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CAPITAL ADEQUACY, EARNINGS AND NON PERFORMING LOANS OF COMMERCIAL BANKS LISTED AT THE NAIROBI SECURITIES EXCHANGE, KENYA

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Abstract: **The main role played by commercial banks is financial intermediation, that is, the channeling of funds from extra to deficits units to facilitate production activities. However, the greatest risk faced by bank is loan default, also known as non performing loans. The upsurge in non-performing loans among banks in Kenya has been a source of worry to all stakeholders. This is because they lead to problems on banks' assets as well as bank's balance sheet, and have a negative consequence due to underlying loan losses provision. The study sought to establish the effect of capital adequacy and earnings non-performing loans of commercial banks listed at the Nairobi Securities Exchange, Kenya. Capital Buffer Theory and Efficiency Structure Theory were used. Causal design of research was relied upon. Research population comprises of the 11 (eleven) banks listed on the Nairobi Securities Exchange, Kenya where a census approach was relied on. The period that was considered in the study is from 2012 to 2017. The study concluded that capital adequacy had insignificant effects on non performing loans of listed commercial banks in Kenya. The study concluded that earnings had insignificant effects on non performing loans of listed commercial banks in Kenya. The study further recommends that banks should diversify their investments. Other than the traditional activities of lending, banks can also explore other business lines so as to curb the consequence of over reliance on lending.**

Keywords: **Capital Adequacy, Earnings, Non-Performing Loans, Commercial Banks.**

1. INTRODUCTION

1.1 Background of the Study

Banking in Kenya and the financial services in general has been identified as a vital pillar towards Vision 2030 of bringing Kenya to a middle income status by offering a facilitating macro-economic steadiness for development (CBK, 2017). Since banks are such critical entities in an economy the stability and success as going concerns is given a lot of attention by various stakeholders including the national government through the central Bank of Kenya by enacting regulations as mandated.

None performing loans (NPLs) do not accrue interest any long and thus no installments are received from them for the reason that these loans stop making income for a bank. According to Edson, Michael, Manuere and Clifford (2012) NPLs are those kinds of loans whose due date is already beyond 90 days and for this reason, they are no longer considered for interest accruals. A loan is not performing if already it is defaulted or is near to being defaulted (Badar and Javid, 2013). When the NPL level is high it is an alarm bell for a bank on the potential failure and often misrepresents efficiency and cost structure (Cucinelli, 2015).

The banking sector includes CBK, as the authority that regulates; 43 institutions of banking, 8 offices that represent banks that are foreign, 13 MFI Banks, 3 CRBs, 17 providers of money transmittal and 77 forex bureaus. Among the 43 institutions, 40 were owned privately but 3 are majorly owned by Government; and out of the 43 banking institutions 15 were foreign controlled while the remaining 28 (twenty eight) are locally owned (Banking Sector Reports, 2016).

1.2 Statement of the Problem

The main function played by banks is financial intermediation, that is, the channeling of funds from surplus to deficits to promote production activities. However, the greatest risk faced by bank is loan default, also regarded as NPL (Cucinelli, 2015). The growing height of nonperforming loans among banks in Kenya has been a source of worry to all stakeholders. Kumar and Tripathi (2012) reveals that this is because they lead to problems on the side of asset of the bank's balance sheet, and also inverse consequence on the statement of income mainly because of losses provision on loans. In bad scenarios, huge NPLs levels increases the possibility of a systemic risk, a deposit alarm, limits the intermediation, and consequently, expansion and investment, which can further exacerbate when mixed with shocks externally and bad macroeconomic cycle (Tiwari, 2011).

According to the World bank report (2017), there has been on an increasing trend of Kenya's NPLs levels. The rising and continuous trends in NPLs which largely began in the year 2012 was documented at 4.59%. This represents an increase in comparison with that of 2011 of 4.43 percent. NPLs levels had be based on an increasing movement form the years 2012 up to 2015. It further significantly increased in 2016 to 11.66% (World Bank, 2017). This however depletes commercial banks liquidity and in the long run profitability of these banks. Thus, over the years, these have been great concerns to the various stakeholders in the financial sector of Kenya because NPLs serve as primary causes of failures in the banking sector and as well as banking crises. This study sought to examine the effect of capital adequacy and earnings on non-performing loans of commercial banks in Kenya.

1.3 Objectives of the Study

1.3.1 General Objective

To look at the effect of bank characteristics on non-performing loans of commercial banks listed at the Nairobi Securities Exchange, Kenya.

1.3.2 Specific Objectives

The specific objectives of the study are:

i) To determine the influence of capital adequacy on non-performing loans of commercial banks listed at the Nairobi Securities Exchange, Kenya.

ii) To examine the impact of earnings on non-performing loans of commercial banks listed at the Nairobi Securities Exchange, Kenya.

1.4 Research Hypotheses

The study sought to test the following hypotheses:

H_{01}: Capital adequacy has no significant effect on non-performing loans of commercial banks listed at the Nairobi Securities Exchange, Kenya.

H_{02}: Earnings have no significant consequence on non-performing loans of commercial banks listed at the Nairobi Securities Exchange, Kenya.

2. THEORETICAL REVIEW

2.1 Capital Buffer Theory

Capital Buffer Theory was propounded Calem and Rob (1999). According to this perspective, as bank goes towards the minimum requirements of capital, there is a tendency for them to avoid costs that can come with a violation of the established regulatory capital. A breach of the provisions stated in the regulations often leads to penalties consequently most banks have preference towards maintenance of capital levels that are higher than the regulatory levels the essence of which is to reduce the possibilities of coming below the limits (Calem and Rob, 1999). Banks which are sufficiently capitalized tend to have more investment in more risky portfolios with an expectancy of increased (higher) profits.

In examining the link between the adequacy of capital and none performing loans, this theory was pertinent as it gives light on the levels of capital that are fundamental in ensuring that the bank is shielded against the risk arising from the NPLs. The underlying association among capitals of banks and default rates is seemingly captured by Buffer theory of capital adequacy.

2.1.1 Efficiency Structure Theory

This concept was introduced by Demsetz in 1973. The perspective suggests that an enhanced scale of administrative efficiency leads to lower non performing loan level which translates to rise in profitability. This concept recognizes the positive relation with regard to industry performance and performance of a firm. Better profits are presumed to build up for the most efficient companies (Ayano, 2016). The efficiency structure perspective has two propositions: the X and scale efficiency hypotheses. The former is premised on the idea that banks that has superior management and cost control practices costs stand a better chance of improving profit. The latter stands on the idea that through a superior scale of operation, certain banks can lower its costs (Kimande, 2017).

Efficient management of banks by managers results in lower level of nonperforming loans. Efficiency of banks can be assessed through NPL of an organization. Therefore, the higher the operational efficiency of banks' the less their NPL level while the lower the operational efficiency, the more the degree of NPL. The preposition of this perspective reinforces the operational efficiency which was applied in this investigation.

2.2 Empirical Review

2.2.1 Capital Adequacy and Non Performing Loans

Klein (2013) carried out a study on NPLs for South Eastern, Eastern as well as Central covering 1998 through 2011. The study utilized panel modelling procedure where yearly data was used. Its outcome indicate reveals that capita adequacy of banks has a inverse and considerable influence on None performing loans' level. Importantly, CESEE was the focus of the study. In bridging the background gap, the present study concentrated on listed Kenyan banks.

Hassana, Ilyas and Rehman (2015) carried out a research on explicit bank and social variables that have a consequence on Pakistan's none performing loans. A survey questionnaire method was employed. Using multiple regression, outcome disclose that sufficiency of capital has a inverse but noteworthy consequence on None Performing Loans. Nonetheless, the main focal point was the Pakistani banks. The in progress study is going to be concentrated on listed Kenyan banks. Similarly, it was reliant on multiple regression model and diagnostics tests weren't undertaken prior to inferential examination. In solving this gap, the present study utilized panel regression where the assumptions were before inferential analysis.

An examination by Hue (2015) on the factors predicting the degree of NPL for Vietnam commercial banks. It examined the years from 2009 to 2012. Multiple regression analysis was used in data analysis where the result disclosed that capital sufficiency had a inverse and momentous outcome on none performing loans. This was accredited to the fact the when the banks' capital adequacy is high, banks become cautious in giving out loans. Notably, the attention was banks in Vietnam. The current exploration covered Kenyan banks that are listed.

2.2.2 Earnings and Non Performing Loans

Dinitrios, Angelos and Vasilios(2011) studied on what determines NPL in Greece. The study contained panel data for 9 biggest Greek banks. The data obtained covered the years 2003 up to 2009. Diverse categories of loan (consumer, business and mortgages) were independently analyzed. Earnings was found to have significant consequence on NPL of banks. Nonetheless, the survey's attention was banks in Greece, whereas the study at hand covered the Kenyan listed banks.

Hassana *et al*. (2015) turned its attention on operational efficiency and Pakistan banks' NPL. It sought to find out the consequence of operational efficiency on NPL level of Pakistan banks. The study utilized a questionnaire for data collection and scrutiny done within the structure of multiple regression. Research findings indicate a strong influence of earnings on the level of npl of banks. The center of the examination was Pakistani banks unlike the present study whose concentration was listed Kenyan banks. Similarly, it used primary data unlike the current study which was reliant on secondary data.

Hue (2015) scrutinized on the core factors that influence the NPL for Vietnam's banks from 2009-2012. OLS for panel data was used when analyzing the link between the NPLs and some bank explicit factors. Results showed that banks' earnings significantly impact non performing Loans. However, it was based on Vietnam banks. The ongoing study concentrated on listed banks.

3. RESEARCH METHODOLOGY

3.1 Research Design

As pointed by Cooper & Schindler (2009), a design explains framework that would guide the assembling, measuring and data analyzing. It brings out a blue print that will be adopted so as to answer the questions in a research (Mugenda & Mugenda, 2013). For that reason, a causal research design was relied on. Causal researches seek to examine a cause-effect associations existing with variables (Cooper and Schindler, 2009).

3.2 Target Population

It explains the entire elements of attention in a research (Cooper & Schindler, 2009). The population comprises 11 listed Kenyan banks from 2012-2017. Therefore, the unit of analysis comprise of 11 banks while the financial reports of these banks constitute the unit of examination.

3.3 Sampling Design

The core coverage is going to be listed Kenyan banks from 2012 – 2017 where a census was employed in conformity to Mugenda & Mugenda (2013) who proposes a census sampling for a small population. Therefore, there are 11 Kenyan banks listed.

3.4 Data Collection

The investigation depended of data from secondary sources, and where assembled from financials of Kenyan banks. This data was for a 6 year time spanning from, 2012 – 2017. A data collection guided was used which enhanced the process.

4. DATA ANALYSIS AND DISCUSSION

4.1 Descriptive Analysis

Descriptive analysis of the study variables was done. These provided statistics such as standard deviation, averages, maximum and minimum values and as well as number of observations.

Table 4.1: Descriptive Analysis Results

Variable	Obs	Mean	Std. Dev.	Min	Max
NPL	55	3.888	0.339	3.024	4.534
Capital Adequacy	55	0.132	0.024	0.032	0.168
Earnings	55	3.675	0.576	0.986	4.310

Source: Research Data (2020)

Table 4.1 depicts the outcome of the descriptive analysis of the study. The descriptive statistics indicate that all the variables used had a total number of observation of 55. Non performing loans had a mean of 3.888 and standard deviation of 0.339 which means the levels of NPLS had been on a fluctuating trend over the years. Capital adequacy reportedly had an average of 0.132 and standard deviation of 0.024. Mean and standard deviation of 5.285 and 0.0243 were reported for bank size respectively. Earnings of commercial banks had been generally fluctuating as revealed by a mean and standard deviation of 3.675 and 0.576 respectively. Minimum and maximum values of 0.986 and 4.310 were further reported for earnings of commercial banks listed at the NSE, Kenya.

4.2 Test for Fixed and Random Effect

The text for random or fixed effect model is performed in a study based on panel regression analysis so as to identify the most appropriate model for the regression analysis. A hausman test was undertaken establish the best model to be utilized in performing the panel regression analysis. The hausman test is based on a null hypothesis of the random effect model being the preferred model and the alternative hypothesis of the fixed effect model being the preferred model. the test is guided by a 5 (0.05) percent level of significance. Therefore, a p value lower than 0.05 implies that the null hypothesis is to be rejected meaning that the preferred model to be utilized is the fixed effect model. Conversely, a p value above 0.05 means that the random effect model is the best model and as such the null hypothesis is not rejected. The results from the hausman test show a p-value (0.0016). Based on the decision criteria, the null hypothesis was therefore rejected 0.05 significance and subsequently the fixed effect model was estimated in the study.

4.3 Regression Analysis

The study performed panel regression analysis so as to establish the statistical significance of the research variables. The regression analysis output was used in testing the null hypotheses of the study at a threshold of 0.05 significance level. The results of the analysis are contained in Table 4.2.

Table 4.2: Regression Analysis Results

Variable	**Coefficient**	**Standard Error**	**t**	**P> |z|**
Capital Adequacy	0.362	1.588	0.23	0.821
Earnings	-0.311	0.088	-3.52	0.001
Constant	-8.595	1.549	-5.55	0.000
R-sq = 0.3799, F (3, 40) = 29.74, Prob> F = 0.0000 ***significant at 5 percent***				

Source: Research Data (2020)

4.4 Capital Adequacy and Non Performing Loans

The study sought to examine the effect of capital adequacy on non performing loans of commercial banks listed at the NSE, Kenya. In response to this objective, a null hypothesis which stated that capital adequacy has no significant effect on non performing loans of commercial banks listed at the NSE, Kenya was formulated and tested at 0.05 level of significance. The criterion was to rejection of the null hypothesis when p<0.05 and otherwise when p>0.05, failure to reject the null hypothesis.

The results contained in Table 4.2 show a coefficient and p-value of 0.3620 and 0.821 for the effect of capital adequacy on non performing loans of commercial banks listed at the NSE, Kenya. Klein (2013) carried out a study on NPLs for South Eastern, Eastern as well as Central covering 1998 through 2011. The study utilized panel modelling procedure where yearly data was used. Its outcome indicate reveals that capita adequacy of banks has an insignificant effect on NPLs level.

Hassana, Ilyas and Rehman (2015) carried out a research on explicit bank and social variables that have a consequence on Pakistan's none performing loans. A survey questionnaire method was employed. Using multiple regression, outcome disclose that sufficiency of capital has a inverse but noteworthy consequence on None Performing Loans. An examination by Hue (2015) on the factors predicting the degree of NPL for Vietnam commercial banks. It examined the years from 2009 to 2012. Multiple regression analysis was used in data analysis where the result disclosed that capital sufficiency had inverse and momentous outcome on none performing loans. This was accredited to the fact the when the banks' capital adequacy is high, banks become cautious in giving out loans.

4.4.1 Earnings and Non Performing Loans

The study sought to evaluate the effect of earnings on non performing loans of commercial banks listed at the NSE, Kenya. In view of this objective, a null hypothesis stating that earnings has no significant effect on non performing loans of commercial banks listed at the NSE, Kenya was formulated and tested at 0.05 level of significance. A threshold of 0.05 was applied in the test for hypothesis. A p<0.05 and p>0.05 implies the rejection and failure to reject the null hypothesis respectively.

Table 4.2 provided the output of the regression analysis where the effect of earnings on non performing loans of commercial banks listed at the NSE, Kenya had a coefficient and p-value of -0.3113 and 0.001 respectively. The findings concur with empirical works Dinitrios, Angelos and Vasilios(2011) studied on what determines NPL in Greece. The study contained panel data for 9 biggest Greek banks. The data obtained covered the years 2003 up to 2009. Diverse categories of loan (consumer, business and mortgages) were independently analyzed. Earnings was found to have significant consequence on NPL of banks.

Hassana *et al*. (2015) turned its attention on operational efficiency and Pakistan banks' NPL. It sought to find out the consequence of operational efficiency on NPL level of Pakistan banks. The study utilized a questionnaire for data collection and scrutiny done within the structure of multiple regression. Research findings indicate a strong influence of earnings on the level of npl of banks. Hue (2015) scrutinized on the core factors that influence the NPL for Vietnam's banks from 2009-2012. OLS for panel data was used when analyzing the link between the NPLs and some bank explicit factors. Results showed that banks' earnings significantly impact non performing Loans.

5. CONCLUSION AND RECOMMENDATIONS

5.1 Conclusion

The respective findings of the study as regards the specific objectives form the conclusion of the research. The study concluded that capital adequacy had insignificant effects on non performing loans of listed commercial banks in Kenya. Increases in the capitals of banks therefore do not have strong influences on non performing loans of listed Kenyan commercial banks.

Bank size was found to have significant effects on non performing loans of listed commercial banks in Kenya. The study therefore concluded that the size of banks has strong predictive powers its loan default rates. Earnings of commercial banks was established to have strong predictive powers on their non performing loans. The study is of the conclusion that earnings of banks is a key determinant of non performing loans of listed commercial banks in Kenya.

5.2 Policy Recommendations

The study findings have implications for policy and practice. Bank size as proxied by the natural total assets log was found to be a major predictor of non performing loans of listed commercial banks in Kenya. Banks due to large sizes can be characterized by bureaucracies. The study puts the recommendation that banks should have in place measures that will scale down the long procedures in banks. Banks should put in place effective and efficient monitoring system in line with their growing assets.

The study documented that earnings of banks is a key decreasing the levels of non performing loans. The study therefore puts the recommendation that banks should diversify their investments. Other than the traditional activities of lending, banks can also explore other business lines so as to curb the consequence of over reliance on lending.

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