independent variables such as asset utilization, operational efficiency and the bank size (total assets) are calculated to measure their impact on the financial performances of these selected banks. The statistical techniques such as descriptive statistics, correlation analysis and multiple regressions are used to measure the linkages between the variables and also applied to examine the impact of the independent variables on the dependent variables and to measure the differences and similarities between selected banks. In addition, the DEA input orientation approach was accustomed to evaluate the efficiency scores of the selected commercial banks. Following is the equation,

$$y = \beta + \sum xi, j \; \beta j \; \beta i, j + \varepsilon \quad \ldots\ldots\ldots\ldots\ldots (1)$$

H1: There is a significant positive relationship between the financial performance and operational efficiency, asset management, bank size.

H2: There is an influence of operational efficiency, asset management, and bank size on financial performance of domestic commercial banks in Malaysia.

Sample Size

The study sample comprises of the five domestic commercial banks listed on Bursa Malaysia. This study considers time series data on annual basis for independent-dependent variables from audit financial statements from the period 2011-2015. However, due to unavailability of data for certain variables for year 2016, this study limited its scope to 2015 only therefore 05 years' data is used as sample of the study.

Table 1.1 Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
ROA	45	-.0212	.0156	.008288	.0052742
Bank Size	45	18220440	447866818	1.08E8	85627845.887
Asset Utilization	45	.0163	0238	.011880	.0061260
Operational Efficiency	45	.5481	2.2740	1.004612	.3180634

The summary of the descriptive statistics for the dependent and independent variables are presented in Table 1.1. From the descriptive statistics table, the total sample size (N) is 45 observations. The table further reflects that the mean of return on assets (ROA) is 0.008 and standard deviation of 0.005 (M= 0.008, SD= 0.005). The lowest and highest values are - 0.021 and -0.016 respectively. The mean of the bank size is 1.08 while the 53 maximum and minimum are 447866818 and 18220440 respectively with a standard deviation of 85627845.88. Finally, the mean of asset utilization and operational efficiency are .006 and .318 respectively. The maximum rate of asset utilization is .024 while the minimum is -.016 and its standard deviation is .006. Operational efficiency has highest value of 2.274 and the lowest value is .548 while the standard deviation is .318.

Bank Classification

Table (1.2) below classify the banks based on the average total assets. May Bank, CIMB Bank and Public Bank with clearly the highest in terms of average value are classified as large banks, while RHB Bank and AMB Bank fall into the medium bank category. Subsequent descriptive analysis in this study will make reference to this classification.

Table 1.2: Ranks of Malaysian Domestic Commercial Banks Based on Bank Size

BANK RANKING BASED ON BANK SIZE		
BANKS	**AVERAGE Total Assets**	**Classification**
MAYBANK	241853816.2	Large
CIMB	168814041.8	
PUBLIC	144658257	
RHB	76688238	Medium
AMBANK	82583320.07	

Table (1.3) shows the return on assets (ROA) for all five domestic commercial banks in Malaysia from 2011 to 2015, the table depicts the yearly return on assets of the banks as well as the average for the period under study. PUBLIC and CIMB Bank have a similar pattern of increase in their return on assets, the three banks consistently maintained an increase from 2011 to 2015. Similarly, CIMB Bank also recorded a drop 1.53% to 0.75% from 2013 to 2014. However, the two banks picked up afterwards. The remaining banks also witnessed various different trends in their returns. AmBank started with 0.86% in 2001 and dropped to 0.38% the following year with not too impressive performance in the subsequent years recording its worst performance in 2011 but later recorded an increase with 0.61% return on asset in 2015. RHB bank returns has been relatively stable over time but however increased in 2015 to 0.63% from 0.38% in 2011. May Bank and Public bank also have similar patterns with an increase in their respective return to asset in the period under study, while May bank increased from 0.60% to 1.08%, Public bank moved up from 1.35 to 1.40%. However, all the banks have positive total average values. Ranking the banks based on the total average return on assets, Public Bank, May Bank, and CIMB Bank are ranked 1st, 2nd, and 3rd with 1.31%, 1.08%, 0.76% while RHB Bank, AMBank, takes the 4th, and 5th spots with 0.63%, 0.61% respectively.

TABLE 1.3 ROA of five domestic Banks

BANK	2011	2012	2013	2014	2015	AVERAGE
MAYBANK	1.24	1.07	0.22	1.14	1.15	1.08
CIMB	1.53	0.75	1.18	1.31	1.34	0.76
PUBLIC	1.22	1.32	1.16	1.35	1.40	1.31
RHB	0.68	1.01	1.05	1.10	0.77	0.63
AMBANK	0.26	0.81	0.76	1.05	1.25	0.61

Source: Computed from the banks financial statements (2011-2015)

Table (1.4) displays the bank size measured by total assets for each bank for the period 2011 to 2015, and illustrates also the growth rate in assets and the average of total assets. There is a significant increase in the total assets of all the banks under review. May bank total asset increases from RM140878271 in 2011 to RM447866818 in 2015, CIMB bank and Public bank also increased from RM84380323 to RM300152807 and RM53242328 to RM247364887. It is clear from the table that the three large banks; May Bank, CIMB Bank and Public Bank still dominates with average total assets of RM241,853,816.20, RM168,814,041.80 and RM144,658,257 respectively. RHB bank and AmBank follow in that order with average total assets of

RM152386076 and RM108686241 respectively. May bank record the highest increase in total assets compared to other banks in the study under the period of review while Ambank bank has the least increase in total assets.

Table 1.4   Bank Size (Total Assets) of Malaysian Five Domestic Commercial Banks

BANK	2011	2012	2013	2014	2015	AVERAGE
MAYBANK	255650546	268883210	307245771	33513480	447866818	24185381
CIMB	182348808	206172581	237670271	26734778	300152807	16881404
PUBLIC	183833425	175684251	216627548	22580786	247364887	14465825
RHB	104705185	104258853	114687121	12706437	152386076	76688238
AMBANK	88852230	82583124	87545884	76218543	108686241	82583320.

Source: Computed from the banks financial statements (2011-2015)

Regression Analysis

The ANOVA (Analysis of Variance) table below provides us with the inferential test of each model. In particular, the F and its df (degree of freedom) are indicators of how good the model is, as can be seen that all models are statistical significant, which means that every Bank/Variable single predictor variable (bank size, asset utilization and operational efficiency) has a significant impact on ROA.

Table 1.5   ANOVA

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	.001	4	002		
Residual	.000	84	000	250.483	000
Total	.002	88	001		

a. Predictors: (Constant), Operational Efficiency, Bank Size, Asset Utilization

b. Dependent Variable: ROA

Model Summary

Table 1.6 shows the regression model summary for return on asset (ROA) which include R, R-square, adjusted R Square, estimated std. error and durbin-watson value. R is the multiple correlation coefficients, its shows all the variable together (R=.748). R-square is a used check the variation in the dependent variable which is calculated by the model, as can be evidently observed from the table 1.6 that R^2 in the model equals .877 (R^2 = .877). This elucidates that about 87.7% of variance in return on assets (ROA) is foreseen by the mixture of the three independent variables. Adjusted R-square endeavors to adjust this for the intricacy of the model. More difficult models will enlighten more variance than simpler models. Table 1.6 indicates the adjusted R square is .876. Hence, the adjusted R square presents that 87.6% of the variance in return on assets (ROA) has been significantly described by 1% change in the three independent variables. The practically same value between R square and the adjusted R square shows high model fit. Durbin-Watson test was used to check the Autocorrelation. Further, it found that the value is 1.178 which means that there is no autocorrelation.

Table 1.6   Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.748	.877	.876	.001	1.178

The table 1.7 expresses the coefficient for each model tested. Models that the p-value is less than 0.05 (p < .05) is statically significant. Based on the table below the multiple regression analysis results indicates that asset utilization is significant at the 5% confidence level (.000< .05) and positively related to return on asset. However, the other two variables namely bank size and operational efficiency shows insignificant relationship (.08> .05 and .143> .05) and negatively related to return on asset as the bank grow in size and has consequently adversely affected the return on asset (ROA). This negative relationship could be as a result of inefficiency in managing of costs by the banks. The Variance Inflation Factor (VIF) for return on assets was used to check the Multi- Collinearity and found that the values are less than 5, which means that there is no Multi- Collinearity.

Table 1.7   Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	T-value	Significance	Collinearity Statistics	
	Beta	Std. Error	Beta			Tolerance	VIF
1(Constant)	.001	.002		.361	.817		
BANK SIZE	4.340E-12	.000	080	1.838	.080	.821	1.218
ASSET Utilization	.836	.054	852	13.627	.000	.306	3.264
Operational Efficiency	-.001	.001	.088	-1.488	.143	.342	2.722

a. Dependent Variable: ROA

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he multiple regression carried out helped in identifying the relationship between financial performance measured by return on asset (ROA) with the predictor variables (bank size, asset utilization and operational efficiency). The coefficient of multiple determinations in tables 1.6 and 1.7 are .877 and .736; therefore, about 87.7% and 73.6% of the variation in financial performance measured by return on asset (ROA) is explained by the predictor variables. Therefore, at the $\alpha = 0.05$ level of significance, there exist enough evidence to conclude that at least one of the predictors is useful for predicting the financial performance of domestic banks in Malaysia; therefore, the model is useful. We can conclude that the multiple regression analysis shows the existence of a positive correlation between the financial performance measured by ROA and the independent variables (Bank size, asset utilization and Operational efficiency). These findings are consistent with Gaddam et al (2007) and Tarawneh (2006), both studies found out a positive correlation between the dependent and predictor variables.

Conclusion

An efficient banking system shows significant part in the any country's economic development. Commercial banks are the foremost element of the banking system. The banking system must be efficient then they will make instabilities and obstructions in the economy's development process. The current study examined the Malaysian domestic commercial banks' financial performance. Financial performance of commercial banks has been put in the front burners by investors, households and different governments around the globe. This trend is justifiable since banking sector contributes substantially to the finance of the economy. Therefore, bank efficiency is of important concerns to every economy.

This study may be observed from its immense impact to fill an essential gap in existing literature. The findings can increase the existing literature in the study, and may also assist as a preliminary point on which the need for future studies. On the practical aspect, this study will drive a long way in

the support of bank decision makers to focus on the major banking activities that may increase the bank ranking and financial performance positions in comparison with other banks. Such information at the disposal of the management of commercial banks can assist in originating suitable financial strategies for achieving the required planned financial performances. Data analysis shown that the ranking of domestic commercial banks in Malaysia depend on bank size (total asset) is ranked as: May bank, CIMB bank and Public bank are classified as large banks, while RHB Bank and AmBank fall into the medium bank category. Based on the bank size the ranking shows the large banks clearly leading with May bank, CIMB Bank and Public bank coming in that order, followed by RHB bank and AmBank. Findings also show the ranking of the banks on their return on asset classified Public bank to first, Maybank is the second, CIMB bank is the third, followed by RHB bank, and AmBank, in that order.

Based on this ranking statement, this study attained at the conclusion that banks with higher predictors of total assets, bank size does not always mean that it increases better profitable performance. The current study inspected predictors to realize that it has influence on the financial performance of the domestic commercial banks in Malaysia. The regression analysis findings indicate that there is a substantial effect of operational efficiency, asset management, and total assets (bank size) on financial performance. This consequence is also confirmed by correlation analysis between variables of the study. Furthermore, Multiple Regression was used to check the impact of independent variables on ROA. However, the study found out that overall mean score of the domestic banks technical efficiency is 81.33%, less than the mean scale efficiency of the banks with a scale efficiency score of 72.78%. The results recommend that domestic banks technical efficiency is less than the scale efficiency degree. Furthermore, these results entail that domestic banks have been incompetent in costs controlling rather than operating at the wrong scale. Lastly, this study provides understanding activities to bank managers and stakeholders that would improve their banks'

financial performances and also articulate policies for the effective financial system. This study suggest that it might be essential for a bank management to consider all the obligatory decisions for banks financial positions improvement.

Recommendations for Future Research

Despite the limitations for this study, we should keep in mind that this study only examines the relative efficiency rather than absolute efficiency of Malaysian commercial banks. The banks which are considered as efficient in this study are the banks compared among the sample banks in this study. Therefore, future studies may consider adding more banks to the sample size, more so this study should be repeated if there is a new domestic bank entering the Malaysian market. Future studies could also be carried out on the efficiency of Islamic banks in Malaysia or comparison between the financial performance of Islamic banks and conventional banks in Malaysia. Also, perhaps a study on the financial performance of non-banking financial institutions can be undertaken.

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