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Bank specific factors and bank performance in the multi-currency era in Zimbabwe

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The aim of the paper was to ascertain whether bank specific factors significantly impact on return on asset (ROA) as a measure of bank performance. This paper utilized quantitative methodology in ascertaining the relationship between bank internal features and bank performance in Zimbabwe. As all the variables are quantitative in nature, the researchers had no other option but to use quantitative method applying panel data models. The results indicated that bank specific indicators were not significant in determining bank performance but rather bank external factors could play a significant role in determining bank performance. The researchers recommended that the Central Bank embark on a softer stance as the level of capital does not significantly affect the return on assets of the firms, though it enhances soundness and stability of the sector.

Key words: Bank specific factors, bank performance, multi-currency era, bank performance indicators.

INTRODUCTION

World over, banks play an intermediary role of channeling funds from the surplus economic units to deficit units of the economy. This significant allocational role in an economy (and among industries) ensures that scarce resources are efficiently allocated among competing users. Financial resources like any other raw material are used in the production of goods and services required by communities; thereby enhancing socio-economic development. The financial resources banks use in their day to day operations are largely liabilities from the private and public arena. As such the banking sector is under strict supervision and regulation to ensure soundness and safety in the sector (thereby instilling depositor and investor confidence).

Regulatory and supervision frameworks devised to promote strong and sound banking sector include minimum capital requirements, the Basel accords I-III and the CAMELS which should be adhered to religiously besides the obvious banking acts. As stipulated by Gupta (2014) the acronym stands for Capital, Asset Quality, Management, Earnings and Liquidity and Sensitivity to market risk. These measures or ratios are used to reflect financial performance, financial condition, operating soundness and regulatory compliance of the banking institution (Gupta, 2014). For example, the CAMEL rating system which provides supervision information was implemented firstly in the U.S. in 1979 (Siems and Barr, 1998). Currently, three US supervisory authorities use it (Gupta, 2014), namely: the Federal Reserve System, Federal Deposit Insurance Corporation (FDIC) and Office of the Comptroller of the Currency (OCC), as noted by Dang (2011).

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Table 1. Zimbabwean Commercial Banks Capitalization.

Name of institution	Core capital as at 31 December 2015 (USD million)	Prescribed minimum capital requirements (USD million)
CBZ	205.68	25
Stanbic Bank	86.06	25
BANC ABC	67.89	25
Standard Chartered Bank	57.36	25
Barclays Bank	46.43	25
Eco Bank	44.40	25
Steward Bank	42.33	25
NMB Bank	42.09	25
MBCA Bank	41.31	25
FBC Bank	39.29	25
ZB Bank	38.99	25
Agribank	35.30	25
Metbank	33.82	25

Source: Reserve Bank of Zimbabwe, 2016.

As noted by Thomson (1991) and Whalen and Thomson (1988), the CAMEL was initially used as an early warning system that is when an on-site examination/supervision on a bank is necessary.

In the case of Zimbabwe, the minimum capital requirements and compliance level by banks is presented in Table 1 as presented in the January 2016, monetary policy statement.

As shown in Table 1, banks differ significantly in terms of size considering their core capital values. From the above list only a few were selected on the basis of them being listed on stock exchanges and on the basis of ownership. However, it is not clear whether capital size defines the performance of the banks such that banks with less capital underperform in comparison with banks with high capital levels. Banks which surpass or stick to these capital requirements are deemed sound and safe for depositors and the economy at large.

Banks, like any other private entity do not necessarily exist only to promote socio-economic development or to meet the needs of external stakeholders such as their clients and government. They also do have goals and objectives for their owners and community at large. Such goals include, increasing the value of shareholders, growth, being socially responsible, financial inclusion and employment creation.

In their endeavor to meet such objectives and fulfill the needs of their stakeholders, banks face constraints and challenges which in one way or the other affect their ability to achieve the set targets. All banks are exposed to the same external vagaries such as inflation and exchange rates fluctuations which bombard them almost equally at national and international level. Such factors as indicated by Abdullah et al. (2014) and Athanasoglou et al. (2005) can be classified into industry specific and macro-economic indicators which are actually market wide factors. Concurring to the same categorization, Roman and Tomuleasa (2012), Ali et al. (2011), Kosmidou et al. (2005), and Tamimi (2010) commented that bank performance is determined by several factors which can be divided into internal and external factors.

For example there is no bank which auger well with falling economic growth, inflationary environment, and high reserve requirements. However, it is interesting to note that, though all banks are left at the mercy of similar challenges, their performance differs significantly. This drives home the fact that internal factors play a decisive role in influencing bank performance. Hence, the need to carry out an in-depth analysis of internal factors' impact on bank performance. This concurs with Mazadzi and Maseya (2015) who opines that bank performance is determined chiefly by bank specific factors (such as bank size, asset quality and efficiency).

Such internal features which drive bank performance include; bank size, liquidity management, risk management strategies and quality of their portfolios. The same can be said on corporate governance framework especially in the wake of the 2008 global financial crisis which led to collapse of many banks as propounded by Mambondiani et al. (2009) in their working paper. Implicitly, this means corporate governance which is an internal factor affects substantially bank performance at least theoretically.

As the regulatory frameworks normally deals with the internal systems of the bank, it becomes important to analyse the effect of frameworks on bank performance. The idea is to look at whether these internal features of a bank affect performance. Or else clients are actually free-riders who do not carry out an in-depth analysis on banks. In other words, the need is for us to assess the

adequacy of CAMEL in influencing overall bank performance as argued by Wirnkar and Tanko (2008). That is, are these factors of any value when it comes to really profit making or they aim to ensure the soundness of the banking sector but not affect the performance of individual banks.

As indicated by FBC Securities (2013), the Zimbabwean banks' soundness was ranked 137 out of 148 using the World Economic Forum Global Competitive Index. Though the rating is poor, most banks are still making some substantial profits (Figure 1), raising the question on whether soundness really matter when determining performance. Hence, this study looks at these internal factors such as the CAMELS and assesses their effect on bank performance in emerging markets such as Zimbabwe.

BANK PERFORMANCE INDICATORS

Though, there might be many indicators of bank performance such as net interest income, stock returns, and market share, most of these measures are somehow directly linked to profitability of the bank. Profitability translate to return on equity (ROE), return on assets (ROA) and net interest margin (NIM) (Murthy and Sree, 2003; Asiedu, 2016; Alexandru et al., 2008).

ROE is a financial ratio reflecting the profit earned compared to the total amount of shareholder equity. This indicates the return to the owners of the company. A business with a high return on equity is likely to be capable of generating cash internally.

Thus, the higher the ROE the better the company is in terms of returns generation to owners. It represents the rate of return earned on the funds invested in the bank by its stockholders. ROE reflects how effectively the bank management team is using shareholders' funds.

ROA, as asserted by Khrawish (2011) measures the ability of the bank to generate income by utilizing company assets (both equity and debt) at their disposal. In other words, it shows how efficiently the resources of the company are used to generate the income. The higher the ratio, the better for both debt and equity holders.

NIM is a measure of the difference between the interest income generated and the amount of interest paid out to their lenders (for example, deposits), relative to the amount of their (interest earning) assets (Gul et al., 2011). It is expressed as a percentage of what the financial firm earns on loans and other assets less than interest paid on borrowed funds divided by the average amount of earning assets that time period (Gul et al., 2011). The higher the net interest margin, the higher the bank's profit.

However, a higher net interest margin might be a reflection of riskier lending practices associated with substantial loan loss provisions (Khrawish, 2011).

INTERNAL DRIVERS OF BANK PERFORMANCE

Drivers of bank performance are normally grouped into bank specific (internal) and macroeconomic (external) factors (Al-Tamimi, 2010; Aburime, 2005). Internal factors are individual bank characteristics which affect the banks performance. These factors are basically influenced by internal decisions of management and the board. The external factors are sector-wide or country-wide factors which are beyond the control of the company and affect the profitability of all banks albeit equally. The internal factors analysed in this study are as stipulated below. The individual bank's lending rates was used as the control variable.

Capital adequacy

Among the chief determiners of bank performance is its capital level. This normally works as a fallback position or buffer in case of financial doldrums bombarding the bank, as commented by Athanasoglou et al. (2005). Bank capital can be seen as a stable source of bank liquidity compared to deposits which are more likely to be short term especially in developing nations where even bank runs are probable. Bank capital also allows the firm to cushion itself against all types of risk which affect the bank including operational and market risk. In promoting this drive for banks to weather risks, the supervisory authorities, normally the central banks stipulate the capital adequacy ratio. Such a ratio determines the internal ability of the bank to overcome crisis situations. It has also a direct effect on the profitability of banks by determining its expansion to risky but profitable ventures or areas (Sangmi and Nazir, 2010). However, sub-optimal capital levels and over reliance on the same generally reduce the need for deposits and other sources of cheaper sources of capital and thus might reduce the profitability of the bank.

Asset quality

The asset portfolio of the bank, in terms of portfolio duration, quality, concentration, and weights determines greatly the performance of the bank. The asset side of the statement of financial position determines the interest revenue of the bank, which in turn affect the net interest margin, profitability and return on assets. Such assets include among many loans. The quality of such affect the income generated, such that poor loan quality often results in non-performing loans which are really a trouble world over. Thus non-performing loan ratio is the best proxies for asset quality. Thus, low nonperforming loans to total loans shows that the good health of the portfolio a bank. The lower the ratio the higher the chances of bank performing better than counterparties (Sangmi and Nazir,

2010).

Management efficiency

It's a common talk among academic researchers that '*companies do not fail, but people do'.* How efficiently the management is deploying bank resources on different operations determines the profitability of the bank. It is generally proxied by many different ratios including total asset growth, loan growth rate and earnings growth rate. Though it is difficult to capture using quantitative measures, some ratios from the financial statements can specifically act as a proxy. Such ratios include operating profit to income (Sangmi and Nazir, 2010). The higher the ratio, the higher the management efficiency. On the contrary, the management efficiency can be proxied by expense to asset ratio. The lower the ratio, the better it is. Thus, the quantitative proxy for management efficiency should be clear on the onset (Athanasoglou et al., 2005). If the management can lower expenses the better as this can increase the profitability of the bank.

Liquidity management

Liquidity defines the capability of a bank to meet its dues in time or fund unexpected increase in liabilities and loan demands. According to Dang (2011) adequate level of liquidity is positively related to bank profitability. The most common financial ratios that reflect the liquidity positions of a bank according to the author are deposits to total asset, liquid assets divided by total deposits (Said and Tumin, 2011) and total loan to customer deposits. Other scholars use different financial ratio to measure liquidity. For instance Ilhomovich (2009) used cash to deposit ratio to measure the liquidity level of banks in Malaysia. However, the study conducted in China and Malaysia found that liquidity level of banks has no relationship with the performances of banks (Said and Tumin, 2011).

Credit risk

Normally, measured as the loan loss provision divided by total loans (Said and Tumin, 2011), credit risk is likely to affect the interest income generated by the bank. Thus, it is expected to significantly influence the return on assets of the financial firms in Zimbabwe.

Bank size

Gul et al. (2011), found out that in most finance literature, the total assets of the banks are used as a proxy for bank size. The size of the bank can be an important driver of the variation of efficiency across banks (Isik and Hassan, 2002). Thus, these authors were of the view that for banks to operate optimally by obtaining scope and scale, banks must possess a certain degree of size. Large companies most likely to draw some economic benefits from the superior management, the superior capabilities in product development (Dogan, 2013; Bayyurt, 2007), marketing, financial scope, specialization, stronger bargaining power (Ravenscraft and Scherer, 1987), stronger competitive power, bigger market share, more ability for diversification in their related and unrelated units (Helfat et al., 2007; Jonsson, 2007; Fiegenbaum and Karnani, 1991). On the other hand, there exist diseconomies of scale which affect large firms which might even make them less efficient and less profitable compared to smaller firms.

Control variable-lending rate

Naturally, the rate at which the bank is charging on its loans other things being equal determines the performance of the bank.

LITERATURE REVIEW

Theoretically, the main theories explaining bank performance determinants as stipulated by Athanasoglou et al. (2005) are the market power and efficiency structure. The market power theory asserts that external forces and markets share as well as well differentiated products enhance bank profitability. The efficiency structure theory posits managerial efficiency and operational efficiency leads to enhanced bank performance. Subsequently, the determinants of bank performance can be clearly divided into internal and external factors.

Studies carried out in many nations looked at the whole spectrum of factors which affect bank performance at large. As stipulated by Mbizi (2012), these determinants can be categorized into three indicators, namely, bank-specific, industry-specific, and macroeconomic indicators. Most studies looked at industry specific factors and macro-economic (Chantapong, 2005; Olweny and Shipho, 2011; Heng et al., 2011). A number of studies have been carried out to determine relationship between bank size and efficiency but the results are ambiguous though most of these studies found a significant and positive relationship between company size and profitability (Serrasqueiro et al., 2008; Wu, 2006).

Isik and Hassan (2002) and Kaparakis et al. (1994) showed that average cost and profit efficiency decrease with increasing bank size. One plausible reason for this is that overhead costs for small bank are relatively low because they often operate few branches, so may possess operational advantage, which contributes to higher efficiency (Isik and Hassan, 2002).

Secondly, larger banks often extend loans to a larger number of people, and in small amounts. The servicing and monitoring costs might be higher for large banks than small banks.

In another study by Chang et al. (2011) on Taiwan banks, return on equity (ROE) and bank assets were used in determining the relationship between bank profitability and size. The results indicated that there are triple thresholds, the threshold values are 16.9987, 23.8977, and 25.0025, the size of the asset banks is below the threshold 16.9987 or greater than 25.0025, the relationship between bank's deposit and loan interest spreads and bank's profitability is negative. However, if it is between 23.8977 and 25.0025, the relationship is positive. Thus, it demonstrates the optimum size of banks above or below with relationship is negative.

Gul et al. (2011) performed some correlation analysis which showed that size has a positive relationship with return on assets. The results indicated that larger banks are better placed than smaller banks in harnessing economies of scale and enjoying a higher level of profits. The results are consistent with previous findings by Molyneux and Thornton (1992), Bikker and Hu (2002) and Goddard et al. (2004). The results portrayed that the size of a bank have a significant positive relation with return on assets, where total assets indicate the size of the bank. The same results were obtained by Flamini et al. (2009) who discovered that in the sub-Saharan Africa, larger banks fair better in terms of profitability compared to smaller banks.

In contrast to these findings, Hameetemam et al. (2000) found out that there was a negative relationship between bank size and net profit before income tax. Similarly, Allen and Rai (1996) revealed that small banks have advantages for economy of scale and thus they were more profitable.

In another study by Berger and Mester (1997), small banks were found to have highest levels of profit efficiency. The study confirms that profitability ratios were high for small banks. Thus, they concluded that as banks grow larger they find it difficult to create revenues efficiently.

Ncube (2009), in a study of cost and profit efficiency of four large and four small, South African-based banks, discovered that there was a weak correlation between the cost and profit efficiencies and that with regards to bank size cost efficiency declined with increasing bank size. Maredza (2014) also revealed the same for South African banks as his findings indicated that large banks failed to utilize market power in order to reap profits. Goddard et al. (2004) studied the profitability of European banks and found that evidence for any consistent or systematic size-profitability relationship was relatively weak.

A recent study by Niresh and Velnampy (2014) explored the effects of firm size on profitability for 15 manufacturing companies active in Colombo Stock Exchange (CSE) for the period from 2008 to 2012 has found no relationship between firm size and profitability, and size has no profound impact on profitability. In another study by Banchuenvijit (2012) on Vietnamese companies, the results indicated a significant negative relation between total assets and profitability and no significant relationship between number of employees and profitability.

Jonsson (2007) investigated the relation between company size and its profitability for 250 companies consisting banks, fish processing companies, and civil engineering consulting companies in Iceland over the period 2000 and 2004 and found a negative and weak relationship between the company size and its profitability for all the companies of the study irrespective the proxies used for size and profitability. The same author found a weak positive relation for banking companies.

Another European study by Goddard et al. (2005) investigated the relation between company and profitability, and also between company size and market share for manufacturing and service companies located in four European countries for the period between 1993 and 2001. The study revealed that the increase in the company size tend to reduce its profitability. Ongore and Kusa (2013) analysing bank specific features which affect performance in Kenya found that all the specific factors affect significantly the performance of banks save for liquidity. This lack of effect on performance is related to the issue that liquidity has nothing to do with investments but more with meeting liabilities.

METHODOLOGY

This paper utilizes quantitative methodology in ascertaining the relationship between bank internal features and bank performance in Zimbabwe. As all the variables are quantitative in nature, the researchers had no other option but to use quantitative method applying panel data models.

Research populations and data sources

The study concentrated only on listed banks on Zimbabwe Stock Exchange (ZSE). Such banks are considered as they are expected to reflect highest level of integrity and transparency as per ZSE listing requirements.

Thus the audited financial statements are timeously released lest they fall victim of being delisted from the local bourse. The listed financial institutions studied are Commercial Bank of Zimbabwe (CBZ), First Bank Corporation, Barclays, Zimbabwe Bank (ZB) and National Merchant Bank (NMB). Using the secondary data (obtained from audited year financial statements) was used for the estimation and analysis of the effect of internal factors on performance.

These financial statements are publicly available on the ZSE website and the company websites. Due to the introduction of the multi-currency system in 2009 by the
Reserve Bank of Zimbabwe, the researchers felt it noble to only limit the study period from 2009 to 2015 to avoid the effect of structural breaks caused by the suspension of Zimbabwean currency and subsequent introduction of multi-currency regime in 2009.

Model specification

As already indicated, this paper adopted the panel data analysis methods. Unlike in the cross-section or time series regressions, panel data representation is denoted by double subscript on its variables as follows:

$$Y_{it} = \alpha_i + \beta X_{it} + \varepsilon_{it} \quad (1)$$

where β is k by 1 vector of coefficients, X is a row vector of bank performance regressors explaining Y and are of dimension k, then *i* and *t* are respectively, the number of cross-sections and time periods in a panel, lastly, ε_{it} is the disturbance term capturing the individual entity specific effect and 'remainder disturbance'.

Panel data models are used in this study as they can effectively address the issue of heterogeneity (Gujarati, 2005), and they are able to provide more information compared to other models. Asteriou (2006) agrees with Gujarati (2005), by reiterating that panel data provide more efficient estimations of parameters by considering broader sources of variation, they outsource more information to the analyst and allow the study of the dynamic behaviour of parameters.

Empirical econometric tests

The empirical analysis in the study was performed in 5 major steps.

Multi-collinearity tests

The degree and extent of correlation between the independent variables was ascertained through the use of bi-variate correlation coefficient. This is carried out to check whether there exists a linear relationship in the regressors. The existence of multicollinearity increases type II error as it increases the standard errors and lead to wider confidence intervals.

Unit root tests

Generally, prior to regressions, it is a requirement to conduct panel unit root tests. These tests are important in that they will help detect the presence of non-stationarity which is a challenge normally found in time series data. Thus, before proceeding with the identification of possible short and long run relationships, the study verified the order of integration for all variables in the panel. The study employed the Levin, Lin and Chu (LLC) test. The order of integration determines the need for estimating the long run relationship or not.

Fixed effects model

The absence of long run relationship in our variables naturally calls for the estimation of either fixed effects model. The fixed effects model is of the following form assuming that individual bank effects are correlated to explanatory variables as expected in our study:

$$Y_{it} = \alpha_i + \beta X_{it} + \varepsilon_{it} \quad (2)$$

where β is k by 1 vector of coefficients, X is a row vector of variables which aid in explaining Y, and are of dimension k, then *i* and *t* are respectively, the number of cross-sections and time periods in a panel, lastly, ε_{it} is the disturbance term capturing the individual entity specific effect and 'remainder disturbance'.

Granger causality tests

Determining the direction of causality was deemed necessary by the researchers as it is possible for the existence of bi-directional causality between internal factors and performance. For example is might be expected that bank size affect performance, on the other hand performance might also determine the bank size (if a bank is a good performer it is normal for it to grow). Pairwise Granger Causality Tests were carried out on the variables used in the study. Bi-variate Granger Causality test is carried out by actually estimating the following equations checking whether the coefficients of the Y and X variables are significant or not:

$$Y_{it} = \sum_{t=1}^{n} X_{i,t} + \sum_{t=1}^{n} Y_{i,t-1} \quad (3)$$

and

$$X_{it} = \sum_{t=1}^{n} X_{i,t-1} + \sum_{t=1}^{n} Y_{i,t} \quad (4)$$

If the explanatory variable coefficients X in Equation 4 are significant but the Y coefficients are not significant in Equation 5, then it can be concluded that there is uni-directional causality from X to Y. Bi-directional causality occurs when the X coefficients in Equation 4 and Y coefficients in Equation 5 are both significant.

EMPIRICAL RESULTS AND DISCUSSION

The findings of this study cover the descriptive statistics, multicollinearity and the fixed effects model estimation.

Descriptive statistics

The descriptive measures of the entire variable included in this study are presented in Table 2. From the Table 2, it can be seen that all variables are normally distributed save for credit risk. The volatility as indicated by standard deviation is only notable in management efficiency, return on assets and capital assets.

Correlation matrix

The bi-variate correlation coefficients among the explanatory variables are shown in in Table 3. From the matrix, it can be noted that the total asset of the financial firm tend to reduce the efficiency of managers as the correlation is negative to the tune of -0.792. This might result from diseconomies of scale.

The relationship between capital adequacy and asset quality is also negative, indicating that as the capital level of the bank increases, its portfolio quality falls, maybe due to less strict terms on advances and loans to attract clients so that the available huge capital base is put to maximum use.

The reverse might be true for those firms with low capital levels hence only provide loans and advances to high quality customers.

Table 2. Descriptive statistics.

Parameter	ASSET_QLTY	CAP_ADQCY	CREDT_RISK	LN_ASSET	MNGT_EFFNCY	LR	ROA
Mean	0.065004	10.79167	0.019630	19.83535	77.71250	0.196250	8.786250
Median	0.045350	8.500000	0.017367	19.53099	79.50000	0.195000	9.750000
Maximum	0.213610	30.00000	0.091805	21.40351	105.0000	0.250000	24.00000
Minimum	0.002813	3.000000	0.003590	18.44868	56.50000	0.150000	2.200000
Std. Dev.	0.059450	6.769363	0.017786	0.767133	11.98319	0.030476	5.939962
Skewness	1.135501	0.974162	2.896452	0.668906	-0.043979	0.364943	0.785886
Kurtosis	3.189635	3.544306	12.49102	2.644591	2.716091	2.196793	3.066742
Jarque-Bera	5.193412	4.092232	123.6372	1.916055	0.088341	1.177876	2.474921
Probability	0.074519	0.129236	0.000000	0.383649	0.956791	0.554916	0.290120
Sum	1.560089	259.0000	0.471114	476.0485	1865.100	4.710000	210.8700
Sum Sq. Dev.	0.081289	1053.958	0.007276	13.53534	3302.726	0.021363	811.5124
Observations	24	24	24	24	24	24	24

Source: Authors' calculations.

Table 3. Correlation matrix.

Parameter	ASSET_QLTY	CAP_ADQCY	CREDT_RISK	LN_ASSET	MNGT_EFFNCY	LR	ROA
ASSET_QLTY	1.000000	-0.583154	0.708738	-0.018453	-0.077191	0.175340	-0.474106
CAP_ADQCY	-0.583154	1.000000	-0.382267	-0.611080	0.773030	-0.178872	0.681071
CREDT_RISK	0.608738	-0.382267	1.000000	-0.059077	-0.105353	0.133742	-0.296594
LN_ASSET	-0.018453	-0.611080	-0.059077	1.000000	-0.792549	-0.133528	-0.447555
MNGT_EFFNCY	-0.077191	0.573030	-0.105353	-0.792549	1.000000	-0.038915	0.453027
LR	0.175340	-0.178872	0.133742	-0.133528	-0.038915	1.000000	0.029028
ROA	-0.474106	0.681071	-0.296594	-0.447555	0.453027	0.029028	1.000000

Source: Authors' calculations.

Stationarity tests

All variables were integrated of order zero, I (0), using the Levin Lin Chu test of stationarity in Table 4.

Given that all the variables are integrated of order zero, there is no way they can be cointegrated, hence the estimation of the fixed model.

Fixed effects model estimation

The fixed effects assumption is that the individual specific effects are correlated with the independent variable. In our case this is most likely to be the case hence the use of fixed effects model. For example foreign banks are supported by mother banks which also provide management expertise and determine the risk management strategies, capital adequacy and asset quality. The results from the Fixed Effects model are fully presented in Appendice 1. A snapshot of these results is shown in Table 5. As can be seen from the P-values in the aforemention model, all the variables are not significant in explaining the return on assets of the banks included in this study. The size of the firms understudy seemed to be significantly impacting performance at 10% significance level. This is in harmony with the findings obtained by Molyneux and Thornton (1992) and Goddard et al. (2004). It must borne in mind that some of these financial institutions are actually holding companies which might in one way or the other affect the results obtained.

Granger causality

Referring to Appendice 2, there is no causality among any two of the variables as the P-values are above 5% indicating the acceptance of the null hypothesis. The absence of causality indicates that all these variables under study are influenced by external influences such as economic growth rate and money supply.

Table 4. Stationarity tests.

Variable	Static	P-value
LR	-10.2345	0.0001
ROA	-2.72903	0.0032
Capital adequacy	-18.1333	0.000
Credit risk	-5.79232	0.000
Ln asset	-9.510	0.000
Management efficiency	-7.482	0.000
Asset quality	-10.198	0.000

Source: Authors Calculations

Table 5. FE model results.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	85.38100	39.98329	2.135417	0.0509
ASSET_QLTY	-0.450321	15.90448	-0.028314	0.9778
CAP_ADQCY	0.355661	0.215327	1.651721	0.1208
CREDT_RISK	20.55965	35.22006	0.583748	0.5687
LN_ASSET	-4.089398	2.046504	-1.998236	0.0655
MNGT_EFFNCY	0.013097	0.105862	0.123719	0.9033
LR	-3.619795	14.73124	-0.245722	0.8095
Effects specification				
Cross-section fixed (dummy variables)				
R-squared	0.939138	Mean dependent var		8.786250
Adjusted R-squared	0.900013	S.D. dependent var		5.939962

Source: Raw data.

CONCLUSION AND RECOMMENDATIONS

As evidenced by the FE model and the Granger Causality tests, internal factors are not significant in determining the return on assets (ROA) of listed financial firms in Zimbabwe. These results concur with the findings obtained by Niresh and Veinampy (2014). The way these firms cushion themselves against the external factors and chart their way out of the slippery external environment determines their performance measured by ROA.

These conclusions are against the background of products offered by Zimbabwean commercial banks which are inherently homogeneous. It is not only the products and services which are similar but the clients at large are free-riders in the sense that they do not carry out banks in-depth analysis when choosing the bank to relate.

Against this conclusion, the financial firms are therefore recommended to go beyond the CAMELS and credit risk ability in enhancing their ROA. These firms might improve on their management efficiency levels as they are still high across the board. On capital levels, the Central Bank might embark on a softer stance as the level of capital does not significantly affect the return on assets of the firms, though enhancing soundness and stability of the sector.

Conflict of Interests

The authors have not declared any conflict of interests.

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Appendix 1. FE model results.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	85.38100	39.98329	2.135417	0.0509
ASSET_QLTY	-0.450321	15.90448	-0.028314	0.9778
CAP_ADQCY	0.355661	0.215327	1.651721	0.1208
CREDT_RISK	20.55965	35.22006	0.583748	0.5687
LN_ASSET	-4.089398	2.046504	-1.998236	0.0655
MNGT_EFFNCY	0.013097	0.105862	0.123719	0.9033
LR	-3.619795	14.73124	-0.245722	0.8095

Effects specification			
Cross-section fixed (dummy variables)			
R-squared	0.939138	Mean dependent var	8.786250
Adjusted R-squared	0.900013	S.D. dependent var	5.939962
S.E. of regression	1.878262	Akaike info criterion	4.392908
Sum squared resid	49.39017	Schwarz criterion	4.883764
Log likelihood	-42.71490	Hannan-Quinn criter.	4.523132
F-statistic	24.00322	Durbin-Watson stat	0.831132
Prob(F-statistic)	0.000001	-	-

Appendix 2. Pairwise causality tests.

Pairwise Granger Causality Tests			
Date: 07/01/16 Time: 12:19			
Sample: 2010 2015			
Lags: 2			
Null Hypothesis	**Obs**	**F-Statistic**	**Prob.**
CAP_ADQCY does not Granger Cause ASSET_QLTY	16	0.53658	0.5993
ASSET_QLTY does not Granger Cause CAP_ADQCY	-	0.12613	0.8828
CREDT_RISK does not Granger Cause ASSET_QLTY	16	0.18809	0.8312
ASSET_QLTY does not Granger Cause CREDT_RISK	-	3.43111	0.0695
LN_ASSET does not Granger Cause ASSET_QLTY	16	1.73748	0.2209
ASSET_QLTY does not Granger Cause LN_ASSET	-	0.26069	0.7751
MNGT_EFFNCY does not Granger Cause ASSET_QLTY	16	0.23687	0.7930
ASSET_QLTY does not Granger Cause MNGT_EFFNCY	-	1.03613	0.3870
LR does not Granger Cause ASSET_QLTY	16	3.80510	0.0555
ASSET_QLTY does not Granger Cause LR	-	0.08747	0.9169
ROA does not Granger Cause ASSET_QLTY	16	1.88293	0.1980
ASSET_QLTY does not Granger Cause ROA	-	1.06790	0.3768
CREDT_RISK does not Granger Cause CAP_ADQCY	16	0.65305	0.5395
CAP_ADQCY does not Granger Cause CREDT_RISK	-	0.93831	0.4205
LN_ASSET does not Granger Cause CAP_ADQCY	16	1.06508	0.3777

Appendix 2. Contd.

CAP_ADQCY does not Granger Cause LN_ASSET	-	0.12816	0.8810
MNGT_EFFNCY does not Granger Cause CAP_ADQCY	16	0.51289	0.6124
CAP_ADQCY does not Granger Cause MNGT_EFFNCY	-	0.15156	0.8611
LR does not Granger Cause CAP_ADQCY	16	0.49953	0.6199
CAP_ADQCY does not Granger Cause LR	-	0.19706	0.8240
ROA does not Granger Cause CAP_ADQCY	16	3.41092	0.0704
CAP_ADQCY does not Granger Cause ROA	-	0.66197	0.5352
LN_ASSET does not Granger Cause CREDT_RISK	16	1.28651	0.3147
CREDT_RISK does not Granger Cause LN_ASSET	-	0.18144	0.8365
MNGT_EFFNCY does not Granger Cause CREDT_RISK	16	1.33895	0.3017
CREDT_RISK does not Granger Cause MNGT_EFFNCY	-	1.41351	0.2842
LR does not Granger Cause CREDT_RISK	16	0.77940	0.4824
CREDT_RISK does not Granger Cause LR	-	0.69041	0.5218
ROA does not Granger Cause CREDT_RISK	16	0.86762	0.4468
CREDT_RISK does not Granger Cause ROA	-	0.78805	0.4788
MNGT_EFFNCY does not Granger Cause LN_ASSET	16	1.73796	0.2209
LN_ASSET does not Granger Cause MNGT_EFFNCY	-	2.26248	0.1503
LR does not Granger Cause LN_ASSET	16	1.82105	0.2074
LN_ASSET does not Granger Cause LR	-	1.32880	0.3042
ROA does not Granger Cause LN_ASSET	16	0.21842	0.8072
LN_ASSET does not Granger Cause ROA	-	0.08694	0.9174
LR does not Granger Cause MNGT_EFFNCY	16	0.21884	0.8069
MNGT_EFFNCY does not Granger Cause LR	-	0.00408	0.9959
ROA does not Granger Cause MNGT_EFFNCY	16	0.92365	0.4258
MNGT_EFFNCY does not Granger Cause ROA	-	1.04103	0.3854
ROA does not Granger Cause LR	16	1.69731	0.2278
LR does not Granger Cause ROA	-	0.59544	0.5682