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Performance Evaluation of Listed Commercial Banks In Botswana: The Camel Model

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ABSTRACT

The study evaluated the financial performance of three listed commercial banks in Botswana for the period 2011-2015 applying the CAMEL model. The study used the secondary data sourced from the annual reports of the listed banks. Results indicate that selected banks were highly leveraged and that their liquidity position was sound. The correlation analysis revealed that Earning per share had a significant positive correlation with liquidity ratio of total customer deposits to total assets and that leverage ratio was significantly negatively correlated to the ratio of equity capital to assets. Other CAMEL ratios were not significantly correlated to Earnings Per Share. The regression analysis showed that Capital adequacy, Asset quality, Earning ability and Managerial efficiency had no significant relationship with selected banks' performance measured in terms of Earnings per share. On the other hand, the Liquidity position of these banks was found to be significantly related to the performance of selected banks at 5% significance level. The findings also indicated that, overall, the selected banks performed well during the study period in terms of most of the parameters of CAMEL model with adequate capital and assets when compared to benchmarks. The earning capacity of the selected banks was also on the increase. The findings of this study will be helpful to the management of selected banks in making appropriate managerial decisions.

Key words: Capital Adequacy; Asset Quality; Management Efficiency; Earnings and Profitability; Liquidity; Bank's Performance

INTRODUCTION

Economic prosperity is a sign of success of a country and this is achieved through proper and efficient utilization of country's resources. In this context, banking sector is a major constituent that enables effective and appropriate utilization of financial resources of the country (Babar and Zeb, 2011). Commercial Banks play a dynamic role in the economic development of a

country. They basically gather the idle savings of the people and make them available for investment purposes. They also create new demand for deposits by providing loans and purchasing investment securities. Banks also increase the mobility of capital (Saini and Sindhu, 2014). They are recognized worldwide as drivers of economic growth and job creation, thereby contribute towards alleviation of poverty. This shows that commercial banks are key to economic growth and are expected to be stable and financially sound. It is therefore, critical to measure the financial performance of the commercial banks and reflect on their performance. According to Babar and Zeb (2011), banking industry being an important pillar of the financial sector of an economy, its performance measurement cannot be neglected. It has been observed based on the standing of those countries that experienced crisis in their banking system that such instability can cause irreparable damage to country's economy (Ghasempour & Salami, 2016)

Prior to independence in 1966, the development of Botswana's financial sector was slow, with only two commercial banks in operation, both incorporated outside the country. By the end of 2008, the number has grown to seven commercial banks in the country and this implies positive signs of financial sector development. The profitability in the banking sector has been higher than other countries in Sub Saharan Africa and in Africa as a whole (Moffat, 2009). This study on the financial performance of commercial banks focused on three listed commercial banks in Botswana for the period 2011-2015. The CAMEL model was used to evaluate the financial performance of these banks with the view to assess the significance of their role in the growth and development of the economy of Botswana.

CAMEL MODEL

On November 13, 1979, the Federal Financial Institution Council adopted The Uniform Financial Institution Rating System, referred to CAMEL rating. Later in October 1987, the National Credit Union Administration adopted the CAMEL rating. Reliability, Profitability and Liquidity are critical in the assessment of performance of an organization and in that context, CAMEL model which underscores Capital Adequacy, Asset Quality, Management Quality, Earning Ability and Liquidity as criteria for assessment can be taken as a reliable tool to evaluate the soundness of financial firms ((Ghasempour & Salami, 2016; Aspal and Dhawan, 2016). The first studies on banks' performance came out in late 1980s and early 1990s using the Market Power model and Efficiency Structure model. With the development of various data analytical tools, evaluation of banks' profitability and financial soundness have grown in more advanced analytical models (Roman and Sargu, 2013). In recent years, the most commonly used approach to assess the financial soundness of financial institutions is the CAMELS framework (Baral, 2005). As Rostami (2015) indicated, the CAMEL model is a tool that is very effective, efficient and accurate and can be used as a performance evaluate in banking industries and to anticipate the future and relative risk.

The study adopted the CAMEL model for data analysis, which has 5 performance parameters viz. Capital Adequacy, Asset Quality, Management Quality, Earnings and Liquidity; thus excluding only the Sensitivity element. It is believed that the evaluation of the financial performance of banks should take into account the adequacy of capital, bank management, the earnings and their liquidity (Merchant, 2012).

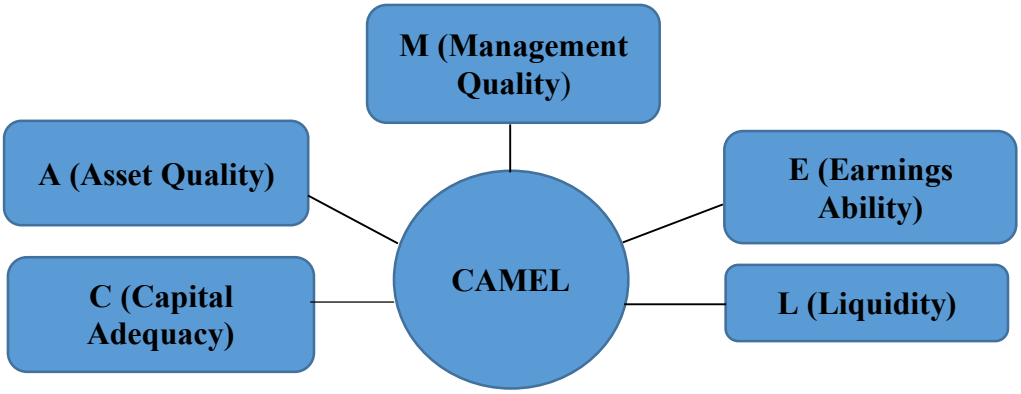

Figure 1: CAMEL Model

PERFORMANCE PARAMETERS OF CAMEL MODEL

The constituents of CAMEL Model are described as follows (Ahsan, 2016; Aspal & Dhawan, 2016; Baral, 2005; Desta, 2016; Gupta, 2014; Keovongvichith, 2012; Mayers & Rajan, 1998; Merchant, 2012):

Capital Adequacy: The financial soundness of banks is well reflected in their capital adequacy. It represents the level of capital that banks need to withstand risks such as credit, market and operational risks. It enables banks to measure its capacity and ability to meets its obligation to customers and to handle the losses without disturbing its normal functions. It is, therefore, essential that banks have adequate capital as it will serve as a buffer against uncertainties.

Asset Quality: The asset quality will assist the banks to appreciate the level of risk that they will face on their disclosure to its customers. This parameter will enable the bank to assess the performance of its assets. Banks try their level best to keep non-performing loans to a small percentage as the existence of large non-performing loans will detrimentally affect their profitability.

Management Quality: Management efficiency is a decisive component of CAMEL model that measures the strength of a bank. It refers to compliance with set standards, ability to respond to the changing environment as well as to the managerial capability and leadership of the bank. Basically, it reflects the level of effectiveness of bank management. The successful running of banks lies in the hands of Board of Directors who constitute the key persons of the bank management.

Earnings Ability: This parameter underscores the bank's existing and upcoming activities with regard to enhancement of its earnings capability. The earnings of a bank constitute income from all operations. By assessing earnings ability, one can check the bank's efficiency to cover all potential losses and its ability to distribute dividends.

Liquidity: Liquidity ratio measures the ability of the bank to meet its immediate obligations. Liquidity is very critical for banks and the confidence of its customers mainly rests upon the banks' ability to meet its immediate commitments. This emphasizes that banks should always maintain adequate liquidity level. It may be noted that increased liquidity can have adverse effect on banks. Whilst having more liquid assets can be seen as bank's ability to raise cash on short notice, it also constraints its ability to implement an investment strategy that offers protection to its investors.

BANKS SELECTED FOR THE STUDY

The banks featured in this study are the three largest and oldest commercial banks in Botswana, namely Standard Chartered Bank Botswana (SCBB), Barclays Bank Botswana (BBB) and First National Bank Botswana (FNBB). The three banks constituted a total of 79 branches and sub-branches between them in the year 2015, compared to a total of 35 for all the other banks (Bank of Botswana, 2017, 12). The total number of commercial banks in Botswana stands at ten (10) (Bank of Botswana, 2017), with the banking sector together with insurance and business services accounted for 14, 7% of the GDP in 2015, having risen over the years from 6% some 50 years ago in 1965 (Statistics Botswana, 2016, 16). This compares quite well with the country's leading foreign exchange earner (minerals) at 18,3% in 2015 (Statistics Botswana, 2016, 16).

The three banks featured in this study between them command substantial commercial banking activities in the economy of Botswana. CAMEL Rating is one of the widely used tools for judging capital adequacy, asset quality, earnings ability and liquidity of the financial institutions such as commercial banks, by the principal regulators all around the world. Financial ratios are often used to measure the overall soundness of a bank and the quality of bank management. The overall indication of the performance of all of the commercial banks operating in Botswana, as assessed by Bank of Botswana (2015, 39) in 2015 using the CAMELS instrument is that they were sound and stable, with only moderate weaknesses.

OBJECTIVES OF THE STUDY

The general objective of the study is to evaluate the financial performance of listed commercial banks in Botswana for the period 2011-2015, using the CAMEL model. The specific objectives are:

1. To measure the Capital Adequacy of selected banks and their impact on financial performance
2. To appraise the Asset Quality of the selected banks and their effect on the selected banks' financial performance
3. To assess the extent to which Managerial Efficiency influence the financial performance of the selected banks
4. To analyze the Earning Ability of the selected banks and see how they affect their financial performance
5. To measure the Liquidity position of the selected banks and observe their impact on their financial performance
6. To draw conclusions on the performance of the listed commercial banks for the 5-year period

TEST OF HYPOTHESIS

The study tested the following five (5) null hypotheses:

H1: Capital adequacy has no significant impact on selected banks' financial performance
H2: Assets quality has no significant impact on selected banks' financial performance
H3: Management efficiency has no significant impact on selected banks' financial performance
H4: Earning ability has no significant impact on selected banks' financial performance
H5: Liquidity of selected banks has no significant impact on their financial performance

Significance of the study:

Financial Performance of a business enterprise has to be evaluated on a regular basis. Lakew, Meniga and Gebru (2014) described performance measurement as the process of quantifying efficiency and effectiveness. Effectiveness is compliance with customer requirements, and efficiency is how the organization's resources are used to achieve customer satisfaction levels.

Tehrani, Mehragan and Golkani (2012) asserted that the evaluation of firms' performance can be a guide that will greatly assist and provide directions for future decisions regarding development, investment, management and control. The authors observed that financial evaluations/analysis is the oldest and important approaches used to measure performance of organizations using financial statements. Such an analysis can provide valuable information on corporate strength, its weakness and the quality of the firm's financial position.

This research on evaluation of the financial performance of listed Banks in Botswana using CAMEL model will enable stakeholders to have a good appreciation of the performance of listed banks in Botswana. The information is valuable as it provides in depth analysis on banks' performance, beyond what one could typically draw from the financial statements. Through such information, potential investors and other interested parties can make informed decisions on their investment choice amongst banks. The findings will be of great assistance to the management, as it will enable them to take proactive steps for the long-term growth of the banks. The Regulators will also find the information useful to come up appropriate rules and regulations. Finally, findings will also add value to the limited literature available on listed banks' performance in Botswana; thereby bridge the research gap that exists currently on the financial performance and soundness of commercial banks in Botswana.

LITERATURE REVIEW

The Financial Performance of financial Institutions in the Banking Sector has been assessed by various academicians, researchers and policy makers at various times. A review of those important studies that highlight the application of CAMEL model are presented below:

Dash and Das (2009) compared the performance of public sector banks in India with private/foreign banks under CAMEL model for a period of 5 years. Results indicated that private/foreign banks performed better than public sector banks on most of the CAMEL parameters. The study also noted that the two contributing factors for the better performance of private/foreign banks were Management Soundness, Earnings, and Profitability

Jha and Hui (2012) studied the financial performance of 18 commercial banks for the period 2005-2010 using CAMEL model. The results indicated that public sector banks were significantly less efficient; however, domestic private banks matched well in efficiency with foreign owned joint venture banks. The study also revealed that return on assets was significantly influenced by capital adequacy ratio, interest expenses to total loan and net interest margin, while capital adequacy ratio had substantial effect on return on equity.

Roman and Sargu (2013), conducted a study on 15 selected banks for the period 2004-2011 to assess their financial performance. The CAMEL method was adopted and the results underscored the strengths and vulnerability of the selected banks, highlighting the need to improve bank's financial soundness.

Lakhtaria (2013), researched on the performance of three public sector banks in India viz. Bank of Baroda (BOB), State Bank of India (SBI) and Punjab National Bank(PNB) using CAMEL approach for the period of three years(2010-2012) and ranked them as per CAMEL model. The results indicated that Bank of Baroda topped among all the three selected banks.

Trivedi (2013) appraised the financial performance of the only scheduled Urban Co-operative Bank in Surat City, The Surat People Co-operative Bank for a period of 10 years 2002-2012 using CAMEL model and descriptive statistics. The results indicated that overall state of capital

adequacy and management efficiency were satisfactory and the overall state of assets quality was good. However, the overall state of liquidity was found unsatisfactory.

Voon (2013) researched on the financial performance of seven local banks and three foreign banks in Malaysia for the years 2007-2011 adopting CAMEL approach and concluded on the basis of results that foreign banks performed better than local banks.

Roman and Sargu (2013), conducted a study on 15 selected banks in Romania for the period 2004-2011 to assess their financial performance, The CAMEL method was adopted and the results underscored the strengths and vulnerability of the selected banks, highlighting the need to improve bank's financial soundness.

Ferrouhi (2014) analyzed the performance of major Moroccan financial institutions for the period 2001-2011 applying CAMEL model. Results obtained from the analysis enabled the researcher to rank the selected financial institutions using CAMEL average.

Karthikeyan and Shangari (2014) studied the financial performance of top six private sector banks in India for the period 2009-2013 adopting the CAMEL model. The findings showed that there was negative correlation between Capital Adequacy Ratio and Net Advances to Total Assets in Capital Adequacy Ratio. It also revealed that there was no correlation between ratios of Management Efficiency, Earning Quality and Liquidity.

Gupta (2014) evaluated the performance of public sector banks in India using CAMEL model for the period 2009-13. It was found that that there was a statistically significant difference in the ratios calculated of all the Public sector banks. This indicated that there was difference in the overall performance of these banks.

Liu and Pariyaprasert (2014) looked at the financial performance of 13 Chinese listed Banks for the period 2008-11. The study revealed that return on equity could be influenced by costs to income ratio, operating expenses to assets ratio and Loans to deposits ratio.

Mohiuddin (2014) looked at the financial performance of two major banks in Bangladesh using CAMEL parameters. It was concluded that the capital adequacy, asset quality, management capability and liquidity were found satisfactory.

Mulualem (2015) analysed the financial performance of 14 Ethiopian Commercial Banks for the period 2010-14 and used CAMEL factor measurements. Results indicated that capital adequacy, Asset Quality and Management Efficiency had negative relationship, whereas earnings and liquidity showed positive relationship with both profitability measures with strong statistically significance except for Capital Adequacy which was significant for Return on Assets and for Return on Equity. The findings also highlighted that by reengineering the banks' internal drivers, the Institutions could enhance the profitability.

Kaur, Kaur and Singh (2015) measured and compared the financial performance of leading five public sector banks in India for the period 2009-2014. They adopted the CAMEL approach and concluded that Bank of Baroda was leading in all CAMEL parameters followed by Punjab National Bank in Capital Adequacy, Management Efficiency and Earning Capacity and Bank of India in Asset Quality.

Karim, Zaheer and Ahmed (2016), studied the financial performance of ten commercial banks in Pakistan for the period 2007-2013 using CAMEL model, descriptive statistics, correlation

and regression analysis. The results indicated that Total Deposit to Equity, Non-performing Loans to Gross Advances, Non-performing Loans to Equity, Admin Expenses to Interest Income Ratio, Gross Advances to Total Deposits Ratio were all significantly but negative correlated. On the other hand, Return on Assets and Return on Equity were significantly, but positively correlated. The Interest Income to Total Assets was statistically insignificant with a bank's performance, and that Interest Income was statistically significant with a bank's performance. The cash ratio showed insignificant correlation, whereas the regression result showed that the cash ratio was statistically significant with a bank's performance.

Ahsan (2016) analyzed the financial performance of three selected Islamic Banks in Bangladesh for a period of eight years 2007-2014, using CAMEL model. Results indicate that all the selected banks were in strong position on their composite rating system.

Mousa (2016) evaluated the performance of three selected Islamic Banks in Jordan for the period 2010-15 applying CAMEL model and noted that all the selected banks had adequate capital; their assets and earning capacity were growing in spite of the slowdown of the economy and regional instability.

Mulugeta (2016) analysed the performance of the Ethiopian banking sector for the period of 2010 to 2014 adopting the CAMEL rating system and ranked the selected banks on the basis of each parameter and also based of overall performance. The study concluded by stating that it might be necessary for bank management to take all the required decisions to enhance the financial positions of the bank. It was also noted that the selected banks had kept bad debts/non-performing loans under good control.

Desta (2016) analysed the financial performance of seven African Banks for three years (2012-14) and adopted CAMEL approach to assess the performance. As per findings, banks were rated as strong and satisfactory for capital adequacy ratio and earnings ability. Conversely, the selected banks were rated as less satisfactory, deficient and critically deficient on asset quality, management quality and liquidity.

Masood, Ghauri and Aktan (2016) analysed the performance of Islamic banks in Pakistan using CAMEL model and noted that two of the Islamic banks were showing satisfactory results, while others were on fair position. They also highlighted that there was need to develop financial markets for treasury operations for these banks.

Stephen, Apollos & Adegoke (2016) concluded on their study on the performance of Nigerian banks in the Post Consolidation Era (2005-14) that mergers and acquisitions have significant impact on the performance of emerging banks and the policies have led to increased returns on investment.

Iheanyi and Sotonye (2017) assessed the performance of banks in Nigeria using CAMEL rating. The data that was used was for a period covering 19 years and analysis was done through ordinary least squares. Their findings suggested that management efficiency, earnings and liquidity have no significant impact on the profitability of banks. They researchers also found that asset quality has a negative impact on the profit of the banks.

Zedan and Daas (2017) evaluated the performance and financial soundness of Palestinian Commercial Banks for the year 2015 using CAMEL rating model. Results were used to rank the selected banks and Bank of Palestine was ranked at the top with total components score of 16.

In conclusion, the review of literature indicates mixed results on the impact of CAMEL elements on the performance of banks. While some studies indicate positive impact on performance of banks, there are also cases where negative effects on profitability have been reported.

METHODOLOGY

The purpose of this paper is to explore performance of commercial banks in Botswana for the period 2011 to 2015 using CAMEL approach. The CAMEL approach is a management tool that is used to evaluate bank performance in terms of Capital adequacy, Asset quality, Management efficient, Earnings ability and Liquidity (Reddy & Prasad, 2011). The study has adopted an analytical and descriptive research design.

Literature indicates that a number of ratios are used to measure the five performance parameters of CAMEL model. The following model is developed for the study and takes into account the literature on CAMEL application to measure performance of Banks.

Table 1: CAMEL Parameters and Ratios for Bank Performance Analysis

CAMEL PARAMETERS	RATIOS	FORMULA
Capital Adequacy	Leverage Ratio	Total Debt /Total Equity
	Equity Capital to Assets	Total Equity/Total Assets
Asset Quality	Provision for Loan Loss Ratio	Provision for Loan Loss/Total Loans
	Ratio of Total Loans to Total Assets	Total Loans and Advances/Total Assets
Management Quality	Ratio of Expenses to Deposits	Total Interest Expense / Total Deposits
	Ratio of Loans to Deposits	Total Loans and Advances / Total Deposits
Earnings Ability	Return on Equity	Net Income / Total Equity
	Return on Assets	Net Income/ Total Assets
Liquidity	Customer Deposits to Total Assets Ratio	Total Customer Deposits to Total Assets
	Cash Ratio	Cash and Cash Equivalent to Current Liability

Capital Adequacy Ratios: The study focuses on two important ratios viz. Leverage Ratio and Equity Capital to Assets. The Leverage ratio provides a clear indication of what proportion of bank's finance was raised through debt and through equity. Theoretically, commercial banks are highly leveraged; hence they are expected to have higher debt than equity in their capital structure(Eakins & Mishkin, 2012). Equity ratio shows the extent to which the total assets of banks are financed by owners' investments. A high equity ratio is considered favourable as most of the bank's assets are financed by shareholder's equity which is considered to be cheaper than debt financing. A high ratio also gives a positive signal on the sustainability of the organization and low risk to the creditors.

Asset Quality Ratios: The asset quality evaluates the proportion of bad debts over total loans originated by a bank. Two ratios are used in the study to reflect on the asset quality among the selected banks, viz. Provision for Loan Loss Ratio and Ratio of Total Loans to Total Assets. The Loan Loss provision coverage ratio indicates the level of protection that the bank has against future losses. Higher the ratio, the better for the bank as it shows that the Bank can withstand future losses in a better way. The Total Loan to Total Assets ratio measures the bank's total liabilities as a percentage of total assets and displays the ability of the bank to clear its liabilities with its assets. The ratio indicates the financial leverage of the firm and shows what

percentage of total assets was financed by creditors, liabilities and debt.

Management quality measures a corporation's profitability by revealing how much profit a company generate with the money invested by shareholders (Ferrouhi, 2014). The ratio of Expenses to Deposits shows the coverage of bank expenses to the deposits. The ratio of Loans to Deposits is used to assess the bank's liquidity. A high ratio indicates that the bank will have adequate liquidity to meet any unforeseen fund needs.

Earnings Ability is measured using Return on Equity and Return on Assets. Return on equity measures the bank's profitability by showing how much profit is generated with the use of Equity. The Return on Total Assets, on the other hand, measures the efficiency of the Bank in the management of its assets to generate profits during a period.

Lastly, **liquidity position** assesses liquidity risk. This can be determined by looking at the proportion of customer deposits to total assets. The cash ratio which is also a liquidity ratio measures the Bank's ability to pay off its current liabilities with cash and cash equivalents. High liquidity ratios are indicative of high liquid status of the business, which promises its creditors of repayment of their loans on time.

CONCEPTUAL FRAME WORK

The following diagram indicates the independent variables and dependent variable used in the study to measure the impact of the independent variables of Capital Adequacy (Leverage and Equity to Assets ratios), Asset Quality (Provision for Loan Loss and Total Loans to Total Assets ratios), Management Quality (Expenses to Deposits and Loans to Deposits ratios), Earnings Ability (Return on Equity and Return on Assets ratios) and Liquidity (Customer Deposits to Total Assets and Cash ratios) on the Dependent variable Earnings Per Share (EPS) of the selected banks.

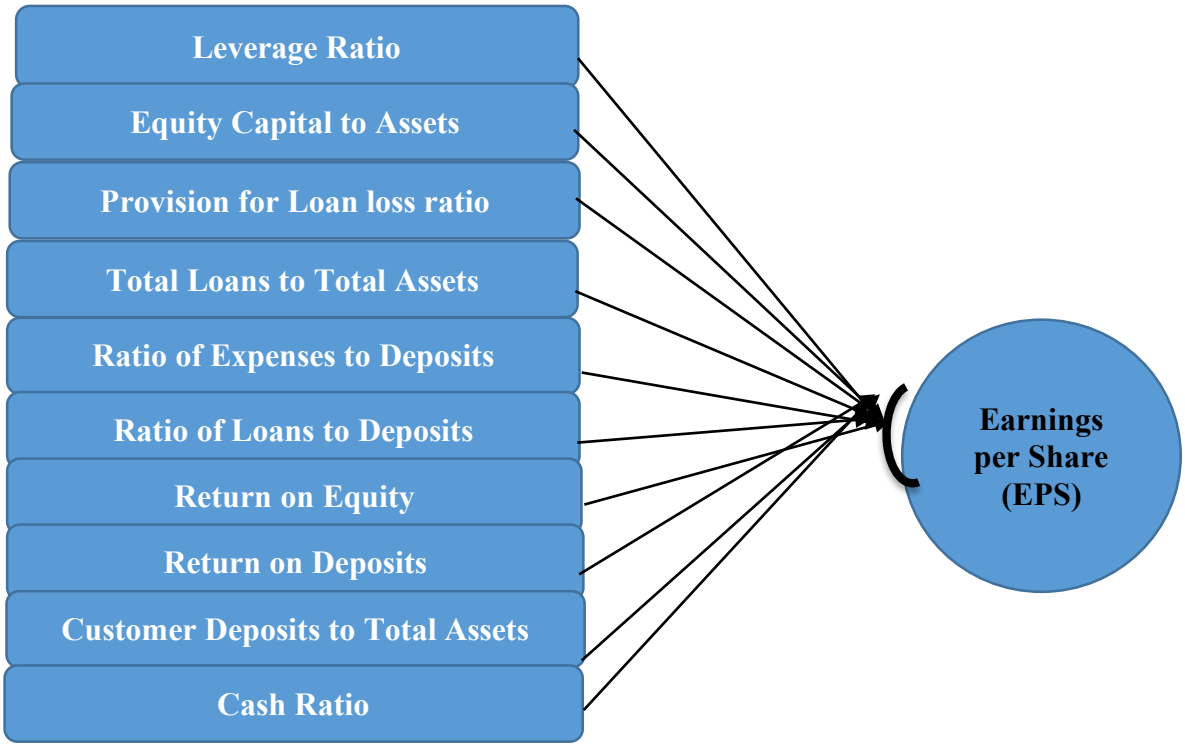

Figure 2: Diagram of Independent & Dependent variables

DATA AND SAMPLING

The population is all listed commercial banks in Botswana and we used non-probability sampling technique known as purposive sampling. This is a subjective sampling technique and allows focus to be on what the study requires and in this respect; elements from a pre-specified group are purposively pursued and tested (Neill, 2003). The data was obtained from annual reports of identified listed companied on Botswana Stock Exchange (BSE) for the post-recession five year period from 2011-2015. Based on the premise that listed companies are the biggest in terms of market capitalization, we focused on commercial banks that are domestically listed on BSE, viz. Barclays Bank of Botswana, First National Bank of Botswana and Standard Chartered Bank of Botswana. The period from 2011 to 2015 was specifically chosen to evaluate the post-recession period and was based on data availability on the selected CAMEL ratios.

DATA SOURCE AND MODEL FOR DATA ANALYSIS

Purposive sampling was chosen for the study, as it is a subjective sampling technique and allows focus to be on what the study requires. In this respect, elements from a pre-specified group were purposively pursued and tested (Neill, 2003). The financial items that we purposefully used to compile required CAMEL ratios and financial statements were extracted from the published annual reports of the three listed banks. This data included the dependent variable being Earnings Per Share (EPS) and the independent variables being ten CAMEL ratios and their abbreviations as shown below. A multiple regression model is developed to measure the relationship and is mathematically expressed in equation 1;

$$EPS_t=\beta_0+\beta_1 LR_t+\beta_2 TETA_t+\beta_3 PLLR_t+\beta_4 TLTA_t+\beta_5 IETD_t+\beta_6 TLTD_t+\beta_7 ROE_t+\beta_8 ROA_t +\beta_7 TDTA_t+\beta_8 CR_t+\varepsilon_t \quad (1)$$

Where;
EPS_t =Earnings per share
LR=Liquidity ratio
TETA=Total equity capital to total assets
PLLR=Provisions for loan loss ratio
TLTA=Total loans to total assets
IETD=Total interest expense to total deposits
TLTD=Total loans to total deposits
ROE=Return on equity
ROA=Return of assets
TDTA=Total customer deposits to total assets
CR=Cash Ratio
$\beta_0, \beta_1, \beta_n$=Coefficients
ε_t =error term

DATA ANALYSIS, AND DISCUSSION OF FINDINGS

This section presents the analysis and findings. The data was analysed using descriptive statistics, followed by correlation analysis and lastly regression analysis. The data covers a 5-year period from 2011-2015. Statistical Package for Social Sciences (SPSS) was used to perform the analysis.

Table 2: Descriptive Statistics

	N Statistic	Minimum Statistic	Maximum Statistic	Mean Statistic	Std. Deviation Statistic	Skewness Statistic	Skewness Std. Error	Kurtosis Statistic	Kurtosis Std. Error
Earnings per share	15	15.88	107.78	50.68	33.4745	0.839	0.58	-0.99	1.121
Leverage ratio	15	6.2860	11.8970	8.6193	1.6985	0.784	0.58	-0.335	1.121
Total equity to total assets	15	0.0775	0.1283	0.1062	0.0165	-0.493	0.58	-0.918	1.121
Provisions to loan losses	15	0.0058	0.0257	0.0142	0.0059	0.472	0.58	-0.203	1.121
Total loans to total assets	15	0.4813	0.8716	0.6410	0.0892	0.908	0.58	2.52	1.121
Total expenses to total deposits	15	0.0196	0.0401	0.0270	0.0071	0.852	0.58	-0.63	1.121
Total loans to total deposits	15	0.6548	0.9535	0.8206	0.0846	-0.421	0.58	-0.398	1.121
Return on equity	15	0.0560	0.5034	0.2946	0.1072	-0.44	0.58	1.112	1.121
Return on assets	15	0.0044	0.0449	0.0307	0.0114	-0.708	0.58	0.485	1.121
Total deposits to total assets	15	0.7840	0.8730	0.8237	0.0261	0.268	0.58	-0.604	1.121
Cash ratio	15	0.0179	0.2369	0.1033	0.0726	0.394	0.58	-0.958	1.121
Valid N (listwise)	15								

Descriptive statistics generated through SPSS are shown in Table 2. The dataset is comprised of a 5-year annual data for the three domestically listed commercial banks in Botswana from 2011-2015, which totalled 15 observations. The dependent variable is measured by Earnings per share (EPS). The EPS has a minimum value of P15.88 and a maximum of P107.78. Meanwhile the mean return is P50.68. The independent variables included CAMEL measures of capital adequacy, asset quality, management quality, earnings ability and liquidity.

Capital adequacy for the three banks was measured by two ratios, namely; leverage ratio and equity capital to total assets. The leverage ratio (LR), as measured by the ratio of total debt to total equity retained a mean value of 8.6193, underscoring that domestically listed banks maintain almost 9 times more debt than equity in their capital structure, hence highly leveraged. In contrast, the ratio of equity to total assets (TETA) depicted a mean value of 0.1062 or 10.6%, which was above the benchmark of 4-6% (Desta, 2016). This result confirms that the three banks are highly leveraged. As a result, we conclude that the three banks kept enough capital to cushion themselves against insolvency in the period under study, whilst ensuring that they use more debt to raise their profitability ratios. In retrospect, their capital ratios should be above the statutory requirement of 15% in Botswana. Banks in Botswana are required to maintain a capital adequacy ratio at or above 15 percent, which, in the context of the current macroeconomic and financial environment, is regarded as a safe and prudent level (Bank of Botswana, 2015).

On the other hand, asset quality was measured by provisions for loan loss ratio and ratio of total loans and advances to total assets respectively. The mean value for provisions for loan loss ratio was 0.0142. Further, asset quality as measured by Ratio of Total Loans to Total

Assets (TLTA) retained mean value of 0.641 and standard deviation of 0.0892. This outcome shows that nearly 64% of the assets of these banks are comprised of loans, which underscores their quality when juxtaposed with the returns.

Meanwhile management quality as measured by the Ratio of Expenses to Deposits and Ratio of Loans to Deposits retained mean values of 0.0270 and 0.8206 respectively. The ratio of Total Loans to Total customer Deposits (TLTD) should be less than or equals to 80% (Desta, 2016). On the other hand, about 82% of loans were generated from total deposits, which show a concern in terms of bank management with regard to asset transformation. On the other hand, average expenses were 2.7% of total deposits for the period understudy, which shows good expense management.

Earnings ability measures of return on equity and return on assets recorded means and standard deviations of 0.2946 (0.0307) and 0.10716 (0.0114) respectively. This shows that on average, the return on equity was a bit higher at about 29% when compared with the return on assets of 11%. This shows that the commercial banks have been able to generate more return for their shareholders and generated more return per Pula of invested assets, as was above 15% and 1% benchmarks respectively (Babar and Zeb,2011; Desta, 2016), hence showing better earnings ability over the five year period.

In terms of liquidity, the ratio of total customer deposits to total assets and cash ratio recorded means of 0.8237 and 0.1033 respectively. The ratio of deposits to total assets should greater than 75% (Desta, 2016). However, the three commercial banks recorded a liquidity ratio of about 82% which is higher than the benchmark; thus indicating a better liquidity position.

Table 3: Correlation analysis

		EPS	LR	TETA	PLLR	TLTA	TETD	TLTD	ROE	ROA	TDTA	CR
EPS	Pearson Correlation	1										
	Sig. (2-tailed)											
LR	Pearson Correlation	0.291	1									
	Sig. (2-tailed)	0.293										
TETA	Pearson Correlation	-0.318	-.993**	1								
	Sig. (2-tailed)	0.248	0									
PLLR	Pearson Correlation	-0.247	-0.067	0.062	1							
	Sig. (2-tailed)	0.376	0.813	0.825								
TLTA	Pearson Correlation	0.044	-0.263	0.244	-0.335	1						
	Sig. (2-tailed)	0.875	0.344	0.381	0.222							
TETD	Pearson Correlation	-0.105	.623*	-.575*	0.097	-.640*	1					
	Sig. (2-tailed)	0.709	0.013	0.025	0.732	0.01						
TLTD	Pearson Correlation	0.209	-0.285	0.237	0.16	.713**	-.686**	1				
	Sig. (2-tailed)	0.455	0.303	0.395	0.569	0.003	0.005					
ROE	Pearson Correlation	0.163	-0.046	0.034	-0.269	-0.425	0.409	-.548*	1			
	Sig. (2-tailed)	0.562	0.871	0.906	0.332	0.114	0.13	0.034				
ROA	Pearson Correlation	-0.102	-0.463	0.465	-0.185	-0.248	0.188	-0.396	.875**	1		
	Sig. (2-tailed)	0.717	0.082	0.081	0.51	0.373	0.503	0.144	0			
TDTA	Pearson Correlation	.572*	.693**	-.700**	-0.413	0.017	0.241	-0.072	0.05	-0.26	1	
	Sig. (2-tailed)	0.026	0.004	0.004	0.126	0.952	0.387	0.798	0.858	0.349		
CR	Pearson Correlation	-0.275	-0.017	0.005	-0.357	-0.042	0.03	-0.37	0.252	0.248	0.336	1
	Sig. (2-tailed)	0.321	0.953	0.987	0.191	0.882	0.914	0.175	0.366	0.372	0.22	
*. Correlation is significant at the 0.05 level (2-tailed).												
**. Correlation is significant at the 0.01 level (2-tailed).												

Correlation analysis

In order to detect multicollinearity among the variables, cross correlations were performed and the outcome is shown in Table 2. The total number of observations was 15. EPS was significantly positively correlated with the liquidly ratio of total customer deposits to total assets at 5% significant level, with coefficient of correlation of 0.572. The other CAMEL ratios

were not significantly correlated with EPS.

On the other hand, the leverage ratio was significantly negatively correlated at 10% with ratio of equity capital to assets (-0.993). Both these ratios measure capital adequacy. Karthikeyan and Shangari (2014) studied the financial performance of top six private sector banks in India for the period 2009-2013 adopting the CAMEL model and the findings showed that there was negative correlation between Capital Adequacy Ratio and Net Advances to Total Assets in Capital Adequacy Ratio. The leverage ratio is, however, positively correlated with deposits to total assets with a correlation of 0.693. Karthikeyan and Shangari (2014) also revealed that there was no correlation between ratios of Management Efficiency, Earning Quality and Liquidity; which is contrary to our findings.

It was found that the ratio of provisions for loans losses, a measure of asset quality was not significantly correlated to any of the CAMEL ratios. On the other hand, Total loans to assets ratio was only significantly negatively correlated with total expenses to total deposits (-0.640*) and total loans to total deposits (0.713**), with the rest of the variables being insignificant.

Further, as expected, the return of equity was significantly positively correlated with the return on assets at 10% significant level (0.875). The return on equity was also statistically negatively correlated with total loans to total deposits (-.548) at 5% significant level. Meanwhile, the return on assets was only correlated with return on equity (0.875**).

The liquidity ratio of total deposits to total assets was statistically correlated with the earnings per share (.572*) and leverage ratio (0.693**), and negatively correlated with total equity capital to total assets (-0.700**). Lastly, Cash ratio appeared not to be statistically and significantly correlated with any of the variables.

Table 4: Regression Output

Model		Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
		B	Std. Error	Beta	t	Sig.	Tolerance	VIF
1	(Constant)	-1143.672	833.271		-1.373	.242		
	Leverage ratio	-14.288	50.390	-.725	-.284	.791	.003	317.428
	Total equity to total assets	1048.361	4528.758	.516	.231	.828	.004	241.645
	Provisions to loan losses	920.663	1490.479	.162	.618	.570	.301	3.319
	Total loans to total assets	55.944	140.529	.149	.398	.711	.147	6.815
	Total expenses to total deposits	-413.572	2381.750	-.088	-.174	.871	.080	12.541
	Total loans to total deposits	-77.592	185.896	-.196	-.417	.698	.093	10.714
	Return on equity	569.173	284.890	1.822	1.998	.116	.025	40.393
	Return on assets	-5209.767	3240.186	-1.778	-1.608	.183	.017	59.379
	Total deposits to total assets	1527.333	482.512	1.193	3.165	.034	.145	6.899
	Cash ratio	-329.179	119.768	-.714	-2.748	.051	.305	3.277

a. Dependent Variable: Earnings per share

Regression Analysis

The regression model measured the impact of the independent variables of Capital Adequacy (Leverage and Equity to Assets ratios), Asset Quality (Provision for Loan Loss and Total Loans to Total Assets ratios), Management Quality (Expenses to Deposits and Loans to Deposits ratios), Earnings Ability (Return on Equity and Return on Assets ratios) and Liquidity (Customer Deposits to Total Assets and Cash ratios) on the Dependent variable (Earnings Per Share (EPS) of the selected banks.

The regression output is shown in Table 3. Diagnostic tests were performed on the regression model. For example, the model was diagnosed for problems of serial correlation, multicollinearity and goodness of fit. The regression model presented an r-squared value of 0.918. This showed that 91.8% of the variation in the dependent variable (EPS) can be explained by variation in the independent variables.

Further, the model was tested for serial correlation using the Durbin Watson statistic. Nine independent variables out of the 10 were statistically insignificant at 5% significant level (sig-value or p-value > 0.05). However, a ratio of total deposit to total assets was statistically significant with a p-value of 0.034 and a positive coefficient of 1.193. This outcome means that a one unit increase in liquidity ratio as measured by total customer deposits to total assets will increase earnings per share by 1.19 units. Liquidity ratio in a bank measures the ability of the bank to pay off its current commitments (Ahsan, 2016). Liquidity is very critical for banks and the confidence of its customers mainly rests upon the banks' ability to meet its immediate commitments. A positive impact of liquidity on bank performance has also been confirmed in Ethiopia (Mulualem, 2015).

Hypothetical Testing:

The Hypotheses tested were as follows;

H1: Capital adequacy has no significant impact on selected banks' financial performance

Both the leverage ratio and TETA were insignificant at p values of .791 and .828 respectively. This outcome confirms that capital adequacy have no significant impact on bank performance. This outcome is contrary to Mulualem (2015), who analysed the financial performance of 14 Ethiopian Commercial Banks for the period 2010-14 and used CAMEL factor measurements. Results indicated that capital adequacy, Asset Quality, and Management Efficiency had negative relationship with both profitability measures.

H2: Assets quality has no significant impact on selected banks' financial performance

Assets quality as measured by provisions for loan losses and total loans to total assets was found to be insignificant with p-values of .570 and .711 respectively, which was still contrary to Mulualem study who found a negative relationship.

H3: Management efficiency has no significant impact on selected banks' financial performance

The same insignificant relationship was found with the management efficiency ratios of total expenses to total deposits and total loans to total deposits with p-values of .871 and .698 respectively.

H4: Earning ability has no significant impact on selected banks' financial performance

Earning ability calculated using Return on Equity and Return on Assets ratios showed insignificant relationship at 10% with p-values of .116 and .183 respectively.

H5: Liquidity of selected banks has no significant impact on their financial performance

The study, however, revealed that the Liquidity measured using Total deposits to Total assets and cash ratios showed significant relationship at 5% with p-values of 0.034 and 0.051 respectively.

Table 5: Summary of accepted/rejected hypothesis.

Hypothesis	Statement (at 5% significant level)	Result
H1	Capital adequacy has no significant impact on selected banks' financial performance	Accepted
H2	Assets quality has no significant impact on selected banks' financial performance	Accepted
H3	Management efficiency has no significant impact on selected banks' financial performance	Accepted
H4	Earning ability has no significant impact on selected banks' financial performance	Accepted
H5	Liquidity of selected banks has no significant impact on their financial performance	Rejected

SUMMARY OF FINDINGS

To sum up, the correlation analysis has shown that none of the CAMEL ratios except Liquidity ratio has any significant correlation with Earning Per share. The regression analysis underscores that nine out of 10 independent variables were statistically insignificant at 5% significant level. On the basis of the above findings, hypotheses 1, 2, 3, and 4 are accepted and hypothesis 5 is rejected.

CONCLUSION

The aim of the study is to evaluate the performance of listed commercial banks in Botswana using the CAMEL model for the period 2011-2015. The specific objectives were to assess the Capital Adequacy, Asset Quality, Managerial Efficiency, Earnings Ability and the Liquidity position of the selected banks and to measure their impact on the financial performance of the selected banks. In addition, the study aimed to reflect on the overall performance of the listed commercial banks for the 5-year period.

The study confirms that all the selected banks are highly leveraged indicating that the banks had adequate capital funds that would comfortably provide coverage against bankruptcy. It is worth noting that 64% of the assets of the selected banks were made of loans, which emphasized the quality when contrasted with returns. However, 82% of the loans were generated from deposits, which might be a concern for asset transformation. It is encouraging to note that average expenses during the period of study stood at 2.7% of the total deposits that indicates efficient control over expenses. The earning ability registered a good return to the shareholders, a rate that was above 15%, exhibiting strong earnings ability over the five-year period. The liquidity position of the selected banks during the period of study was also very sound.

The correlation analysis indicated that Earnings per share had a strong positive relationship with liquidity ratio of total customer deposits to total assets. The other CAMEL ratios, however, were not significantly correlated with EPS. On the other hand, the leverage ratio was significantly negatively correlated with ratio of equity capital to assets.

The regression analysis showed that nine independent variables out of the 10 were statistically insignificant at 5% significant level (sig-value or p-value > 0.05). Capital adequacy, Asset quality, Earnings Ability and Managerial efficiency had no significant relationship with selected banks' performance measured in terms of Earnings per share. On the other hand, the Liquidity position of these banks was found to be significantly related to the performance of selected banks at 5% significance level. Liquidity ratios measure the ability of the bank to pay off its

current commitments (Ahsan, 2016). Liquidity is very critical for banks and the confidence of its customers mainly rests upon the banks' ability to meet its immediate commitments. A positive impact of liquidity on bank performance has also been confirmed in Ethiopia (Mulualem, 2015).

The findings also indicate that, overall the selected banks performed well in terms of most of the components of CAMEL model, similar to the findings of Mousa (2016) who evaluated the performance of three selected Islamic Banks in Jordan for the period 2010-15 applying CAMEL model and noted that all the selected banks had adequate capital, their assets and earning capacity were growing in spite of the slowdown of the economy and regional instability.

In conclusion, the findings of this study will be helpful to the management of selected banks in making appropriate managerial decisions. The results of the study will also assist both investors and shareholders to make informed decisions on their investment in banks in Botswana.

LIMITATIONS & DIRECTIONS FOR FUTURE RESEARCH

The study faced constraints in terms of getting data on other variables prescribed in the CAMEL model such as number of employees, which was not readily available from company websites. Further, the study focused only on major commercial banks that are listed on the domestic bourse. A study in future with much larger sample of commercial banks in Botswana with inclusion of all CAMEL ratios will provide a better picture on the performance of commercial banks in Botswana. Despite the aforementioned limitations, the study provides an in depth understanding of the financial performance of selected listed commercial banks in Botswana.

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