BENCHMARKING FINANCIAL PERFORMANCE OF SAUDI BANKS USING REGRESSION

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Abstract

Assessing the health of an economy can be accomplished by studying the financial performance of its banks. The hypotheses tested imply that there are significant differences amongst Saudi banks. The financial performance of banks in Saudi Arabia is studied on the basis of financial variables and ratios through the help of Spearmans' rank correlation method. Although, benchmarking performance of banks is done using advanced linear programming models, this study attempts to develop an efficiency frontier on the basis of simple linear regression. Albeit certain restrictive assumptions, this study identifies Al Rajhi bank to be the best bank to which other banks could look up to and justifies this model on the basis of parsimony.

Key words: Banks, Benchmarking, Financial ratios, Financial performance, Regression, Saudi Arabia.

Introduction

Saudi Arabia is the largest crude oil producer and exporter in the world. The country's financial system has grown in the past fifty years from infancy to a modern competitive financial system. From the banking systems' beginnings as mainly branches of foreign banks there are now twelve commercial Saudi banks with over 200 branches throughout the country. The economic growth of Saudi Arabia has seen a decline in the past years with a steady increase in budget deficits. The financial system offers a profitable and growing market that can stimulate the economy. Furthermore, they have some of the strongest banks in the region and the new regional currency will be implemented by 2010 and will make it easier for banks to be regional rather than national.

The Banking system in Saudi Arabia has moved a lot from its first bank Dutch's Nederlansche Handel Maatschappij in 1926 to the nationalization of the banking sector in 1975 leading to the selling of majority equity shares of foreign banks to nationals of the home country. Presently foreign banks are not allowed to open branches on its own. Another important event in between was the establishment of Saudi Arabian Monetary Agency (SAMA) as the Central bank in 1952. Liberalization policies introduced in the banking sector in Saudi Arabia led to consolidated competition, efficient allocation of resources and introducing innovative methods for mobilization of savings. The structural reforms in banking sector are evident in the determination of rate of interest, changes in prudential norms of the regulatory authority. All these would certainly have implications on efficiency and profitability of the banking sector in the kingdom. It is well known fact that, an effective and efficient banking system is important for the long- run growth and development of the economy.

The 12 commercial banks are Arab National Bank (ANB), Saudi Investment Bank (SIB) , Samba Financial Group (SFG), Saudi Hollandi Bank (SHB), Bank Al-Jazira, National Commercial Bank (NCB), Arab Petroleum Investments Corporation (APIC), Riyad Bank (RB), Albilad, Saudi Arab British (SAB) bank, Islamic Development Bank (IDB), Al Rajhi Bank (ARB). This study attempts basically to measure the financial performance and efficiency of Saudi commercial banks. The major objective is to identify a bank which due to its efficient performance can be used to benchmark other banks.

Review of Literature

There is obviously a dearth of literature on banks in GCC in general and in Saudi Arabia in particular. Tarawneh (2006) found that the bank with higher total capital, deposits, credits, or total assets does not always mean that has better profitability performance. Financial performance of the banks was strongly and positively influenced by the operational efficiency and asset management, in addition to the bank size. Al-Faraj (et al., 2006) found the functioning of banks in Saudi Arabia to be efficient. Mostafa (2007) found that ARB and NCB were the best banks in the country. Supinah (et al., 2008) suggested that convenience factors are the most influential drivers if branch channel adoption and that are of assurance for internet banking is most influential factors in the banking adoption. Al-Obaidan (2008) suggested that large banks are more efficient than small banks in the Gulf region. Moody (2008) has praised the volume driven corporate banking strategy of ARB which it advocates will help the bank to sustain itself during the aftermath of the recent financial crisis when retail lending activities will tend to be low. Further, on the basis of its capacity to attract capital at lower cost and risk managing strategies the report expects that the bank would retain its leading position in retail banking. Gaddam (et al., 2009) claimed that mere accumulation of deposits and credits did not lead to optimal financial performance rather asset utilization and operational efficiency were important. ARB and NCB were again found to be the most outstanding banks in the study done by Emrouznejad (2009). Al Khatlan and Malik (2010) using Data Envelopment Analysis (DEA) evaluated the relative efficiency of banks in Saudi Arabia found that Saudi banks are efficiently managing their financial resources. They found the efficiency frontier using CCR and BCR scores and empirically demonstrated that Saudi banks should be benchmarked to ARB Bank. It also approved ARB as the leading bank in Saudi Arabia.

Methodology

As far as the methodology is concerned, ANOVA is used to test whether there is any significant difference between the means of various samples. The final results are derived on the basis of the respective P values at 5% level of significance. In this study ANOVA is used to test as to whether there is any significant difference in total assets, loans, equity, net income and financial ratios between 2000 and 2008 across the banks. The data has been taken from Bankscope database. Also Spearman's Rank Correlation has been used to study the relationship between the variables under study. The significance of the correlation amongst the variables is tested by the Null Hypothesis: correlation coefficient is equal to zero; and Alternate Hypothesis: correlation coefficient is not equal to zero. The significance testing is done both at 5 percent and 1 percent. And finally an attempt is made to develop an efficiency frontier on the basis of a benchmarked bank using regression coefficients. Benchmarking is generally done by the used of complex operation research models of DEA and AHP. Here an attempt is made to develop a model of developing the efficiency frontier using simple regression. But, here there is a caution. The signs of the regression coefficients are ignored the reason being that the variables asset, equity, loan and deposit are bound to be correlated with each other. This correlation may make the sign wrong. And the second caution is that the significance of the regression coefficients is ignored as the sample data is of a small period of five years. For such a small sample the regression coefficient is most probable to be insignificant due to loss in degrees of freedom. Still, this study attempts to study the model and compare its result with similar analysis done with advanced techniques like DEA and try to look for a plausibility of such model formulation. Obviously an improvement of the paper would be repeating the study in future with a bigger sample of data.

Analysis

With reference to difference amongst banks seven different hypotheses have been tested with the Null Hypothesis: there is no significant difference between net income, deposits, loan, equity, ROA, ROE and ROE amongst banks and the Alternate Hypothesis: there is a significant difference between net income, deposits, loan, equity, ROA, ROE and ROD amongst banks

Table 1: Results of Hypotheses Tested For Differences in Variables Among Banks

	F	***P-value***	***F crit***
ROA	3.0096**	0.02	1.904539
ROE	18.01015*	0	2.005543
ROD	53.87888*	0	1.908921
DEPOSITS	26.85242*	0	1.908921
LOAN	17.46769*	0	1.904539
INCOME	20.66724*	0	1.904539
EQUITY	15.67352*	0	1.904539

Source: Computed from data available at https://bankscope.bvdep.com
Note: *indicates significant at 1 percent

** indicates significant at 5 percent

The summarized results in Table-1 indicate that all banks had differences amongst themselves in all the parameters at 5% significant level as all the alternate hypotheses are accepted at. But at 1% significance level the null hypothesis which states that there is no difference in ROA amongst banks is accepted meaning that all the banks under study had a same ROA.

In Table-2 the banks have been ranked as per the variables under this study. From the table it is evident that ARB has the first rank in three cases. It tops in terms of net income, loans and ROA. It also has the second rank in terms of assets, equity and ROE.ARB is closely followed by NCB which tops in assets and deposits and has the second rank in loans and net income. APIC has the last rank in 4 parameters and the second last rank belongs to IDB.

Table 2: Ranking of Banks

Bank	Assets	Equity	Loan	Deposit	Net Income	ROA	ROE	ROD
ANB	6	6	5	5	6	10	7	8
SIB	8	1	7	8	8	7	10	7
SFG	3	4	8	2	3	3	5	12
SHB	7	9	6	7	7	9	6	6
Al Jazira	10	11	10	9	9	2	8	9
NCB	1	3	2	1	2	5	4	11
APIC	12	12	12	11	12	8	9	2
RB	4	6	3	4	4	6	1	10
ALBILAD	9	10	9	10	11	12	12	3
SAB	5	5	4	6	5	4	3	5
IDB	11	8	11	12	10	11	11	1
ARB	2	2	1	3	1	1	2	4

Source: Computed From Data Available At Https://Bankscope.Bvdep.Com

The correlation analysis shows that there is a significant and positive relationship between assets and ROE while the relationship between assets and ROD is negative. Also, loan and ROE are positively and significantly correlated. Again, there is a positive and significant relationship of deposits with ROA and ROD and a negative relationship with ROD. Similarly income also has a positive and significant relationship of deposits with ROA and ROD and a negative relationship with ROD. More over as expected assets, equity, loan and income are all positively correlated with each other. Also ROA and ROE are positively and significantly correlated.

Table 3: Correlation Among Variables Under Study

	ASSET	EQUITY	LOAN	DEPOSIT	INCOME	ROA	ROE	ROD
ASSET	1							
EQUITY	0.74*	1						
LOAN	0.89*	0.69*	1					
DEPOSIT	0.97*	0.68**	0.82*	1				
INCOME	0.97*	0.75*	0.87*	0.95*	1			
ROA	0.54	0.42	0.42	0.57**	0.64**	1		
ROE	0.81*	0.45	0.81*	0.80*	0.86*	0.66**	1	
ROD	-0.62**	-0.38	-0.41	-0.75*	-0.60**	-0.48	-0.5	1

Source: Computed From Data Available At Https://Bankscope.Bvdep.Com

Note: *indicates significant at 1 percent
** indicates significant at 5 percent

Table-4 shows the slope coefficients of the banks of the regression analysis done with net income as the dependent variable and asset, equity, loan and deposit as the independent variables. The table compares the coefficients of all the Saudi banks to the combined score of total banks which is given in the first column. Basically this section attempts to find a benchmark which other Saudi banks would look to. This in a crude way would work an early warning system. The score in the first column of all banks would be a corollary to the concept of efficiency frontier. From a glance at the table it seems evident that ARB is better than the national average by a huge amount except for the score in equity. There are other banks like ANB and NCB whose scores are higher than the national average but the difference in the scores in relatively small. Hence, this study recommends ARB to be the best bank. Interestingly this study gives the same conclusion as given by using complex DEA models (Al Khatlan & Malik, 2010).

Table 4: Regression Coefficients 0f Banks.

	ASSET	EQUITY	LOAN	DEPOSIT
ALL BANKS	**0.06**	**0.48**	**0.04**	**0.01**
ANB	0.34	0.74	0.36	0.41
NCB	0.27	0.79	0.06	0.22
SIB	0.3	0.3	0.06	0
SFG	1.27	0	0	1.37
SHB	0.05	0.03	0.12	0.15
Al Jazira	0.96	0.25	0.25	1.33
RB	0.08	0.48	0.04	0.01
SAB	0.06	0.38	0	0.09
IDB	0.07	0.08	0.02	0.02
ARB	**1.31**	***0.03***	**0.72**	**1.12**
Al Bilad	0.4	0.08	0.15	0
APIC	0.38	0.57	0.14	0.23

Source: Computed From Data Available At Https://Bankscope.Bvdep.Com

Conclusion

To sum up, there are significant differences amongst Saudi banks in terms of financial variables and ratios. The ranking of the banks gives almost same result by both methods, that is, ratio analysis and efficiency frontier using regression. The effort to find the best bank, which according to this study is ARB, through the relative strength of regression coefficient is worth as it is simple and at the same time comparable to the finding arrived at on the basis on advanced linear programming techniques. As a note of caution testing the model for more exhaustive data sets and for different countries is needed before establishing the soundness of the model.

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