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THE ANALYSIS OF BANKS' PROFITABILITY IN SAUDI ARABIA USING CAMELS MODEL

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ABSTRACT

The goal of every business is to make a profit. Banks are not exempt from this, as they are in business in order to make profits. The main source of income for banks is through interest on loans to customers. Banks are also make profits from other businesses they carry out and charge customers for the services they offer. The profitability of banks can be measured using CAMELS rating. Thus, this work was done to determine the profitability and performance of the banking sector of Saudi Arabia using the CAMELS rating. This work was done based on quantitative method. The study was conducted on banks in Saudi Arabia where Riyad bank and National Commercial Bank (NCB) using the CAMELS rating model. The CAMELS rating include six aspects that give the profitability of banks. These aspects are capital adequacy, asset quality, management efficiency, earnings, liquidity and sensitivity to risk. The findings have shown that both banks have adequate capital to cater for their operations. Furthermore, the asset quality, management efficiency, earnings quality and liquidity management for both banks were good.

CCS Concepts

• Information systems→Database management system engines • Computing methodologies →Massively parallel and high-performance simulations.

INTRODUCTION

Over the years, Saudi Arabia's banks have been able to expand their assets despite the effects of lower oil prices, which put downward pressure on the profitability of the banking sector [1]. The trend in profits in the sector is likely to be lower in the medium term, but the banks are well positioned to capitalize on the growth opportunities provided by the new economic development strategies [2]. The oil boom that followed the Second World War resulted in the emergence of the current banking landscape [3]. This period was a period of economic transformation driven by high revenues from hydrocarbon exports [3]. The money supply was rapidly expanding, and the number of banks was increasing, thus calling for greater market supervision. The Saudi Arabian Authority was established at that time and was given the role of regulating the banking industry [4].

Saudi Arabia's banking sector has gained a good reputation and solid credibility on the international market by borrowers [5]. High profitability of banks in Saudi Arabia was associated with well-capitalized banks, cost-management efficiency, low credit risk and high lending activities [5]. The estimated size of the banks does not significantly support the economies of scale of the bank. Other factors found to affect the profitability of banks in Saudi Arabia include interest rates, market share and total capital, current account deposits, reserves, money supply and profit sharing among bank depositors [6].

Controlling the microeconomic environment, taxation and financial market structure results in higher profitability for banks in Saudi Arabia [7]. High capital-to-asset and loan-to-asset ratios lead to higher profitability. Foreign banks established in Saudi Arabia are likely to be more profitable. This is because foreign banks have already established a base in their home country and have therefore diversified their services to make it global [7]. The banking sector in Saudi Arabia consists of about 13 domestic banks, of which 11 are listed, and only the national commercial bank is privately held [8]. The domestic commercial bank dominates the assets and deposits of commercial banks in Saudi Arabia. The balance sheets of Saudi banks are more conservative than those of neighboring countries in terms of their financial profile, low dependence on foreign liabilities and high liquidity [8]. The Saudi Arabian Monetary Authority has established some regulatory frameworks for all banks in the Kingdom to ensure financial stability [9].

The size of the bank may have a negative impact on financial performance, while the use of assets has a positive impact on the profitability of Saudi Arabia's banks [10]. As banks increase their branches due to their size, it becomes difficult to manage as more costs are involved and this leads to a negative impact on the performance of the bank [10]. When a bank makes better use of the resources it has, it is able to make more sales of a few assets, and this leads to a better performance of the bank. Increasing the bank's operations leads to an increase in the net special commission and therefore leads to a decrease in the return on assets and return on equity [11]. Profitability is also analyzed by the use of financial and macro-economic factors. This is investigated by the use of an effective approach to determining the behavior of banking institutions, contributing to the consolidation of the behavior of Saudi banks when it comes to long-term investment, but not short-term profits and avoiding risk exposure [12].

The banking sector is a key pillar of Saudi Arabia's financial systems and plays a major role in the growth of the economy [13]. Increasing the profitability of banks leads to an increase in financial stability and this leads to growth in the financial sector [14]. Determining the profitability of banks is important as it enables banks to determine whether they compete well with their competitors [15]. The profitability of banks can be assessed in a variety of ways, including the use of the profitability ratios identified in the financial statements. CAMELS rating is another method used for calculating the profitability of banks. A lot of research has been done on the profitability of the banks using the camel rating, but none has been done in Saudi Arabia [16-18]. Thus, this work was done to analyze Saudi Arabia banks' profitability by using the CAMELS rating.

METHODOLOGY

This work was done using quantitative research method. The sample population of this work consisted of two banks from Saudi Arabia, the National Commercial Bank (NCB) and the Riyadh Bank. This study used secondary data, consisting of audited annual reports for the two banks, for a period of 5 years from 2013 to 2017. This work was based on the CAMEL rating with a deeper focus on capital adequacy, asset quality, management efficiency, earnings, liquidity and sensitivity to risks. The data collected from the annual reports was analyzed with data entry and analysis tools such as Microsoft excel and the result were presented in graphical form. This study was also based on a sequence of formulas each representing a given variable in the CAMELS rating model. Table 1 shows the formulas used in this work.

Table 1. CAMELS Parameters

CAMELS Parameters	CAMELS sub-Parameters (formulae)	Acronyms
Capital adequacy (C)	Total Equity/Total Asset	TE/TA
	Total Debt/Total Asset	TD/TA
	(Tier-I + Tier-II)/RWA	CAR
Asset Quality (A)	Total Investment/Total Assets	TI/TA
	Total Loan/Total Assets	TL/TA
	Net Non-Performing Assets / Net Advances	TNA/NA
Management Efficiency (M)	No.of employees/Total Revenue	PPE
	Total Loan/Total Deposit	TL/TD
	Total Expenditure / (Net Interest Income + Non- interest Income)	TE / TI
Earnings Quality (E)	Non interest Income/Total Asset	NON-II/ TA
	Assets Net Profit (Loss)/Total Equity	ROA
	Assets Net Profit (Loss)/Total Assets	ROE
Liquidity Management (L)	Liquid Asset/Total Asset	LA/TA
	Liquid Asset/Total Deposit	LA/TD
	Liquid Asset/Short term Liability	LA/SL
Sensitivity to Risk (S)	Demand Deposit/Total Deposits	DD/TD

	Long term Deposits/Total deposits	LtD/TD

Result And Discussion

Capital Adequacy

Capital adequacy is analyzed using charts where the ratios used are the total equity to total asset ratio, total debt to total asset ratio and tier -1 + tier-11/ RWA ratio. This measured the ability of the bank to handle losses and meet its obligations towards customers without quitting from business. Figure 1 shows the capital adequacy ratios. Based on Figure 1, The TE/TA ratio for NCB in 2014 was 0.11, 0.10 in 2015, 0.12 in 2016 and 0.13 in 017. For Riyad bank, it was 0.17 in 2014, 0.16 in 2015, 0.17 in 2016, 0.18 in 2017 and 0.16 in 2018. The total equity to asset ratios is higher in Riyad than in NCB. Based on Figure 1, The total debt to total asset ratios for NCB bank in 2014 are 0.004, 0.019 in 2015, 0.022 in 2016 and 2017. The total debt to total asset ratios of Riyad bank were 0.052 in 2014, 0.068 in 2015, 0.065 in 2016, 0.075 in 2017 and 0.066 in 2018. The ratios of Riyad bank are higher than those of NCB. Based on Figure 1, The (IierI+Tier-II)/RWA of NCB was 0.200 in 2014, 0.192 in 2015 and 0.172 in 2016 and 2017. For Riyad bank, it was 0.184 in 2014, 0.173 in 2015, 0.186 in 2016, 0.196 in 2017 and 0.181 in 2018. The ratio of the NCB has a declining rate while that of Riyad bank start with a rising trend up to 2017 then fall in 2018. The capital adequacy ratios of Riyad bank are higher than those of NCB bank.

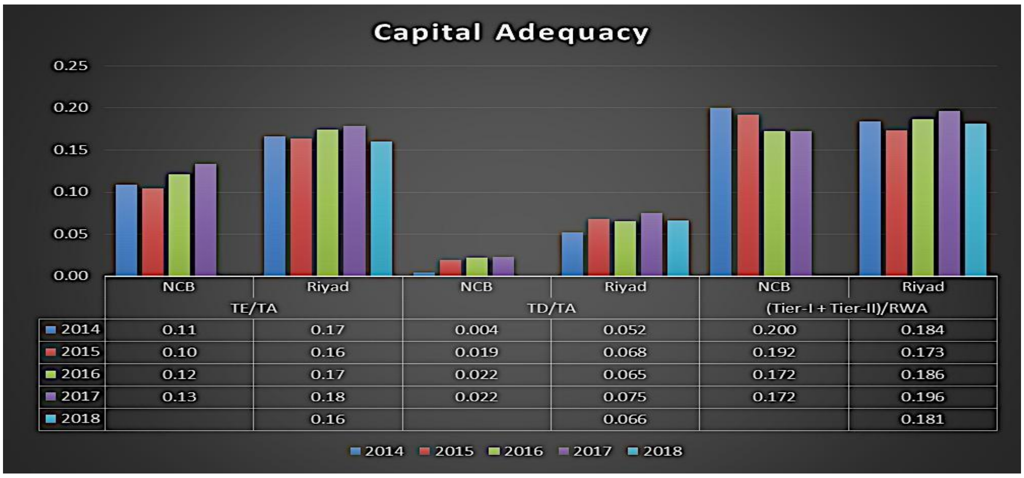

Figure 1. Capital Adequacy Ratios

Asset Quality

Asset quality measures the performance of all assets of the bank. The ratios used include, total investment to total asset ratio, total loan to total asset ratio and net non –performing assets to net advances ratio. Figure 2 shows asset quality ratios. Based on Figure 2, the total investment to total asset of NCB bank had a downward trend from 2013 to 2017 then rose slightly in 2017. The TI/TA of Riyad bank had a declining trend from 2013 to 2018. The ratios of NCB were higher than those of Riyad bank. This means a better performance for NCB bank than that of Riyad. Also the downward trend in this ratio means a drop in investments of the two banks therefore leading to reduced ratios. The total loan to total asset ratio of NCB bank in 2013 was 0.52, 0.58 in 2014, 0.59 in 2015 and 0.56 in 2016. For Riyad bank, it was 0.62 in 2013, 0.61 in 2014, and 0.67 in 2015 then dropped in 2016 and 2017 to 0.62. Furthermore, based on Figure 2, the total loan to asset ratio of Riyad bank is higher than that of NCB. This means that Riyad bank uses more loan financing in its business than NCB does. the net nonperforming assets to net advances ratio of NCB bank was very low where in 2013 it was 0.00 and then remained constant at 0.01 from 2014 to 2017. For Riyad bank it was also low at 0.02 in 2013 and dropped to 0.01 in 2014 and was constant for the following years. The low ratios of net non-performing assets to net advances means that the banks have less nonperforming assets which indicates that the bank has enough performing asset.

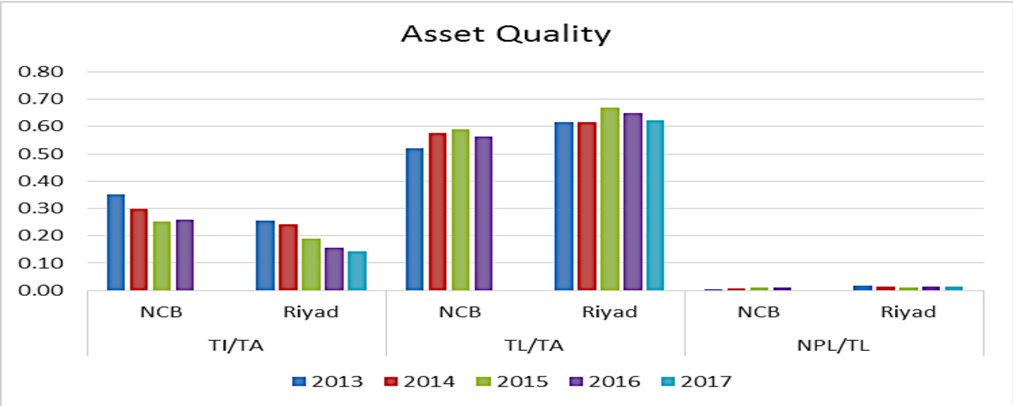

Figure 2. Asset Quality Ratios

Management Efficiency

Management efficiency measured the effectiveness of the management in running the operations of the business. The ratios used here are Number of employees to total revenue ratio, total loan to total deposit ratio and total expenditure to total income ratio. Figure 3 shows management efficiency ratios. Based on Figure 3, the ratio of number of employees to total revenue of the NCB bank had been rising from 2013 to 2015 then fell in 2016. For Riyad bank, it dropped from 2013 to 2015 then raised in 2016 and 2017. The rise in the ratio shows a better management as the bank is able to higher employees according to their revenue. The total loan to total deposit ratio of NCB have had an upward trend from 2013 to 2016, which have also been the trend in the Riyad bank. This means that the two banks have been giving high loans according to their deposits hence making more income. The total expenditure to total income ratio of NCB in 2013 was 0.12, 0.09 in 2014 and 0.12 in 2015 and 2016. For Riyad bank, it was 0.10 in 2013 then dropped to 0.08 in 2015 and remained constant to 2016 then rose to 0.09 in 2017. The total expenditure ratio of Riyadh bank is lower than that of NCB meaning that the Riyad bank management was more efficient than that of NCB bank.

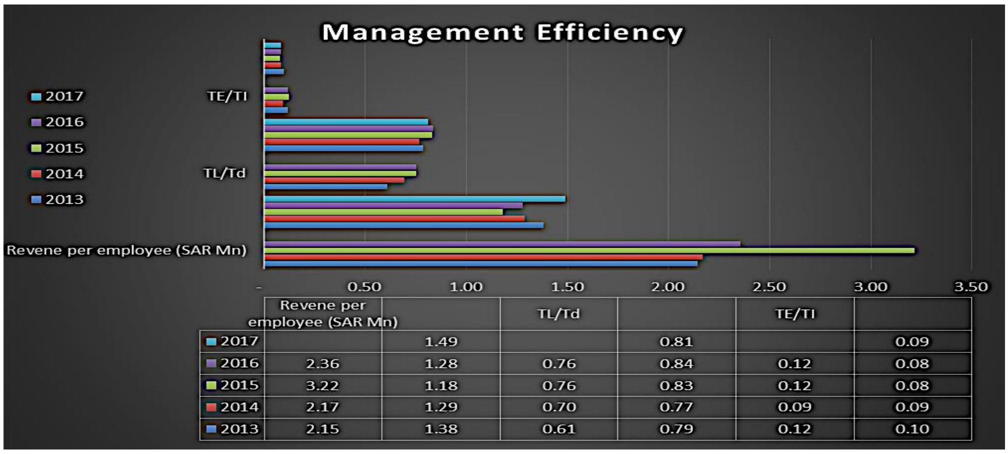

Figure 3 Management Efficiency Ratios

Earnings Quality

Earnings quality shows the income from all operations which include the income from extra ordinary sources. The earning quality is measured using ratios such as non- interest income to total asset ratio, return on assets and return on investment. Figure 4 shows earnings quality ratios. Based on Figure 4, the non-interest income to total asset ratio of NCB in 2014 was 4.31 then dropped to 4.08 in 2015 but rose to 4.24 in 2016 and 4.26 in 2017. For Riyadh bank, it was 3.73 in 2014. 3.57 In 2015, 3.44 in 2016, 3.76 in 2017 and 3.88 in 2018. The ratio in NCB is higher than Riyad which means that it has more non-interest income than Riyadh does. Non-interest income is attained other investments other than loans. The return on asset of NCB bank was 2.08 in 2014, 2.13 in 2015, 2.06 in 2016 and 2.09 in 2017. For Riyad bank, it was 2.08 in 2014, 2.13 in 2015, 2.06 in 2016 and 2.09 in 2017. That of Riyad bank was 2.07 in 2014, 1.85 in 2015, 1.52 in 2016, 1.82 in 2017 and 2.11 in 2018. The return on assets of NCB has high value than that of Riyad bank which means that it is able to generate more income using its assets than Riyad. The return on equity ratio for NCB in 2014 was 19.18, 20.09 in 2015, 18.29 in 2016 and 16.5 in 2017. For Riyad bank, it was 12.54 in 2014, 11.24 in 2015, 9 in 2016, 10.33 in 2017 and 12.51 in 2018. The return on asset ratio of NCB is also higher than that of Riyad which shows its ability to generate more income from their equity.

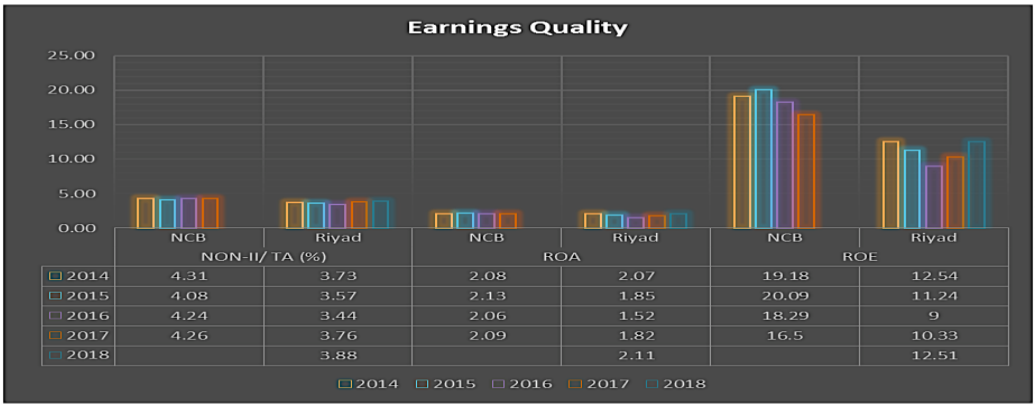

Figure 4 Earnings Quality Ratios

Liquidity Management

Liquidity management is the ability of the bank to convert assets into cash. It is measured by use of three ratios which are liquid assets to total asset ratio, liquid asset to total deposit ratio and liquid assets to short term liability ratio. Figure 5 shows liquidity management ratios. Based on Figure 5, the liquid asset to total asset ratio of NCB bank was 0.05 in 2014, 0.11 in 2015, and 0.14 in 2016 and 2017. The ratio has an upward trend showing increase in liquidity. For Riyad bank, it was 0.14 in 2014, 0.13 in 2015, 0.12 in 2016, 0.13 in 2017 and 0.09 in 2018. The ratio of Riyad does not have a specific trend as it keep on falling and rising therefore no trend of liquidity. The liquid asset to total deposit ratio for NCB was 0.05 in 2014, 0.13 in 2015 and 0.18 in 2016 and 2017. For Riyad bank, it was was 0.17 in 2014 and 2015, 0.16 in 2016, 0.17 in 2017 and 0.11 in 2018. The ratio of Riyad is higher than that of NCB up to 2015 when NCB overtake it showing that NCB continue to improve it liquid asset to deposit ratio. The liquid asset to short term liability ratio for NCB bank is 0.05 in 2014, 0.12 in 2015, and 0.16 in 2016 and 2017. For Riyad bank, it was 0.16 in 2014 and 2015, 0.14 in 2016, 0.16 in 2017 and 0.10 in 2018. The liquid asset to short term liability ratio for NCB has an upward trend. This shows an increase in liquid assets of the bank. However, for Riyad bank, it showed a decline in liquid assets in the year 2018.

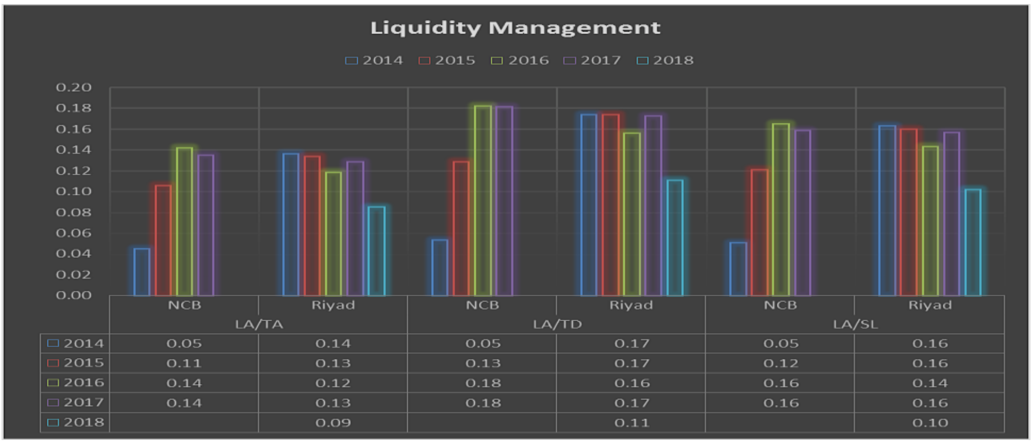

Figure 5. Liquidity management ratios

Sensitivity to Risk

Sensitivity ratios in an assessment criteria that relies on risk based ratio in determining the power of a banks to maintain customer deposits, and ensure a balance is achieved in comparing loans, bad debts, and deposits in a financial year. Figure 6 shows sensitivity ratios. Based on Figure 6, the Demand deposit to total deposit ratio has been stable with a 0.07 change at max for the two banks. The ratio has been high for NCB due to the high value of current accounts available at the bank. The ratio was at it peaks in 2014 and 2017 at 0.76 and 0.77 respectively. Riyad bank ratio is at 50% level with changes of 0.07 change as well with the peak amounts in 2018 and 2017 at 0.51 and 0.52 respectively. The long term deposits to total deposits ratio has been high for

Riyad bank at 0.51 at max level and 0.25 for NCB the ratio has however been decreasing by a significant level annually.

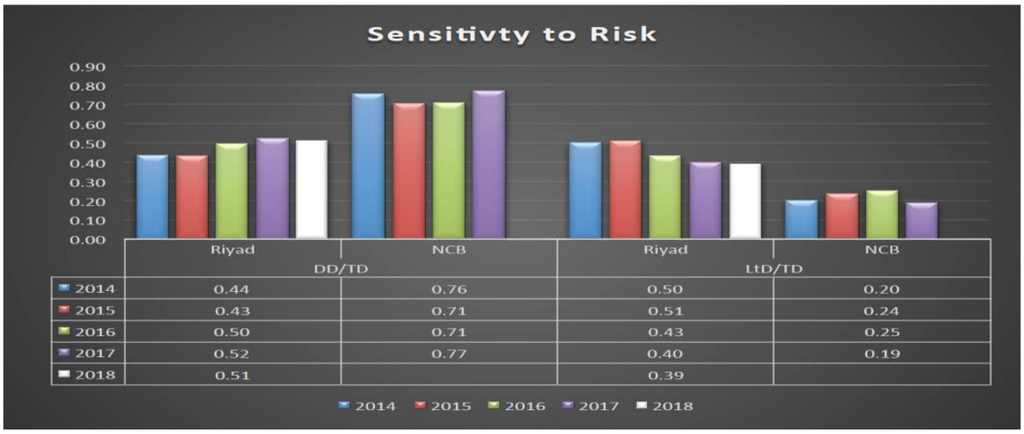

Figure 6 Sensitivity ratios

Overall Discussion

After data collection the six concepts of CAMEL were analyzed. The first analysis was done on capital adequacy. Capital adequacy ratios determine the ability of the bank to meet its obligation without ceasing its operation. The ratios used to determine the capital adequacy of the banks include total equity to total asset ratio, total loan to total asset ratio, net non-performing assets to net advances ratio. Total equity to asset ratio of NCB had an upward trend meaning that the bank was increasing its equity throughout the period. For Riyad bank, it was higher which meant that Riyad bank had more equity to assets compared to NCB. The total debt to total asset ratio for NCB is very low but has an upward trend which means that the bank is increasing its debt financing. That of Riyad is higher than of NCB which means it uses more debt in its operation. The (Tier I+ Tier-II)/RWA of the NCB has a down ward trend while that of Riyad bank keep on falling and rising at different times. A falling ratio represents a better performance of the bank. The three ratios put together can show that the performance of the bank is better.

The other analysis done was on asset quality where three ratios were used. The total investment to total asset ratio of the two banks had a downward trend showing that the two banks had been reducing their investment. The total loan to total asset ratio of the two banks had an upward trend showing increase in the loans for the two banks which represent good asset quality. The net non-performing asset to net advances ratio was very low which means that the two banks have very little non-performing assets. This shows that most assets are performing and it’s a good quality.

The management efficiency ratios show that the management of the two banks were efficient although NCB was more efficient. The number of employee to total revenue ratios were rising, total loan to total deposits also had an upward trend and total expenditure to total income had a downward trend. Earnings quality ratios also showed that the two banks had a better earnings quality. The non-interest income to total asset ratio was high, return on asset and also return on equity were also high a symbol of the ability to generate more income. The liquidity ratios were also favorable for the bank as they shown that the banks had enough liquidity to cater for its daily expenses. This is shown by the liquid asset to total asset ratio being high, high liquid asset to deposit ratio and high liquid asset to short term debt ratios.

CONCLUSION

This work has analyzed Saudi Arabia banks' profitability by using the CAMELS rating. The key findings of this work have shown that the banks have adequate capital to cater for their operations. Furthermore, the results have shown that the asset quality of the banks were very good. Moreover, the results showed that the management of the banks is also found to be efficient. Likewise, the results have shown that the earnings of the banks are also of high quality. In addition, the results have shown that the banks liquidity is also good as the banks are found to have good liquid assets that can be able to cater for its short term expenses.

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