

# The Distressing Effect of Financial Performance on Capital Adequacy of Commercial Banks in Kenya

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## Abstract

Capital adequacy is a ratio necessary when identifying financial distress risk level of financial institutions in Kenya specifically commercial banks in Kenya. Financial distress and capital adequacy have been discussed separately in details but not as satisfactorily this is because of its role to profitability and distress risk levels of commercial banks. This study sought to examine the distressing effect of financial performance on adequacy of capital for Kenyan commercial banks. Financial performance was represented by two variables; ROA and ROE. Thirty eight Kenyan commercial banks were used for analysis for a period of 11 years (2005-2015). Financial statements of commercial banks from CBK was used to extract secondary data for analysis. Results indicated that there are various signals of relationships between financial performance and capital adequacy in respect to financial distress risk level. A correlation and panel regression analysis were carried out mainly to measure the relationship between capital adequacy and financial performance, the outcome of the study indicated a negative relationship between financial performance and capital adequacy. This study clearly gives a mindful and sense of reference to the depositor, all banking institutions including the commercial banks and policy makers to maintain proper levels of capital.

**Keywords:** financial performance, capital adequacy ratio, commercial banks, financial distressing factor.

## 1. Introduction

Kariuki (2013), Kang and Kinyua (2016) argued that financial performance is used to track and review a firm's progress against its strategic plan and goals. According to Kariuki (2013), Kang and Kinyua (2016) financial performance as an independent variable can be used for comparisons of similar organisations in the same industry or sectors. Steven and Gray (2015) noted that financial performance is a strong indicator that influenced perception of satisfaction and value. Financial performance and measures of financial performance have been defined by various studies in the world. Based on accounting and strategic management literature review Fauzi and Idris (2013) defined performance as the matching of business environment, strategy, internal structure and control system and therefore performance is usually affected by the factors that define it. Kang and Kinyua (2016) further argued that various firms will use financial performance in order to evaluate policies and operations in monetary basis. Vernimmen (2005) argued financial performance to be a measure of how a firm is able to use its assets to generate revenue from its core business however this definition only considered revenue as the only factor on financial performance. Busch, Bauer and Orlitzky (2015) argued that financial performance is that extent to which firms realise their goal and objectives. Busch, Bauer and Orlitzky (2015) further argued that economic goals and social goals are related making financial performance inseparable with social goals.

According to Munyambonera (2013), There was extensive reforms that were developed with an intention to of improving financial services between 1980s and 1990s in sub-Saharan Africa regions. These reforms have still not improved financial performance in commercial banks, this means there is poor or low financial performance in this countries. Munyambonera (2013) also noted that Commercial bank performance has been poor characterized by low levels of private credit, high interest rate spreads, high levels of non-performing loans, poor asset quality and operational inefficiencies, among others. WB (2016) noted some indicators of improvement in financial institutions but suggested on more financial sector reforms.

Financial performance in banking industry has been of interest to academic research and to stakeholders in banking industry in Kenya because it has an important role on growth of an institution and on the country's economy. (Ongore & Kusa 2013; Gatuhi 2015). Financial performance is also important due to competitiveness in the world economy not only to stakeholders of a firm but also to firms within the same industry (Yalcin et al. 2012). According to Yalcin, Bayrakdaroglu and Kahraman (2012) financial performance measures are classified as either traditional or modern. Based on financial performance measure however traditional measures can also be referred to accounting measures of financial performance. Traditional measures include ROA,ROE,EPS and Price earnings ratio(P/E) while modern based financial performance measure include economic value added(EVA), market value added(MVA), cash flow return on investment (CFROI) and cash value added (CVA) (Yalcin et al. 2012). Karim and Alam (2013) suggested three indicators of financial performance namely, Internal based performance measured by Return on Assets, Market -based performance measured by Tobin's Q model (Price/Book ratio).

Wanyonyi and Olweny (2013) found a positive correlation between ROA and ROE as financial performance measures of insurance firms and corporate governance factors. While Sangmi (2010) identified capital adequacy, asset quality, management capability and earnings analysis as the CAMEL parameters for financial performance of banks. Sangmi (2010) concluded that CAMEL parameter ratios are key in making decisions on financial performance of banks since higher ratios that are beyond the minimum requirements indicates that the trend of financial performance of banks is good. Ongore and Kusa (2013) argued that the ultimate goal of banks is to make profits and further argued that ROA, ROE, net interest margin are major performance measures to measure profitability in banks. Marte et al. (2012) studied on financial performance in developing countries and asserted that ROA and ROE are financial performance measures that show significant relationship with corporate social responsibility. This study will adopt ROA and ROE as major financial performance measures for commercial banks in Kenya. According to San and Heng (2011) these measures (ROA and ROE) involve productivity, growth or even customer satisfaction and they indicate financial strength, weaknesses, opportunities and threats.

High levels of Capital adequacy is critical in banking industry since it acts as a security and gives confidence to the stakeholders. Yahaya, Mansor, and Okazaki (2016) argued that capital adequacy is a key factor for identifying the level of risk absorption in banking institutions. Yahaya, Mansor, and Okazaki (2016) further noted that there is a very close relationship between capital adequacy and financial performance of a given firm. Olalekan and Adeyinka (2013) suggested that inadequacy or adequacy of capital is an important factor in the life of banking institutions. According to Olalekan and Adeyinka (2013) capital adequacy is usually used to explain and expressed as a percentage ratio of core capital to its total assets of an organization and this ratio is mainly used to evaluate financial stability and financial strength of a firm. Olalekan and Adeyinka (2013) suggested that capital is usually used to absorb an unanticipated abnormal loss in cases where such losses cannot be absorbed by earnings in financial institutions. According to Büyükşalvarcı and Abdioğlu (2011) absorption of possible, expected future losses and financial distress is the main reason of maintain proper level of capital adequacy.

According to Olweny and Themba (2011), capital adequacy is the sufficiency of owners' equity to absorb shocks a financial institution may experience. CBK issued revised prudential guidelines on capital adequacy in 2013 CBK (2015). This entailed new capital requirement for banks, capital charge for market and operational risks and capital conservation buffer, the minimum regulatory capital adequacy requirement, measured by the ratio of core capital and total capital to total risk. Capital adequacy aims to measure capital sufficiency in relation to the Basel and CBK guidelines (ROK 2015; Nasieku 2014). There are two accounting ratios suggested by Nasieku (2014) that can be used in capital adequacy; leverage ratio and risk weighted assets ratio. On the other hand leverage ratio will be total capital over total assets and will be used to as a measure of regulatory capital while Risk weighted assets ratio will be core capital divided by total risk weighted assets and is used as a measure of risk based capital.

This study will adopt ROA and ROE as financial performance measures while on the hand use capital adequacy ratio and leverage ratio to measure the distressing effect of financial performance on capital adequacy of commercial banks in Kenya. According to Adeyemi (2012); Nasieku (2014); ROK (2015) and Sangmi (2010) Capital adequacy ratio is determined by dividing tier one and tier two capital by risk weighted assets, A higher percentage on the ratio would be desirable as banks are assumed to have sufficient buffer against risk while Leverage Ratio is determined by dividing total Capital by Total Assets, Leverage ratio will be used as the measure of regulatory capital, higher percentage on the ratio would be desirable as firms will be assumed to have sufficient buffer against risk (Muiruri, 2015; Nasieku, 2014; Sangmi, 2010). Here the study hypothesizes that:

Ho: Financial performance does not affect capital adequacy of commercial banks in Kenya.

### **1.1 Overview of Kenyan Financial System**

Banking industry in Kenya is mainly governed by the company's Act, the banking Act, the Central bank of Kenya Act and Kenya capital market authority regulations. The CBK and CMA are responsible for regulations, suspension, statutory management or receivership and liquidation of commercial banks in Kenya. However several and additional changes have been developed by CBK especially on regulation and suspension (CBK, 2015; CMA, 2012). Crawford (2011) argued that Commercial banks gives credit to investment banks in order to offer investment opportunities for risky investments especially for financial securities while commercial banks gives credit assistance using depositors money. Raza and Farhan (2011) noted many commercial banks are also providing major services of investment banking in recent past. According to Crawford (2011) and glass steagall act in the USA there is a separation between commercial and investment banks. Since commercial banks may cause loss of customer confidence incases where the commercial banks involves themselves in using depositors money to invest in risky securities, resulting to withdrawals of deposits by depositors which leads to a reduced liquidity of banks causing financial distress (Crawford 2011). Maretno and Mullineaux (2010) indicated that investment banks typically establish higher credit spreads and premiums decline when commercial banks join as syndicate co-arranger.

Kamau and Were (2013) noted that in financial sector; technological advancement and globalization have

led to improvements in the banking sector in Kenya over the last two decades. Kamau and Were (2013) further argued that superior performance in Kenyan banking sector is due to structure and collusive power and not efficiency. According to CBK (2015) that uses CAMEL rating system, annual supervisory report indicates that banking sector was on overall rated satisfactory in 2015 as compared to a strong rating which was achieved in 2014. The introduction of the Basel Accord requires bank to calculate CAR based on international standards. According to the CBK a CAR of 20% and above is considered satisfactory while international standards need to maintain a CAR of 8%. There are a total 38 out of 44 commercial banks in Kenya operating as at 31<sup>st</sup> November 2015, these banks usually maintain a supportive relationship with local enterprises and government organisations.

## **2. Literature Review**

### **2.1 Theoretical review**

#### **Theory of Economic Regulation**

This theory was established and developed by George J. Stigler in 1971 and further modified by Peltzman (1976). The researcher incorporated an easy to use model of regulation: Stigler started from two primary premises; the fundamental asset controlled by the state is the power to coerce. The researcher argued that any group can benefit if and only if it knows how power is used. Stigler (1971) mainly researched only on the demand for regulation (demand by producers and consumers), largely ignoring the supply-side calculus—that is, he ignores the regulator's motivations. Stigler (1971) did not explain details of the behavior of supply-side, but Stigler (1971) pointed out that legislatures want political support, campaign contributions, future employment, bribes, and so on. But by under-emphasizing the supply side, Stigler (1971) ended with an unrealistic conclusion that consumers are always loose. Peltzman's (1976) modification of Stigler's model corrects this problem, resulting in far more realistic predictions by giving equal attention to supply side factors that might motivate regulators to produce regulations that benefit consumers even though producers may better use lobbying strategies (Peltzman 1976).

The current study used the theory of economic regulation to gauge the performance of banking firms. The theory noted that the regulation of banks is necessary to maintain safety and soundness of the banking system, putting them in a position to meet its liabilities without difficulty as a result and avoid financial distress. This made it imperative for the regulatory authorities to compel greater solvency and liquidity on individual banks than making it optional. This theory captures liquidity asset deposit ratio (LAD) that is liquid assets (LA)/ bank deposit (BD) and depicts the liquidity position of the banks. The higher the ratio, the better the liquidity and solvency of the individual banks Peltzman's (1976). According to Peltzman's (1976), if the asset portfolio is deemed too risky or capital inadequate, the relevant supervisory agency will attempt to compel a change in the bank's balance sheet to avoid financial distress and a possible bankruptcy.

#### **The Financial Fragility Theory**

According to Diamond and Rajan (2001) recent events of financial disorder (international debt crisis, junk bond crisis, stock market crashes, bank failures) have caused renewed interest in the subject of financial fragility. Financial fragility signifies the vulnerability of the financial system to future outbreaks of financial disorder. This theory argues that banks willingly adopt a fragile structure as a commitment device since depositors would not normally trust banks with their deposits because they fear that when they want to withdraw their money, financial institutions try to avoid repaying at a lower rate. However, there may be a refusal to pay if the bank does not have enough liquid assets to cover all depositor claims. This will result to other depositors trying to withdraw as well, and effectively cut off all lending to the bank. Banks voluntarily submit themselves to the risk of a bank run so that depositors will trust them with their loans, since depositors know that the bank will not be able to get away with their money without prompting a run.

The theory of financial fragility argued that there should be a condition of financial institutions that raises capital in terms of deposits from investors to provide financing to an entrepreneur. The entrepreneur may withhold effort, which reduces the amount of bank financing attainable. According to this theory, the higher a bank's capital adequacy ratio, the less likely the bank will be under financial distress. This theory was supported by Abor (2005) whose argument was on the choice of proper capital structure mix for avoiding falling into financial distress.

### **2.2 Empirical review**

The distressing effect of Financial performance on capital adequacy has always been seen as a vital issue in commercial banks. According to Asikhia and Sokefun (2013), Capital adequacy is the percentage ratio of a financial institution's core capital to its assets and used as a measure of its financial strength and stability. Several studies have been done in the area of capital adequacy on performance of various firms, Ikpefan (2013) examined the impact of bank capital adequacy ratios, management and performance in Nigerian commercial bank between 1986 to 2006, the study captured performance indicators and employed cross sectional and time series of bank data from the central bank of Nigeria, the study concluded that shareholders fund/total assets

which measures capital adequacy of bank have negative impact on ROA. This study was carried out using data in Nigeria and in addition it did not link capital adequacy with financial distress in Kenyan banking industry and therefore the current study will try to bridge this gap. Büyükşalvarcı and Abdioğlu (2011) established that loan, return on equity and leverage have a negative effect on capital adequacy ratio while loan reserve and return on assets positively influence capital adequacy ratio, Büyükşalvarcı and Abdioğlu (2011) investigated the determinants of Turkish banks' capital adequacy ratio and its effects on financial positions of banks covered by the study, data in the study was obtained from banks' annual reports for the period 2006 to 2010 panel data was used to analyze the relationship between the variables.

Adeyemi (2012) studied on failure of banks in Nigeria resulting from capital inadequacy, lack of transparency and non-performing loans the aim of the study was to establish the main factors responsible for bank failure in Nigeria. The author found that this factors influenced failure of Nigerian banks. Adeyemi (2012) claimed that financial institutions are expected to maintain adequate capital in order to meet their financial obligations, operate profitably and contribute as a result a sound financial system. The study adopted a structured questionnaire and covered all banks in Nigeria. Adeyemi (2012) concluded that capital inadequacy, lack of transparency and huge non-performing loans were established as the main causes of bank's poor performance in Nigeria. The study indicated that capital adequacy is a factor of financial performance. However the study did not link capital adequacy and financial distress and further the study was based on data in Nigerian commercial bank.

Mathuva (2012) examined capital adequacy, cost income ratio and performance of commercial banks as a Kenyan scenario, the study was informed on provision of evidence that supports the central bank of Kenya's move to gradually raise bank capital level requirement and to also ensure proper and tight monitoring of banks operations, The study used mainly ROA and ROE as measures of bank profitability and consequently bank performance for the period between 1998 and 2007, the researcher concluded that bank profitability is positively related to core capital ratio. In Kenya the core capital and total capital to total risk weighted assets ratios as at December 2014 were 15.9 percent and 19.2 percent respectively and this was due to increase of capital levels by various financial institutions through retained earnings and additional new capital, financial institutions are therefore required to maintain a core capital to deposit ratio of not less than 8 percent (CBK, 2015). According to Mathuva (2012) an increase in capital will raise the expected earnings by reducing the expected costs of financial distress. Mathuva (2012) linked capital adequacy to financial distress but the study didn't determine the extent of capital adequacy as a financial distress factor to financial performance of commercial banks.

This study adopted capital adequacy ratio and leverage ratio to measure capital adequacy as a financial distress factor on financial performance of commercial banks. Capital adequacy ratio is determined by dividing tier one and tier two capital by risk weighted assets, A higher percentage on the ratio would be desirable as banks are assumed to have sufficient buffer against risk (Adeyemi, 2012; Nasieku, 2014; ROK, 2015; Sangmi, 2010) while Leverage Ratio is determined by dividing total Capital by Total Assets, Leverage ratio will be used as the measure of regulatory capital, higher percentage on the ratio would be desirable as firms will be assumed to have sufficient buffer against risk (Muiruri, 2015; Nasieku, 2014; Sangmi, 2010). Here the study hypothesized that:

Ho: Financial performance does not affect capital adequacy of commercial banks in Kenya.

### 3. Methodology

The purpose of this study was to examine the factors influencing Kenya's commercial bank's financial performance and its effect on capital adequacy. Secondary data were gathered from individual financial statements 38 out of the possible 43 commercial banks in Kenya from CBK. This study covered a 11 years period, beginning in 2005 to 2015. In order to analyse the relationship between a banks' financial performance, represented by return on assets (ROA), return on equity (ROE) and capital adequacy ratio (CAR) as dependent variable, panel data regression methodology was used. Other than that, the same methodology was applied to investigate the relationship between financial performance and CA. CA is calculated according to the formula and rules fixed by central bank of Kenya. Return on assets (ROA) by definition is a ratio of net income and total assets. It shows how profitable a firm is relative to its total assets. ROA convey the message of how efficient the firm is in generating earnings. Return on equity (ROE) indicates the ratio of net income and shareholder equity. The money invested by shareholders is projected to be used in wise investments that will generate high returns. Higher ROEs will affect the CAR of the company since the shareholders will contribute more capital to the company The deposit-to-asset ratio (DAR) is one that measures the ratio of deposits used to generate assets of the company. DAR seems to have a positive influence on the CAR of a company.

#### 3.1 Econometric Model

This study investigates the effects of commercial banks' financial performance on capital adequacy by using the panel regression model. Based on a review of the theoretical literature, the following panel regression model is formed:

$$CAR_{it} = \beta_0 + \beta IROA_{it} + \epsilon_{it}$$

In the previous equation,  $\beta_0$  is a constant and  $\beta$  is a coefficient of the variables while  $\epsilon_{it}$  is the residual error of the regression.

#### 4. Results and Discussion

Table 1 shows the results of numerous descriptive analyses calculated based on selected variables, specifically the means and standard deviation. Dependent variable is represent by capital adequacy (CA) while financial performance is independent variable.

##### Financial performance of commercial banks in Kenya

Financial performance was considered by the researcher as the Independent variable which the study sought to find out the level of its influence to capital adequacy as a distress factors. Financial performance was measured based on the indicators return on assets (roa).

##### Annual Mean Returns on Assets

Considering return on assets which was also used to measure the financial performance of the banks, the descriptive statistics results are shown in Table 4.21. The financial institutions seemed to have lower returns on assets as compared to the returns on equity as seen earlier. The mean returns on assets ranged between 0.0517 and 0.0604 which were the mean roa for the years 2012 and 2013. This shows a possibility that the financial institutions do not invest a lot in the assets or realise very little returns from investments in assets. The variability of the returns on assets were also very low with all standard deviations ranging between 0.0136 and 0.0245. The minimum possible return on asset realised by a firm in study across the 11 years was 0.000 in 2014 and the maximum possible roa realised by a firm was only 0.1093 which was in 2006.

**Table 4. 1: Annual Mean Returns on Assets**

Year	Obs	Mean	Std.	Min	Max
2005	38	0.0539	0.0214	0.0052	0.0988
2006	38	0.0551	0.0167	0.0221	0.1093
2007	38	0.0535	0.0136	0.0265	0.0795
2008	38	0.0550	0.0166	0.0196	0.0888
2009	38	0.0565	0.0171	0.0258	0.0993
2010	38	0.0538	0.0166	0.0274	0.0908
2011	38	0.0550	0.0161	0.0260	0.0983
2012	38	0.0517	0.0245	0.0014	0.1024
2013	38	0.0604	0.0161	0.0244	0.0995
2014	38	0.0541	0.0172	0.0000	0.0867
2015	38	0.0524	0.0183	0.0054	0.0864

##### Overall Descriptive Analysis for ROA

Considering the overall mean roa as shown in Table 4.23, commercial banks in Kenya had a mean return of 0.05469 for all the 11 years jointly. The overall standard deviation was found to be 0.018 which was a contribution of variability between and within panels. Both measures of dispersion for variations between and within panels were found to be low for roa with standard deviations of 0.013 and 0.012 respectively. Low standard deviations imply homogeneity of the banks in regards to the returns on assets realised. This implied that generally all banks had low roe with no banks expected to realise high roa in any of the years. In addition from the Table 4.23 the overall mean of ROE of 5.47 per cent and standard deviation 13 percent for between and 12 percent for within is an indication that banks are competing among themselves for making profit however their standard deviations are evident that their profit making capacity is divergent from each other.

Considering the overall financial performance of the firms which was measured by latent factor of the 2 indicators namely ROE and ROA, as shown in table 4.23 the overall mean financial performance as found to be 0.007 with slightly high variability as compared to the observed components roa and roe. The overall standard deviation of the latent financial performance was found to be 0.229 which was a contribution of a higher variation across panels than within panels. The standard deviation between panels was 0.177 while within the panels the standard deviation was found to be 0.147.

Table 4.2 shows return of equity (ROE) had an average of 0.03717 with overall standard deviations of 0.144. On the other hand Table 4.23 also shows that profitability as measured by return on assets (ROA) had an average of 0.05469 with overall standard deviations of 0.018. The minimum ROA within commercial banks was -0.123 indicating some commercial banks reported losses in some years in between 2005-2015. Evidently, ROE was more volatile compared to ROA. This might have been as a result of the effect of financial distress factors to ensure that there are considerable levels of equity in commercial banks. This results are consistent with the studies carried out by Muriithi (2016) who noted that a positive average mean of ROE is an indication that banks are competing among them for making profit however their differing standard deviations of between and within is an evident that their profit making capacity is volatile.

In addition Table 4.2 indicated that, an average ROE over the 11year period was 3.717E-01 with a minimum of 0.000, a maximum of 0.998 and a standard deviation of 0.144 shows that on average commercial banks a had appositive return on equity and most commercial banks are to the right of the distribution just like ROA. The mean ROA was 5.469E-02 with a standard deviation of 0.018 and minimum and maximum of 0.00 and 0.109 respectively. This shows that firms were generally profitable towards their investments. The fluctuation of returns in ROA were however marginally greater than ROE as shown by standard deviation. This results was in disagreement with Muchiri (2016) and Wamugo, Muathe and Makau (2014), Muchiri (2016) results for NSE companies indicated that fluctuations of ROE were marginally high than ROA.

**Table 4. 2: Overall Descriptive Analysis for Financial Performance**

		Mean	Std. Dev.	Min	Max	Observations
<b>Financial Performance</b>	overall	7.776E-03	0.229	-0.732	0.653	N=418
	between		0.177	-0.399	0.338	n=38
	within		0.147	-0.988	0.450	T=11

### Capital Adequacy Ratio

From Table 4.3 the results indicates that commercial banks had slightly higher capital adequacy ratios as compared to the minimum regulatory capital adequacy ratios in average over the eleven years. The capital adequacy result indicate that commercial banks use shareholders' funds to finance between 18% and 31% of the total assets while the remaining balance is financed by deposit liabilities generally higher than the stipulated core capital of not less than 8%. This results concur with Olweny and Mamba (2011) whose study on banking sector indicated that about 18% of the total assets of the sector were financed by shareholders' funds while the remaining 82% was financed by deposit liabilities. According to CBK (2015) minimum capital adequacy ratios which are measured by the ratio of core capital and total capital to total risk weighted Assets, are 0.105 and 0.145 respectively. However there seems to be a slight gradual decline of capital adequacy especially from 2012 and 2014 this might have been attributed to amendments which were effected in the banking Act and the prudential guidelines in 2013 that continued to take root in the years and institutions aligned their banking practices to the enhanced framework. Notably, institutions continued to build their capital adequacy frameworks through various means in order to meet the new capital adequacy requirements which were to become effective on 1st January 2015. From Table 4.3 the lowest mean is 18% while the highest is 31% between 2005 and 2015, this result slightly differ with Olweny and Mamba (2011) whose result found an average mean of 18% and 20.66% between 2002 and 2008.

In the revised prudential guidelines of 2013, institutions were required to maintain a capital conservation buffer of 2.5% above the capital adequacy ratios(CBK 2014). According to CBK (2015) the banking sector's capital adequacy decreased from 20% in 2014 to 18.8% in 2015 mainly due to higher increase in risk weighted assets as compared to increase in capital. This results differs with Nazir (2010) whose introspection of ten years revealed that the capital adequacy ratio of the commercial banks had an increasing trend year after year 10.24% in the year 2001 and 14.78% in the year 2010.

**Table 4. 3 Capital Adequacy Ratio**

Year	Obs	Mean	Std.	Min	Max
2005	38	0.2519	0.1837	0.0961	0.7910
2006	38	0.2454	0.1643	0.1147	0.7580
2007	38	0.2538	0.1617	0.1303	0.7775
2008	38	0.2575	0.1622	0.1095	0.7791
2009	38	0.2621	0.1955	-0.0502	0.9401
2010	38	0.3125	0.2833	0.0219	1.4714
2011	38	0.2467	0.1838	0.1093	1.1017
2012	38	0.2512	0.1505	0.0573	0.8281
2013	38	0.2318	0.1453	0.0749	0.8725
2014	38	0.1891	0.0781	0.0694	0.3853
2015	38	0.2615	0.4504	0.0777	2.7356

### Overall Descriptive Analysis for Capital Adequacy

Considering the low mean ratios over the years, the overall mean capital adequacy ratio was found to be 0.2512 with a relatively low standard deviation of 0.216. This implies homogeneity of capital adequacy with similarity over the years and across the firms. This is also depicted with relatively almost equal standard deviations within and between panels of 0.163 and 0.144 respectively. The standard deviation within is slightly higher than that between. As noted from Table 4.19 results revealed that some commercial banks in Kenya reported negative capital adequacy ratio (Min -0.050). This may be due to the fact that some commercial banks are considered small being in tier IV while others are considered large being at tier 1. As noted by Wangombe(2016), negative capital adequacy ratio indicates that some institutions are financing their operations through deposit liabilities.

According to (Nasieku 2014) a company operating with a negative capital ratio has an aggressive financing policy and may be highly profitable but inefficient.

The overall mean leverage ratio was found to be 0.1658 with a low standard deviation of 0.117. The low variation is also depicted by the range which is only 1.029 between the maximum and the minimum leverage ratio. The low variation in the leverage ratio is a component of low variations within the panels and between the panels. The variations within and between the panels are 0.089 and 0.076 respectively. Table 4.19 shows the overall descriptive statistics of the latent factor capital adequacy which was computed as a factor of both observed variables leverage ratio and capital adequacy ratio. This variable was found to have a low mean of 3.350E-10 and a relatively high standard deviation of 0.670. The variation of this unobserved latent variable is an equal component of both variations between panels and within panels. The standard deviation within and between panels were found to be 0.460 and 0.494. The variation between panels is slightly higher than the variation within panels.

The results in Table 4.4 also revealed that some commercial banks reported negative capital adequacy ratio (Min -1.176). This can be attributed to size of commercial banks and period some had been in existence since some commercial banks were initially micro-finance institutions that were upgraded to commercial banks. It can also be noted that commercial banks had the negative capital adequacy within as compared to between. Negative capital adequacy ratio also indicates that some commercial banks were issuing more risky loans and advances and some banks were financing their operations through customer deposits.

Negative capital adequacy means that such commercial banks are debt financed and have no capital buffer to cover up any financial distress shocks. Nasieku (2014) noted that those banks with a negative capital ratio have an aggressive financing policy and may be highly profitable but inefficient. This may be mainly because use of short-term sources of funds will be less costly as compared to lantern sources and as a result commercial banks will experience better performance in the short-run. These results contradicts with findings of previous literature either in developed or transition economies which documented a negative capital adequacy means on commercial banks (Maina & Mwasia 2014).

**Table 4. 4: Overall Descriptive for Capital Adequacy**

		Mean	Std. Dev.	Min	Max	Observations
Capital adequacy ratio	Overall	2.512E-01	0.216	-0.050	2.736	N=418
	between		0.144	0.131	0.748	n=38
	Within		0.163	-0.343	2.473	T=11
Capital Adequacy	overall	3.350E-10	0.670	-1.176	4.703	N=418
	between		0.494	-0.467	1.949	n=38
	within		0.460	-2.222	4.105	T=11

## 5. Conclusion and Future Research

The current research examined the link between financial performance of commercial banks in Kenya and adequacy of capital or lack of it. Specifically to identify the distressing effect of financial performance on capital adequacy. The study used secondary data from the financial statements of commercial banks in Kenya over Eleven years. There was a total number of 318 observations. Several variables were considered to represent financial performance and capital adequacy. A multiple linear regression analysis employed indicated that financial distress and capital adequacy are inversely related. Subsequent researches should consider more other variables that are likely to have a distressing effect on financial performance and capital adequacy. This current study will give assist researchers studying on financial distress in banking industry in Kenya and other African countries and also to ensure that there is proper understanding on the importance of adequate capital in banks as far as financial risk as well as distress is concerned.

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