

Assessing the effect of liquidity on profitability of commercial banks in Kenya

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Abstract

The financial sector in Kenya is dominated by commercial banks which have reported significant growth and improved financial performance. Despite the growth, the sector still faces many challenges including stiff competition from within, MFIS, mortgage firms and SACCOs and competition over the last few years resulting from increased innovations in the market. In order to survive and remain competitive they need to be profitable since a profitable banking sector is better able to withstand negative shocks. This study therefore was motivated by the fact that commercial banks need to understand the internal factors which they can manipulate to their advantage to maximize profits. The study will aid commercial banks to maintain a certain minimum balance of cash to enable them maximize the returns. The study determined the effect of internal factors on profitability of commercial banks in Kenya particularly the banks liquidity. The study employed a descriptive research design incorporating panel data. All the 43 Commercial banks in Kenya formed the population and a census was done over a period of 5 years from 2009 to 2013 due to availability of data. This study used secondary data obtained from the annual published financial statements which were analyzed using descriptive and inferential statistics. Internal factor was Liquidity, while Profitability was measured using ROA ratios. The findings of the study show that all the variables Liquidity, has statistically significant and positive relationship with banks' profitability. This study recommends that banks should invest heavily in assets if substantial gains have to be realized, maintain adequate liquidity levels though in the form of short term marketable securities in order to realize profits and aggressively identify viable investment opportunities and link such opportunities to customer deposits.

Keywords: Liquidity, profitability, commercial banks, financial performance

1. INTRODUCTION

Profits are a necessity and a goal for many firms. Finance managers mostly direct their efforts to this goal in order to grow shareholders' worth and survive. The role of commercial banks has remained central in financing economic activities in the various segments of the markets (Munyambonera, 2010). In order to do so they need to remain profitable (Ongore and Kusa, 2013). Therefore profits are not only a result, but also a necessity for successful banking in a period of growing competition on financial markets. Profit is the essential prerequisite of a competitive banking institution and the cheapest source of funds. Bank profits provide an important source of equity especially if re-invested into the business. This should lead to safe banks, and as such high profits could promote financial stability (Olweny and Shipho, 2011).

The understanding of firm profitability was advanced by earlier models that predicted which firms will earn high rates of return and how those rates can be sustained in a world in which profits attract entry. The main theories originated in the field of industrial organization (IO). IO theories the Market Power (MP) and Efficiency Structure (ES) were applied on performance of banks (Athanasoglou et al, 2006). Theoretical analysis shows that MP theory assumes bank profitability is a function of external market factors and the ES hypothesis posits that banks earn high profits because they are more efficient than others (Olweny and Shipho, 2011). The structure-conduct-performance (SCP) under the MP dominated IO in 1970's until the early 1980's held that market structure (the number and size distribution of firms in an industry) determines market conduct (the way in which the firms in that industry interact), which in turn determines firm performance (profitability). These theories emphasize the structure of the market in which the firm operates, the firm's share of that market, the firm's risk class, and the resource scarcity (Slade, 2003).

In US studies indicate that competitive process reduces positions of abnormal profitability, albeit this is not immediate. There is also evidence that changes in regulation enacted during the 1990s affected both the level and persistence of bank profitability. The financial crisis of 2007-2010 appears to have resulted in an increase in the persistence of bank profitability (McMillan et al, 2010). US commercial banks in 2012 recorded their highest annual profits since the 2008 financial crisis even as they saw a slight decline in net income for the last quarter

(Hamilton, 2014). In Switzerland profitability of commercial banks is significantly affected by bank specific characteristics as well as macroeconomic ones (Dietrich and Wanzenried, 2009). As noted by Khrawish (2011) factors affecting profitability in Jordanian banks are categorized into internal and external factors and the bank size, total liabilities/ total assets, total equity/ total assets significantly and positively affect profitability. A similar relation between log of assets and profitability in Turkish banks exists (Macit, 2011).

During the last two decades, the banking sector in Africa and in the rest of the developing world has experienced major transformation in its operating environment. In a number of countries, financial sector reforms have been implemented. In these reforms, the role of commercial banks has remained central (Ongore and Kusa, 2013). The reforms in the banking environment in Ethiopia have brought about many structural changes in the banking sector of the country and have also encouraged private banks to enter and expand their operations in the industry (Lelissa, 2007). Despite these changes, currently, the banking industry in Ethiopia is characterized by operational inefficiency, little and insufficient competition and perhaps can be distinguished by its market concentration towards the big government owned commercial bank and having undiversified ownership structure. The existence of less efficiency and little & insufficient competition in the country's banking industry is a clear indicator of relatively poor performance of the sector compared to the developed world financial institutions (Abera, 2012)

Banks' performance in Nigeria as noted by Obamuyi, (2013) over the last decade remained unimpressive. The profit before tax (PBT) of the banks fluctuated, especially between 2002 and 2005, and has declined progressively since 2008. For instance, the profit before tax which was 80.8% in 2000 fell dramatically and recorded a loss of 13.95%. Although PBT peaked at 287.62% in 2007, it nose-dived to 49.14% in 2008 (Obamuyi, 2012); opportunities for banks in Nigeria to make profits are gradually reducing. The declining profits could have been caused by the global economic crises, the festering crises in the banking sector and the fact that some of the criteria usually employed to measure the performance of the banks have been compromised by the Central Bank of Nigeria. The study noted that, only banks with well conceptualized lending and credit administration policies and procedures can survive the emerging competition.

The role of commercial banks has remained central in financing economic activities in the various segments of the markets especially in Sub-Saharan Africa. Both external as well as domestic factors have contributed to growth in performance of SSA banks in the last two decades (Kiganda, 2014). (Munyambonera, 2010) indicated substantial gaps in service delivery to private agents in SSA banks constraints being high levels of credit risk to private agents, poor quality loans, limited and or inadequate capitalization, operational inefficiencies, higher incidences of non-performing loans, higher levels of liquidity risk; among others.

Profitability is driven by the ability of a bank in generating sufficient earnings or in lowering operational cost, implying being more efficient. It is measured by ratios (firm's returns on asset, ROA, return on equity, ROE, and net interest margin, NIM.) that summarize large quantities of financial data and to make qualitative judgment about the firm's profitability (Velnampy and Niresh, 2012). ROA is a ratio of Income to its total asset. It indicates the efficiency of the management of a company in generating net income from all the resources of the institution (Khrawish, 2011). Bank profitability is a function of internal and external factors. Internal factors include bank-specific; while external factors include both industry-specific and macroeconomic factors (Al-Tamimi, 2010). Internal factors are within the scope of the bank and influenced by the internal decisions of management and board. They differ from bank to bank. These include capital size, size of deposit liabilities, size and composition of credit portfolio, interest rate policy, labor productivity, and state of information technology, risk level, management quality, bank size, ownership and the like (Ongore and Kusa, 2013)

1.1.1 Banking industry in Kenya

The banking environment in Kenya has, for the past decade, undergone many regulatory and financial reforms (Olweny and Shipho, 2011). Banks dominate the financial sector in Kenya (Kiganda, 2014) and as such the process of financial intermediation in the country depends heavily on commercial banks (Kamau, 2009). Kenyan financial institutions are licensed and regulated pursuant to the provisions of the Banking Act and the regulations and prudential guidelines issued by the Central Bank of Kenya (CBK) as mandated under the Banking Act (Cap 488) as well as Basel III. These banks are affected by both the external and internal factors. Bank-specific factors have a statistically significant impact on their profitability (Olweny and Shipho, 2011). In a country where the financial sector is dominant any failure in the sector has an immense implication on the economic growth of the country due to the fact that any bankruptcy that could happen in the sector has a contagion effect that can lead to bank runs, crises and bring overall financial crisis and economic tribulations. (Ongore and Kusa, 2013). As at December 2012, Kenya had a total of 43 Commercial banks (CBK annual supervisory report, 2012). As part of

its function, CBK moved to gradually raise bank capital levels by 2012 and to tightly monitor the operations of banks so as to ensure that Kenyan banks are more efficient in their operations while at the same time being profitable. CBK annual report (2013) showed that the banking sector registered enhanced performance during the period ended December 2013. The sector recorded a 16.6 percent growth in pre-tax profits during the year. Total net assets and total deposits recorded growth rates of 16.0 percent and 13.3 percent respectively. Despite the growth in the Kenyan banking sector, the sector still faces many challenges including stiff competition from MFIS, mortgage firms and SACCOs and competition over the last few years resulting from increased innovations in the market, specifically from the emergence of M-Payments and E-Payments (Maina and Muturi, 2013), coupled with adherence to the CBK stringent regulations.

Commercial banks are quite important in an economy as intermediaries; they channel funds from depositors to investors continuously. They can do so, if they generate necessary income to cover their operational cost they incur in the due course, that is, for sustainable intermediation function, banks need to be profitable (Ongore and Kusa, 2013). To survive in this sector profits are inevitable. Little study has focused on how internal factors affect commercial banks' profitability in Kenya. Ongore and Kusa (2013) studied Determinants of Financial Performance of Commercial Banks in Kenya; Kiganda (2014) studied the Effect of Macroeconomic Factors on Commercial Banks Profitability in Kenya: Case of Equity Bank Limited. Although (Olweny and Shiphoo, 2011) studied the effects of banking specific factors on the profitability of commercial banks in Kenya, the variables used; Capital adequacy, Asset quality, liquidity, operational cost, efficiency and income diversification in the study were not exhaustive. Therefore this study aimed at determining the effect of internal factors on profitability of commercial banks in Kenya.

2.2 Literature Review

2.2.1. Market Power Theory

Industrial Organization (IO) theories; the Market Power (MP) and Efficiency Structure (ES) theories were applied in the early studies on performance of banks (Athanasoglou et al, 2006). There are two distinct approaches within the MP theory; the Structure-Conduct-Performance (SCP) and the Relative Market Power hypothesis (RMP). The structure-conduct-performance (SCP) paradigm that dominated IO until the early 1980s held that market structure (the number and size distribution of firms in an industry) determines market conduct (the way in which the firms in that industry interact), which in turn determines firm performance (profitability). Academics from that tradition claimed that market structure was principally influenced by technological factors such as economies of scale and scope, and that the existence of high profit levels in an industry was evidence that the firms in that industry possessed monopoly power (Slade, 2003). Researchers in the SCP tradition, which was principally an attempt to assess empirical regularities, often based their assessments on cross-sectional data for markets (usually Standard Industrial Classifications or SICs). Typically, they regressed average profit rates on a number of market-wide variables such as indices of horizontal concentration, measures of economies of scale and other barriers to entry, and R&D and advertising intensities. The relationship between market structure and firm profitability was generally found to be positive but not necessarily strong. That literature, which is vast, came under attack in the early 1980s on both theoretical and empirical fronts. Among other things, empiricists pointed out that all of the variables were potentially endogenous and that the models therefore produced correlations that could not be given a structural or causal interpretation (Slade, 2003). In addition, broad SICs were not really markets, either because they were defined too broadly and contained firms that operated in industries with very different structures, or because the firms that were assigned to each SIC had substantial operations in other SICs. Finally, the accounting data that were typically used to measure profitability were thought to be poor proxies for economic profits (Slade, 2003). Unlike the SCP, the RMP hypothesis posits that bank profitability is influenced by market share. It assumes that only large banks with differentiated products can influence prices and increase profits. They are able to exercise market power and earn non-competitive profits. Theoretical analysis shows that MP theory assumes bank profitability is a function of external market factors (Olweny and Shiphoo, 2011)

2.2.2 Efficiency Structure theory

ES assume that bank profitability is influenced by internal efficiencies. It posits that banks earn high profits because they are more efficient than others (Olweny and Shiphoo, 2011). There are also two distinct approaches within the ES; the X-efficiency and Scale-efficiency hypothesis. According to the X-efficiency approach, more efficient firms are more profitable because of their lower costs. Such firms tend to gain larger market shares, which may manifest in higher levels on market concentration, but without any causal relationship from concentration to profitability (Athanasoglou et al, 2006). The scale approach emphasizes economies of scale rather than differences in management or production technology. Larger firms can obtain lower unit cost and higher profits through economies of scale. This enables large firms to acquire market shares, which may manifest

in higher concentration and then profitability. ES and Portfolio theory largely assume that bank performance is influenced by internal efficiencies and managerial decisions (Olweny and Shipho, 2011)

2.2.3 Modigliani-Miller theorem

The balance sheet structure could also influence banks' profitability; in this context, the equity-to-asset ratio is an important balance sheet ratio that received much attention. (Omerren Van, 2011). For this ratio, theoretical explanations assume different signs of the relationship with profitability. According to the Modigliani-Miller theorem there exists no relationship between the capital structure (debt or equity financing) and the market value of a bank (Modigliani and Miller, 1958). In this context, there does not exist a relationship between the equity-to-asset ratio and funding costs or profitability. Nevertheless, as this chapter already mentioned the agency problem, information asymmetry and transaction costs distort Modigliani-Miller's perfect market. Thus, when the perfect market does not hold there could be a possible explanation for a negative relationship. Financing theory suggests that increasing risks, by increasing leverage and thus lowering the equity-to-asset ratio (increasing leverage), leads to a higher expected return as entities will only take on more risks when expected returns will increase; otherwise, increasing risks have no benefits. This theoretical explanation is known as the risk-return trade off. (Omerren Van, 2011)

Abera, (2012) studied Factors Affecting Profitability; An Empirical Study on Ethiopian Banking Industry. This study examined the bank-specific, industry-specific and macro-economic factors affecting bank profitability for a total of eight commercial banks in Ethiopia, covering the period of 2000-2011 using a mixed methods research approach by combining documentary analysis and in-depth interviews. Target population constituted all commercial banks registered by NBE and considering availability of 12 years data, eight banks were sampled for study. The study noted that despite the findings of the regression analysis that the impact of liquidity was negligible, the result of the interview revealed that the liquidity of banks was one of the major determinants of Ethiopian banks' profitability. But, the output of the regression analysis and the interview were in agreement in relation to the direction of the effect of liquidity as far as both of them proved the existence of negative or inverse relationship between liquidity and profitability of Ethiopian banks. The study concluded that the impact of Ethiopian banks' liquidity on their performance remains ambiguous and further research is required.

Sufian, (2011) examined the determinants of profitability of Korean banking sector, in which bank-specific and macroeconomic determinants were evaluated. By employing unbalanced bank level panel data, the period considered was 1992-2003. The empirical results revealed that liquidity level, significantly affects banks' profitability, similar results were noted for diversification, credit risk, business cycle, and industry concentration variables. These results concurred with Dang (2011) who concluded that adequate level of liquidity is positively related with bank profitability and contradicted a study by Ongore and Kusa (2013) which reported insignificant relationship between liquidity and bank profitability.

Lartey et al, (2013) sought to find out the relationship between the liquidity and the profitability of banks listed on the Ghana Stock Exchange. The study sought to describe the relationship between the liquidity and the profitability of banks listed on the Ghana Stock Exchange using a target population of 9 commercial banks listed on the Ghana Stock Exchange and a sample of 7 banks. Purposive sampling technique was used. In conclusion, both the liquidity and the profitability levels of the listed banks were decreasing within the period 2005-2010. There was a very weak positive relationship between the liquidity and the profitability of the listed banks. These findings support Munther et al., (2013) in the case of Jordanian banks. When banks hold adequate liquid assets, their profitability would improve. Adequate liquidity helps the bank minimize liquidity risk and financial crises. The bank can absorb any possible unforeseen financial position. However, if liquid assets are held excessively, profitability could diminish because they have no or little interest generating capacity. The opportunity cost of holding low return assets would eventually outweigh the benefit of any increase in the bank's liquidity resiliency as perceived by funding markets (Mashhad, 2012)

3.0 RESULTS AND DISCUSSION

A linear regression model of the form $y = a + bx$ was used to determine the effect of liquidity on the banks' profitability. Table 4.5 indicates the results;

Table 4.5 Coefficients of Liquidity

Model	Unstandardized coefficients		Standardized coefficients		
	B	Std Error	Beta	T	Sig
1.Constant	-6.620	1.109		-5.971	.000
Liquidity	.105	.012	.863	9.036	.000

The regression equation was $y = -6.62 + 0.105x$. This means that an increase in liquidity level by 1 shilling increases profitability by sh.0.105. The standardized beta value of 0.863 indicates that an increase in liquidity by 1% causes an increase in profitability by 86.3%

4.3.1 Testing Hypothesis

The calculated t value was 9.036 while the critical table value at 5% level of significance is 6.314. Therefore the null hypothesis that there is no significant effect of liquidity on profitability is rejected-values shows a value of 0.000 which is less than 0.05 significance level, indicating that liquidity level has a significant effect on the profitability levels of the bank.

F-value was obtained based on ANOVA to test goodness of fit of the regression model. Table 4.6 shows the results.

Table 4.6 Liquidity ANOVA

Model	Sum of squares	Df	Mean square	F	Sig
1.Regression	17.790	1	17.790	81.65	0.000
Residual	6.101	28	0.218		
Total	23.891	29			

The F-value of 81.65 is substantially a high value showing that the model is good and can hold. The p-value of 0.000 in the table 4.6 above is less than 0.05 significance level, thus the model is a valid model.

The r square value from table 4.7 below indicates that a change in liquidity level causes variation in profitability by 74.5% when all other factors are held constant.

Table 4.7 Model summary of Liquidity

Model	R	R square	Adjusted R square	Std Error of estimate
1	.863	.745	.738	.46678

The findings indicate that liquidity has a significant effect on profitability levels of the bank. This implies that firms with high liquidity levels have higher profit levels. This can be attributed to the bank's ability to settle short term liabilities and other operational expenses thus facilitating better service delivery to its clients.

The finding confirms the works of Sufian (2011) who examined the determinants of Korean banking sector where bank-specific and macroeconomic determinants were evaluated. The findings revealed that liquidity levels significantly affect the bank's profitability. The research finding in this work also concurred with Dang (2011) who concluded that adequate level of liquidity is positively related with bank profitability.

However the findings of Ongore and Kusa (2013) contradicted these findings by indicating that the relationship between liquidity and bank profitability was insignificant.

4.6 Multi-linear Regression Model

The researcher incorporated other factors affecting the profitability of a firm and run a multi-linear regression model for these variables including liquidity status of the bank. Therefore to analyze the effect of bank size, liquidity, deposit liability and banking risk on profitability of commercial banks a multi-linear regression model of the form

$Y = a + b_1x_1 + b_2x_2 + b_3x_3 + b_4x_4 + e_i$ was used. The results were as shown in table 4.14 below

Table 4.14 Multi linear Regression coefficients

Model	Unstandardized coefficients		Standardized coefficients		
	B	Std Error	Beta	T	sig
1 constant	-10.253	1.286		-7.972	.000
Bank size	.445	.102	.313	4.370	.000
Liquidity	.054	.011	.445	4.945	.000
Deposit Liability	1.127	.571	.128	4.974	.000
Banking risk	.129	1.911	.080	3.067	.000

The model was therefore $Y = -10.253 + 0.445X_1 + 0.054X_2 + 1.127X_3 + 0.129X_4$

The beta values indicate that 31.3% of the variation in commercial banks profitability can be explained by variation in bank size while 44.5% of the variation can be explained by change in liquidity. The variation in profitability can also be explained by the variation in Deposit Liability to an extent of 12.8% while 8% of the variation in commercial banks profitability can be explained by the change in banking risk. This indicate that liquidity has the greatest effect on profitability of commercial banks and this could be attributed to the fact that commercial banks require higher liquidity levels in order to satisfy the customer cash needs which are commonly on random demand.

The ANOVA table 4.15 below indicates that the F-value of the model was 143.828 which was significantly high indicating that the multi linear regression model is a good model. Equally the P- values showed a value of 0.000 which is less than 0.05significance level. This as well indicate that the model is good and can hold

Table 4.15 Multi linear Regression ANOVA

Model	Sum of squares	df	Mean square	F	Sig
1 Regression	22.896	4	5.724	143.828	.000
Residual	.995	25	.040		
Total	23.891	29			

The value of r square when all variables were operating at the same time was 95.8%.This demonstrates that 95.8% variation in profitability of commercial banks can be explained by the variations in bank size, liquidity, deposit liability and banking risk. Other factors that affect profitability would explain 4.2%of the profitability variation.

Table 4.16 Multi linear Regression Model summary

Model	R	R square	Adjusted R square	Std Error of the estimate
1	.979	.958	.952	.19949

4.0 SUMMARY, CONCLUSION AND RECOMMENDATIONS

The second objective sought to determine the effect of liquidity levels on profitability of commercial banks. The standardized beta value indicated that an increase in liquidity by 1%causes an increase in profitability by 86.3%.Also, other factors held constant 74.5% of the variation in profitability can be explained by change in banks liquidity levels. The findings showed that liquidity has a significant effect on the profitability levels of commercial banks.

The study noted that liquidity of banks was one of the major determinants of Kenyan banks profitability. This is the case because adequate liquidity helps the bank minimize liquidity risk and financial crises. The bank can absorb any possible unforeseen financial position. The effect on profitability is higher when the liquid assets are not held exclusively, because exclusive liquid assets have no or little interest generating capacity. Also the opportunity cost of holding low return assets would eventually outweigh the benefit of any increase in the banks liquidity resiliency as perceived by funding markets, Mashhad (2012).

Liquidity has a significant effect on profitability, however when liquid assets are held exclusively they generate little or no interest at all. The study recommends that banks should maintain adequate liquidity levels though in the form of short term marketable securities in order to realize profits for the banks.

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