EFFECT OF SELECTED BANK DELIVERY CHANNELS AND SUPPORT INFRASTRUCTURE ON PROFITABILITY OF COMMERCIAL BANKS IN KENYA

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DECLARATION

This research project is my original work and has not been submitted to any other institution of learning for the award of any Certificate, Diploma or Degree.

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This research work is dedicated to my dear family for their love and support.

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ABSTRACT

Commercial banking sector in Kenya is one of the most important facilitators of economic growth, driven by competition and government regulations which have led to innovations of various channels of bank service delivery; agency banking and mobile banking with the help of support infrastructure; credit reference bureaus and deposit protection as regulated by Central Bank of Kenya. Banks have got the capacity of reaching a higher number of unbanked customers to mobilize savings and thus make the banking sector more profitable. However, according to Bank Supervision Annual report 2014, five commercial banks in Kenya reported losses contrary to expectation; Credit bank Ltd, Consolidated bank of Kenya ltd, UBA Kenya ltd, Equitorial commercial bank ltd and Eco-bank Kenya ltd, while others such as Dubai bank Kenya, Imperial bank Kenya and Chase bank Kenya being taken under receivership thereby calling into the question of profitability of the Kenyan commercial banks. The main objective of this research therefore was to investigate whether; agency banking, mobile banking, credit referencing and deposit protection have any significant relationship on profitability of commercial banks operating in Kenya. Mechanism and magnitude of effects of such changes on the bank profitability have only been inferred from subjective evidence, but as far as the present study is concerned, it has not been subjected to empirical analysis to test a combination of bank delivery channels with support infrastructure. This research used longitudinal descriptive research design. The population comprised of 20 Commercial Banks licensed and registered under the Banking Act of Kenya, that have been in existence for the ten year study period 2006 to 2015 and with consistent financial reporting and format. A purposive criterion was used to select participating banks based on availability of data and consistency in the financial reporting, therefore providing accurate and representative findings. Secondary data was used from regulatory bodies such as Nairobi Securities Exchange Limited, Kenya Bankers Association and Central Bank of Kenya as they are considered to be of high validity and free from biasness. The researcher was limited to data availability and consistency through the ten year financial period of the study.Data was analyzed using inferential and descriptive statistics. Descriptive statistics included calculation of the mean, median, standard deviation, minimum and maximum. Inferential statistics consisted of correlation analysis and panel data regression analysis. The results and findings of this study indicated that, there was no enough evidence that the factors analysed affected return on equity; Agency Banking ($r = -0.0699$, $p = 0.4187$), ($\beta = 0.0551$, $SE = 0.0179$), Mobile Banking ($r = 0.1179$, $p = 0.1834$), ($\beta = 0.0347^{*}$, $SE = 0.0182$), Credit Referencing ($r = -0.02242^{***}$, $p = 0.0087$), ($\beta = -0.0239$, $SE = 0.0157$), and Deposit Protection ($r = -0.0228$, $p = 0.7796$), ($\beta = 0.254^{*}$, $SE = 0.153$),However, some of the individual components such as Non interest income, deposit insurance and capitalization associated with the factors showed that they significantly contributed to the changes in return on equity.The study also concluded, therefore, that there are varied time lags for each of the factor's effect to filter to income statement of the banks. The study recommended that banks operating in a fast changing business environment like in the Kenyan banking sector, innovation and first adopter strategies may help the banks sustain superior profitability amid tightening competition and focus on niche products as well. The government should also undertake back-testing for validity of support infrastructure due to changing business environment. The study therefore suggested a future study based on instrumented variables with time lags to complement this study.

Key Words*: Agency banking, Commercial Banks, Credit reference bureaus, Deposit protection, Delivery channels, Mobile banking, Profitability and Support infrastructure*

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AB	Agency Banking
ATM	Automated Teller Machine
BCBS	Basel Committee on Banking Supervision
CAK	Communication Authority of Kenya
CBK	Central Bank of Kenya
CGAP	Consultative Group to Assist the Poor
CIR	Cost Income Ratio
CMA	Capital Markets Authority
CRA	Credit Reference Agency
CRB	Credit Reference Bureau
D-D	Diamond-Dybvig
DIS	Deposit Insurance Schemes
DP	Deposit Protection
FE	Fixed Effect
FSB	Financial Stability Board
FX	Foreign
GDP	Gross Domestic Product
GSM	Global Systems for Mobile
LCR	Liquidity Coverage Ratio
MAX	Maximum
MB	Mobile banking
MFIs	Microfinance Institutions
MIC	Middle Income Country
MIN	Minimum
MPT	Modern Portfolio Theory
NASCOTI	National Commission on Science, Technology and Innovation
NPL	Non- Performing loans
NSE	Nairobi Securities Exchange
NSFR	Net Stable Funding Ratio
OLS	Ordinary Least squares

RE	Random Effect
ROA	Return on Assets
ROE	Return on Equity
SMEs	Small and Medium Enterprises
SMS	Short Message Services
SSA	Sub Saharan Africa
Std. Dev	Standard Deviation
U.S	United States
UAE	United Arab Emirates
USD	United States Dollars

CHAPTER ONE
INTRODUCTION

1.1 Background of the Study

Banks play an important role in resource allocation as they provide most of the credit facilities to enterprises and households thereby facilitating economic growth and investment (Chen, Danbolt, & Holland, 2014; Horvath, Seidler, & Weill, 2016). According toKhalilov and Gündebahar(2012), available evidence suggests that new bank delivery methods substantially reduce the cost of delivering core banking activities, even after the capital investment required is taken into account thereby making banks more competitive. According to fragility channel view, increased competition increases the fragility of banks by reducing bank profits, which normally act as a "buffer" against adverse shocks (Horvath, Seidler, & Weill, 2013). Given the unique position banks occupy in the national economy, it is accepted that poor profitability in the sector would result in a decline in the intermediation and reduced money transmission and liquidity services including credit supply (Heffernan, 2005; Cavelaars & Passenier, 2012).

Globally, multiple bank delivery channels have been emphasized as key in reducing costs and enhancing banks' profits, providing convenient services to customers and also easing of execution of transactions (Stoica, Mehdian, & Sargu, 2015). Among the economically advanced countries, Singh (2013) observes that, an average of 33% of adult population in North America and Europe use Mobile Banking (MB). Mobile banking as bank delivery channel dates back to the late 1990s when the German company pay box in collaboration with Deutsche Bank, launched the first service (Shaikh & Karjaluoto, 2015). Agent banking, on the other hand, involves banks contracting with nonbank retail agents as outlets for financial services (Hannig & Jansen, 2010).

According to Sarra (2011), the 2007-2009 financial crisis made it clear that, core financial market infrastructures need to be reinforced, not only to reduce risks in the financial system but also to ensure that critical infrastructure is not itself a source of systemic risk. It has been too expensive for most developing countries to develop the branch network required to profitably reach underserved population segments (Ehrbeck & Tarazi, 2011). Consequently, branchless banking has been changing the economics by providing financial services, leveraging the

existing, widespread retail outlets and technology to provide more financial services to more people at lower cost (Chiteli, 2013). According to Ivatury and Mas (2008), the term branchless banking incorporates various platforms used in distribution of financial services including card-based banking networks, mobile banking and agency banking. According to Singh (2013), an estimated 80% of adult population in India use their mobile phone for banking, 79% in China and two-thirds in the UAE.

In China, Tan and Floros(2012) indicated that the profitability of the banking sector falls below international standards largely due to the problem of undercapitalization, non-performing loans, and low non-interest income. In Latin America, Guillen, Rengifo and Ozsoz(2014) studied banks located in Argentina, Bolivia, Brazil, Costa Rica, Ecuador, El Salvador, Mexico, Nicaragua, Paraguay, Peru, Uruguay and Venezuela, finding that the banks generally had high profits but created higher risks to its clients and the whole economy due to widespread oligopolistic positions. Consequently, bank innovative delivery channels, reflecting a willingness to respond to customer needs, better alignment of business, enhancing organizational capacity and capability, management risk and building better customer relationships, (Central Bank of Kenya, 2009). Such delivery channels when paired with adequate support infrastructure would ensure increased stability and profitability of the depository institutions (Heffernan, 2005).

In Sub-Saharan Africa (SSA), Beck and Cull (2013) pointed out that the small size of many economies do not allow financial service providers to reap the benefits of scale economies. Further, dispersed or low-income populations in many African countries mean that financial service provision outside urban centers is not often cost effective (Mas & Siedek, 2008). Resulting from these challenges, banks have responded by increasing the range of financial services beyond bank branch using a number of bank delivery channels (Apergis, 2014), by relying on agency banking and mobile banking among other alternate delivery channels(Ivatury & Mas, 2008). Also, the banks have instituted automated credit scoring and rating tools to screen borrowers (De la Torre, Pería, &Schmukler, 2010) with increasing use of CRBs (Akinnuwesi, Uzoka, Adenibuyan, & Adeyinka, 2013), as well as deposit protection to help avert interruptions in bank liquidity and credit availability that would otherwise result from disruptive bank runs or bank failures (Ketcha, 2007).

Broadly, bank delivery channels comprise all the service distribution channels intended to create greater proximity to the bank customer and keep them satisfied as part of the process to gain and sustain competitive advantage (Stoica*et al.*, 2015). The major bank delivery channels consist of m-banking, internet banking, ATM banking, branch network, call Centre, and agency banking (Idun & Aboagye, 2014; Khalilov & Gündebahar, 2012). In Kenya, the latest additions to bank delivery channels comprise mobile banking and agency banking (Ivatury & Mas, 2008).

Mobile banking as a bank delivery channel uses mobile phones to operate financial and banking transactions. This represents key area of financial innovation in recent times (Gutierrez & Singh, 2013). According to Central Bank of Kenya (CBK) (2015), the legislation reforms allowing commercial banks to undertake agency banking was put in place in 2010, whereas the Kenya Banking Act of 2009 and National Payments Systems Act of 2011 brought mobile banking under the watch of the Central Bank of Kenya (Mwinyimvua, 2013). The focus of the two delivery channels is to enable unbanked customers assess financial services with no previous credit background (Laeven, Levine, & Michalopoulos, 2015).

Support infrastructure relates to the underlying foundation for the financial system including the institutional arrangements, information, technologies, rules and standards which enable financial intermediation (The World Bank, 2009). As Horvath *et al.*(2016)pointed out, 'increasingly, banking sector have become more fragile', calling to the question of how effective are the existing prudential measures in stemming bank crisis. Hence therefore, the focus on prudential regulation has been focused toprotect client's funds as a priority for any financial regulator, since loss of funds can lead to serious consequences to customers and public confidence in financial systems (Dias & McKee, 2010). Moreover, Maccaferri, Cariboni and Schoutens(2013) observe that, banks may fail for a number of reasons; these include credit risk, market risk and operational risks. For this reason, the Credit Reference Bureaus (CRBs) have been established to help banks deal with credit risk by providing credit information that can be used by banks to estimate credit worthiness of their customers (Ferretti, 2006). Consequently, credit referencing may affect bank's profits through various ways such as; bank solvency (Kessy, 2010); non-performing loans (Goldberg & Palladini, 2010; Waweru & Kalani, 2009); and loan portfolio

growth which may not be the only bank's largest asset but also the main source of revenue (Kessy, 2010).

As Dias and McKee (2010) assert, banks are required to comply with regulations created to ensure systemic stability and depositor protection. Similarly, the banking crises have led to the recognition of some form of oversight and control necessary to protect national economies from financial instability and individual depositors against losses (Hüpkes, 2005). Credit referencing is important in mitigating the potential risks associated with new delivery channels and customers, many of whom lack credit background may discourage effective monitoring and early intervention leading to defaults due to weak lending terms and conditions (Hanson, Kashyap, & Stein, 2011).According to Shaikh and Karjaluoto(2015), mobile banking provide a number of financial services including reaching the unbanked communities, reducing banks' operating costs, providing new growth opportunities, and enabling new innovations in financial services. Khalilov and Gündebahar(2012). Branchless banking involving agency banking and mobile banking have become key areas of delivery channels among banks to contact their customers at lower cost of delivery (Ivatury & Mas, 2008); increase service offerings as well as cross-selling of bank products (Stoica *et al.*, 2015); mobilize savings (Ehrbeck & Tarazi, 2011); and facilitate extending credit remotely (Ivatury & Mas, 2008).

According to Hanson *et al.,* (2011), regulation of banks is often based on the logic that they can force banks to internalize losses, protect the bank deposits and mitigate on moral hazards. Such a measure also ensures that in case of adverse shocks in the banking sector as in the case of 2007-2009 global financial crisis, the bank's ability to cushion them also creates confidence in the bank to avoid bank runs (Maccaferri *et al.,* 2013). Hence, bank deposit protection can be carried out by regulating the funding mix, liquidity and capital requirements to reduce the probability of bank failure (Hanson *et al.,* 2011). Financial Stability Board (FSB) has recommended capital adequacy, liquidity requirements and stable funding sources as integral in increasing depositor confidence as well as reducing the likelihood of contagious bank runs during turbulent period (Sarra, 2012; Anginer, Demirguc-Kunt, & Zhu, 2014).

According to Central Bank of Kenya (2010), Kenya banks were able to provide mobile banking services and products such as viewing of statements of accounts, enquiries on status of cheques,

cheque book requests, notification of entries into accounts, transfer of funds between designated accounts and utility payment services from the year 2009.The number of banks that had signed up partnerships with mobile phone providers to facilitate money transfer services for their customers increased from thirteen in 2011 to seventeen in 2012, with Ksh. 1,545 billion being transacted in 2012 (Central Bank of Kenya, 2013). At the same time, commercial banks, financial institutions and mortgage finance companies were allowed to contract third parties (agents) to conduct banking business on their behalf. Consequently, between 2010 and 2014 the number of Kenyan banks offering some form of agent banking increased from 5 to 16; while the number of agents appointed by the institutions increased from 8,809 to 35,789(Central Bank of Kenya, 2015).

Furthermore, the Finance Act of 2008 enhanced minimum core capital requirements from Ksh. 250 million to Ksh. 1 billion by end of 2012 (Central Bank of Kenya, 2009). A survey by the CBK at the time also indicated that majority of the local institutions (76%) were ready to implement Basel II from 2010 which was in contrast to international banks of whom a majority of 72% indicated that they were already implementing Basel II recommendations for deposit protection. Simultaneously, The Banking (Credit Reference Bureau) Regulations, 2008 were gazetted by the Minister of Finance on 11th July 2008, becoming effective in February 2009. This led to the CBK issuing a circular in 2010 requiring all institutions licensed under the Banking Act to submit to licensed CRBs, customer information on all NPLs in their books as at 31st July 2010, and subsequently, institutions were required to submit information on a monthly basis. Deposit insurance as a percentage of customer deposits showed a gradual declining trend from 15% in 2006 to 9% in 2014 (Central Bank of Kenya, 2015). Nonetheless, bank profitability as measured by Return of Assets (ROA) has shown consistent gentle rise since 2006 from 2.8%, peaking stabilizing in 2012/2013 then gradually dropping to 4.46%

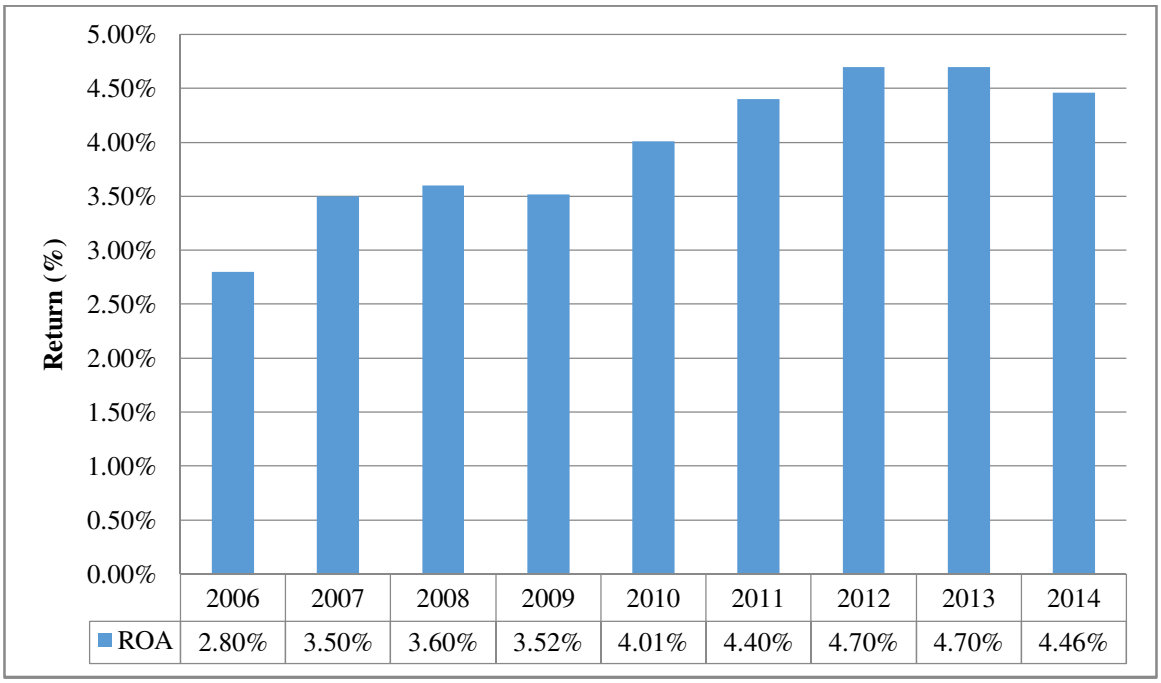

Figure 1.1.Bank Profitability Trend 2006-2014
Source: CBK: 2007, 2008, 2009,2010,2011,2012,2013,2014,2015

1.2 Statement of the Problem

Kenya aims to achieve Middle Income Country (MIC) status by the year 2030(Republic of Kenya, 2007).A more inclusive financial services system play an important role as part of the delivery strategy, mainly driven by competition with expectation of increased service delivery hence profitability(Chiteli, 2013). To achieve this, the banking sector in the recent times have innovated in their service delivery systems through adoption of agency banking and mobile banking to offer their financial products and services remotely to a wide range of unbanked customers (Bångens & Söderberg, 2008). Additionally, the banks have also been mandated to undertake measures such as credit referencing and deposit protection mechanisms that are intended to ensure efficient financial intermediation as well as avert bank runs (Central Bank of Kenya, 2015).However, according to Bank supervision Annual Report 2014,five commercial banks in Kenya reported losses contrary to expectation, these were; Credit bank Ltd which reported Ksh. 90 million, Consolidated Bank of Kenya Ltd Ksh. 274 millions, UBA Kenya Ltd Ksh. 331 million, Equitorial Commercial Bank Ltd Ksh. 461 million and Ecobank Kenya Ltd Ksh. 499 million while others such as Dubai Bank Kenya, Imperial Bank Kenya(Central Bank of Kenya, 2015) and Chase Bank Kenya being taken under receivership. The profitability trend

indicated in Figure 1.1 shows stagnated profitability during the financial years 2012 and 2013 at 4.7% (ROA) then declined in the year 2014 to 4.46%. This has called into the question of profitability of the Kenyan commercial banks. There is also a risk that such failures may become contagious and thus severely hamper the operations of the financial system. Even if the risks are not system wide, for a specific bank, failure to adjust swiftly and appropriately may be catastrophic, such as when a bank fails to offer profitable services and products and over time has to be shut(Schiantarelli, Stacchini, & Strahan, 2016). This study attempted to investigate whether selected bank delivery channels and support infrastructure affect profitability of commercial banks in Kenya.

1.3 Objectives of the Study

1.3.1 General objective

The main objective of the present study was to analyze the relationship between selected bank delivery channels and support infrastructure on profitability of Commercial Banks operating in Kenya.

1.3.2Specific objectives

This study sought to address the following objectives:

i. To establish the effects of agency banking on profitability of Commercial Banks operating in Kenya.
ii. To establish the effects of mobile banking on profitability of Commercial Banks operating in Kenya.
iii. To investigate the effects of Credit Reference Bureaus (CRBs) on profitability of Commercial Banks operating in Kenya.
iv. To assess the effects of deposit protection on profitability of Commercial Banks operating in Kenya.

1.4 Research Hypotheses

The hypotheses was tested at $\alpha = 0.05$. This was used to test whether to accept or reject the null hypothesis that selected bank delivery channels and support infrastructure contributes positively to profitability of commercial banks operating in Kenya. The hypothesis therefore assist the researcher to clearly have focus and direction to determine variables to be considered in the research study(Anderson, Dennis, & Williams, 2004)

H_{01}: Agency banking has no significant effect on profitability of commercial banks operating in Kenya.

H_{02}: Mobile banking has no significant effect on profitability of commercial banks operating in Kenya.

H_{03}: Credit information sharing through Credit Reference Bureaus (CRBs) has no significant effect on profitability of commercial banks operating in Kenya.

H_{04}: Deposit protection measures have no significant effect on profitability of commercial banks operating in Kenya.

1.5 Significance of the Study

The study was intended to benefit commercial banks shareholders, central bank of Kenya, bank customers, scholars and economist. Due to growing range of customer needs, banks have to respond in a manner convenient to their customers, the bank managers have to analyze, understand and champion on infrastructure modifications to foster profitability. Shareholders of the banks will be more concerned with the findings of the study because they have the residual interest in the bank's value as well as profitability. Hence, they stand to gain when the bank profitability is enhanced or when the risk undertaken by the bank and does not require the use of contributed capital. Another group of potential beneficiaries are the bank customers. Their interest in the bank is based on the ability of the bank to honor their withdrawal demands as at when they fall due or borrow from the bank or being offered any other product that the bank offers through its ongoing operations. However, when the bank's level of profitability is squeezed or stability is undermined some of those expected services and products, may not be extended or may take longer to get.

The bank customers will therefore sharpen their understanding on how certain delivery channels and support infrastructure items enable or hamper their continued value adding relationship with the bank. The policymakers, including the regulator, the Central Bank of Kenya, Capital Markets Authority, the National Assembly, among others also gain from the study's finding in that in structuring reforms, pays attention not only to what happens to an individual bank but also how such reforms affects the whole system. For instance, how higher capital requirements can be augmented with deposit protection in order to raise confidence in the sector and also lower the likelihood of moral hazard. Further, the study is of interest to the scholars as well as the general public. It has highlighted on how delivery channels and support infrastructure relate with various bank performance metrics such as costs of intermediation, profitability, liquidity and credit risks, among others.

1.6 Scope of the Study

The study was confined to all the commercial banks operating in Kenya throughout the years from 2006 to 2015 and whose statements of financial reporting and results of operations are posted by the CBK. The ten-year study period was purposively selected because it represented almost even number of years before and after introduction of the bank delivery channels and support infrastructure to be analyzed in the study. The empirical exercise analyzed both time and cross-sectional aspects of the banks in order to provide insights into how exogenous factors such as introduction of new delivery channels affect profits through various endogenous factors such as efficiency, interest rates, productivity, risk, liquidity, among others.

1.7 Limitations and Delimitations of the Study

The researcher purposely aimed at collecting secondary data from relevant regulatory bodies such as CBK and Kenya bankers association regarding commercial banks who had consistently reported their financial reports to relevant bodies where preliminary survey was found that twenty Commercial Banks had their financial reports published consistently without change in their presentation format and operated during the period 2006 to 2016 representing a ten year cross sectional analysis. However, the researcher had no much difficulties in obtaining the available data since Kabarak University had written a letter to the relevant bodies to allow the researcher to collect data.

1.8 Operational Definition of Terms

Agency banking:	Refers to an outlet contracted by a financial institution to transact banking services on its behalf (Chiteli, 2013).
Asset quality:	This is measured by the ratio of loans past due 90 days or more and non-accrual loans to total loans (Song & Thakor, 2007).
Bank delivery channels:	The delivery channels are methods for providing banking services directly to the customers. They are channels that expand the reach of services beyond the traditional bank branch channel (Khalilov & Gündebahar, 2012).
Bank:	Is an intermediary that purposely designs its liabilities in such a way that renders them suitable for making payments (Baele, De Bruyckere, De Jonghe, & Vennet, 2010).
Capitalization:	This is the contributed financial resources available for use by the bank measured by the difference of Tier 1 capital over risk weighted assets and statutory minimum(Allen, Carletti, & Marquez, 2015).
Commercial bank:	Is a profit-seeking business firm, dealing in money and credit (Waweru & Kalani, 2009).
Credit reference bureau:	This is where a company licensed to collect and collate credit information on individuals from different sources and provide that information upon the request of a credit provider in for a credit report (Ferretti, 2006).
Credit risk:	It is the potential that a bank borrower or counterparty fails to meet its obligations in accordance with agreed terms (Köhler, 2015).
Deposit Insurance:	This is where a bank provide a minimum buffer against losses on a bank's assets and therefore decrease its probability of failure measured as percentage of deposits insured (Rochet, 2007).

Deposit Protection: It is a regulator set minimum capital, liquidity, and stable funding requirements to ensure bank stability (Anginer*et al*., 2014).

Deposit: This refers to money placed in a bank account or an instance of placing money in a bank account (Allen *et al.,* 2015).

Efficiency: This represents the ability of management to control costs and use resources available to produce output (Stoica *et al*., 2015).

Endogenous factors: These are Variables that directly affect the bank profits (Athanasoglou, Brissimis, & Delis, 2005).

Exogenous factors: These are variables assumed to be determined by factors outside our models (Athanasoglou *et al.*, 2005).

Growth in deposit: This is calculated by the ratio of deposit this year to deposits last year (Donner and Tellez 2008),

Growth in non-interest income: This refers to the income derived primarily from fees calculated by non-interest income divided by non-interest income last year(De Young & Rice, 2003).

Interest income: This refers to the excess amount of interest earned on investments over the amount paid out for deposits referred to as net interest income (Georgievska, Kabashi, Trajkovska, Mitreska, & Vaskov, 2011).

Interest spread: This is the difference between the rates charged to borrowers with the rate paid to depositors (Were &Wambua 2014)

Labor productivity: It is the measures of amount of goods and services produced by bank employees over a given period calculated by dividing its total revenue by the number of employees(Fries & Taci, 2004).

Liquidity: This measures the ease with which an individual or company can meet their financial obligations with the liquid assets available to them calculated by adding cash and cash equivalents divided by deposits(Kowalik, 2013).

Mobile banking: This is a service provided by a bank or a financial institution that allows its clients to transact financial services using a

mobile device such as tablet or mobile phone (Bångens & Söderberg, 2008).

Non-performing loans: This refers to Principal loans and interest not serviced by the borrower calculated by the ratio of loan loss provisions to total loans(Richard, 2010).

Operating expense management: This is the use of cost-to-income ratio where costs include all non-interest operational expenses and profits defined as the sum of non-interest and net interest income (Mergaerts&Vennet 2015)

Profitability: This refers to the ability of business to earn profit generated from net revenues and after deducting expenses and can also be measured by return on equity calculated by the ratio of net profit to equity(Tan & Floros, 2012).

Solvency: This measures the ability of a company to meet its long-term financial obligations calculated by the ratio of debt to common equity (Hüpkes, 2005).

Stable funding: This refers to sources of funding for long term assets so as to avoid any over-reliance on short-term funding calculated by the ratio of deposits to total assets(Jung & Kim, 2015).

Support infrastructure: It is institutional arrangements, financial markets, and regulatory measure intended to build the capacity of financial institutions to improve service and stability. In this study support infrastructure comprise deposit protection regulatory requirements (The World Bank, 2009).

CHAPTER TWO
LITERATURE REVIEW

2.1 Introduction

This chapter examines the existing theoretical and empirical literature on bank delivery channels and support infrastructure on the relationship with bank profitability as well as presenting such relationships in form of conceptual framework.

2.2 Theoretical Review

Three theories are used to underpin the study; The Diamond-Dybvig Model of Financial Intermediation, Modern Portfolio and the Theory of Financial Fragility.

2.2.1 Diamond-Dybvig(D-D) Model

The Diamond-Dybvig Model is one of the models that explain how banks conduct financial intermediation. The model was proposed by Doug Diamond and Phil Dybvig in 1983 (Berger & Bouwman, 2009; Diamond & Dybvig, 1983). The model holds that one of the principal functions of banks in the economy is "maturity transformation", where banks use short-term demandable liabilities (deposits) to finance long-term assets (loans) (Ratnovski, 2013). It shows that liquidity creation is an essential role of banks and establishes a strong connection between liquidity creation and financial stability (Vazquez & Federico, 2015).

Consequently, liquidity creation exposes banks to risk since the more the bank creates more liquidity; it is likely to have more severe losses (Berger & Bouwman, 2009).According to Diamond and Rajan(2001) banks can be fragile because they must provide liquidity to depositors on demand because they hold illiquid loans. Further, demands by depositors can occur at undesirable times, that is, when loan payments are uncertain and when there are negative aggregate liquidity shocks(Cornett, McNutt, Strahan, & Tehranian, 2010).Such a fragile capital structure encourages the bank to commit to monitoring its borrowers, and hence allows it to extend loans (Berger & Bouwman, 2009).

To guard against bank failure, a rationale is established for deposit insurance to helps prevent bank runs (Allen *et al.,* 2015). Additionally, bank capital play a role in absorbing risk and

expanding banks' risk-bearing capacity, allowing banks to create more liquidity. (Berger & Bouwman, 2009). Capital requirements and other prudential instruments such as liquidity requirements, and cash reserve were supposed to ensure, at least with high probability, the solvency of individual banks and implicit principle that stable banks would automatically translate into a stable financial system (Angeloni & Faia, 2013).Hence, in the present study, the D-D Model is relevant in understanding how the support infrastructure are important in ensuring efficient, liquidity, stability, and financial performance of intermediation function of banks in the financial system.

2.2.2 Modern Portfolio Theory

The Modern Portfolio Theory (MPT) is a normative theory in that it hypothesizes on how investors should behave rather than how investors behave. It originated with Markowitz (1952)proposition that there is a trade-off between risk and return, correlations in returns of different assets, portfolio selection and investment optimization. In its simplest form, MPT provides a framework to construct and select portfolios based on the expected performance of the investments and the risk appetite of the investor. Thus, MPT uses the concept of diversification to guide decisions (Fabozzi, Gupta, & Markowitz, 2002). Applied to the banking system, MPT has indeed led to numerous innovations leading to functionally diversified banks having a comparative advantage in terms of long-term performance/risk profile compared to specialized competitors (Baele, De Jonghe, & Vennet, 2007).

In regard to the current study, the MPT has been used to underscore the fact that a heavy reliance of a bank on branch network as the main delivery channels increases exposure of the bank due to higher concentration of bank product or service to a limited range of customer segments. Consequently, multiple delivery channels, supported by adequate infrastructure can remarkably increase the bank's profitability and survival chances in an increasingly competitive banking environment (Khanna & Gupta, 2015). Further, various factors such as increased competition, technological changes, and increased instability in the financial system due to globalization, has provided drive for banks to increase their portion of income derived from non-intermediation activities. Additionally, different strategic choices by bank managers have led to different business models with different risk profiles (Baele *et al*., 2010). Consequently, it is imperative to

understand how bank delivery channels introduced in the Kenyan banking sector in the last decade have improved or weakened bank profitability.

2.2.3 Theory of Financial Fragility

The concept of financial fragility dates back to Fisher (1933) and Keynes (1936), who theorized that the debt financing of investment can have destabilizing effects. According to Berger and Bouwman(2009), banks are inherently fragile as a result of their liquidity creating function where they offer deposits that are more liquid than the assets that they hold. According to White (2013), the word fragility connotes property of being easily breakable, of failing under moderate stress. Song and Thakor(2007) noted that banking profitability and fragility are linked to the interaction between the asset and liability activities of the bank, and that fragility can be addressed by examining how banks fund themselves and where they invest. For instance, a bank stands the risk that a depositor run can easily break it, and a run can easily occur, triggered merely by self-justifying worries that others can run (White, 2013). To fix this, a form of deposit insurance is needed. However, a bank can provide a minimum buffer against losses on a bank's assets and therefore decrease its probability of failure (Rochet, 2007).

Bank can increase its capacity to withstand shocks not only by increasing its capital buffer but also by making operations leaner and profitable such as through use of range of alternative delivery channels, besides relying on deposit insurance to generate confidence in case of unexpected losses leading to bank run(Vazquez & Federico, 2015). In the present study, financial fragility of the banking system can be attributed to the externalities arising from risks embedded in banking transactions. Externalities in this case refer to the effects of the actions of one agent in the economy on others, which are not reflected through the price mechanism (Heffernan, 2005). Since such actions may undermine the stability of the financial system, two support infrastructure measures was examined in the study, that is, credit reference bureaus and deposit protection measures.

2.3 Empirical Literature

2.3.1 Agency Banking and Profitability of Commercial Banks

Increasingly, banks and other commercial financial service providers are finding new ways to make money delivering financial services to unbanked customers. Rather than using bank branches and their own field officers, they offer banking and payment services through postal and retail outlets, including grocery stores, pharmacies, fertilizer retailers, and gas stations, among others (World Bank, 2006). As a result, "branchless banking" offers more convenient, access and efficiency to bank clients in a manner that is significantly safer and cheaper than informal alternatives. The banking institutions, too, generate additional benefits from such arrangements, notable advantages being improved operating cost efficiency, income diversification, improved liquidity and profitability.

According to Mas (2009), the traditional approach banks take to minimizing costs may be directed at increasing economies of scale; that is, concentrating transactions at specific locations so that they can invest in the necessary fixed costs to handle a larger volume of transactions. Invariably, this involves expanding bank branch networks. Such a strategy would work well where customers are densely populated and have relatively high purchasing power. Goldberg and Palladini (2010) categorize general bank costs as comprising operating costs, cost of funds, and expected loan losses implying that the operating costs consisting of office space, supplies, employee remuneration and training, transportation, communications, equipment and building depreciation are most likely mitigated by agency banking.

Niţoi and Spulbar (2015) further explains that, the total cost of a bank is the sum of interest expenses and non-interest expenses. Therefore, becoming a measure of bank's operational cost of efficiency, Mergaerts and Vennet (2015)points that, the use of cost-to-income ratio where costs include all non-interest operational expenses and income is defined as the sum of non-interest and net interest income. This ratio measures the overheads or costs of Non-interest income the bank as a percentage of total operating income before provisions (Baele *et al.,* 2010).According to Niţoi and Spulbar(2015), in the emerging countries, the existence of a solid and efficient banking system is a crucial condition for a sustainable economic growth. According to Muthuva(2009), using Cost Income Ratio (CIR), found that it is negatively related to ROE and

ROA and that compared to banks in developed countries, Kenyan banks have relatively higher CIRs and should therefore strive to reduce their CIRs to below 50% to be more efficient, hence globally competitive. Thus efficiently managing the operating costs is even more important since as Fries and Taci(2004) acknowledges, there are various sources of cost efficiency among banks including those associated with structural and institutional reforms and with more efficient provision of public services by the state, such as the rule of law; those associated with overall economic development; and those associated with other dimensions of bank performance, such as the making of more productive loans, but that cannot be directly measured with available bank-level data.

Agency banking can be instrumental in reducing bank operating costs in that it can help in keeping fixed per-customer costs extremely small and for reducing unit transaction costs, which fully commoditize (and hence democratize) the banking product (Mas, 2009). According to Niţoi and Spulbar (2015), such banks which are more efficient should have a high profitability rate. This notion has also been confirmed by Veniard (2010), who found that agent banking systems are up to three times cheaper to operate than branches for two reasons; this is because through agent banking, banks are able to minimize fixed costs by leveraging on existing retail outlets and reducing the need for financial service providers to invest in their own infrastructure.

According to Mas (2009), financial markets are quite simply failing to meet the needs of a vast swath of society who are poor especially living in rural areas in a way that is affordable, convenient and safe. The problem is further compounded by the fact that often, customers are still expected to visit the branch office for routine transactions and services which can be accessed readily and cheaply using third party service providers such as the retail agents (Frei, Harker, & Hunter, 1998).By involving more service providers in distant places, the bank is able to attract more customers who are likely to use a wide range of bank services and products. For example, Fries and Taci (2005), consider that such customers may make deposits as well as borrow from the bank in which case they improve the bank efficiency by increasing the deposits ratio which measures the efficiency of the financial intermediation process. Thus, a very low ratio could indicate banks incapacity to transform deposits into loans. For example, large banks may operate with narrow interest margins if they incur lower credit screening and monitoring

costs. Such cost savings result primarily from the information advantage that large banks gain through their ongoing relationships with the institutional clients in the wholesale market (Perera, Skully, & Wickramanayake, 2010).According to Frei *et al.,* (1998), technology plays a key role in the performance of banks.

According to Demirgüç-Kunt and Huizinga (2010) finding, the more diverse activity mix the bank engages in, the more the risk the bank takes on with only small diversification benefits observed at very low levels. This presents the underlying business models in advanced economies, however, given the less advancement in wholesale banking in the developing, it is not clear how bank diversification beyond interest income generating affect bank profitability. Köhler (2013).Diversification of a bank's income source reduces the bank's dependence on interest income from loan repayments, hence the reduction in the bank credit risk from lending (Alhassan, Kyereboah-Coleman, & Andoh, 2014). Further, due to regulations, banks face limits on the risk exposures they are allowed to undertake on their lending activities implying that additional profitability is likely to be generated from non-interest activities. Thus agent banking can represent a bank's activity mix by the share of non-interest income in the form of fees from transactions carried out by agents augmenting the total operating income (Demirgüç-Kunt & Huizinga, 2009).

According to Alliance for Financial Inclusion (2012), Kenya had almost 9,000 bank agents corresponding to nearly four agents per every 10,000 adults in Kenya, clearly indicating the extent to which agency banking is used. The extent of risk diversification benefits of combining income-generating activities of various kinds depend on the co-movements of the risky incomes from these activities (Demirgüç-Kunt & Huizinga, 2009). Some argue that an increase in non-interest activities such as investment banking, provides banks with additional sources of revenue and can therefore provide a diversification in their overall income which should make them more stable, others argue that banks may also become less stable if they diversify into non-lending activities due to the higher volatility of non-interest income (Köhler, 2015).

Banks exist mainly to provide liquidity through financial intermediation activities (Berger & Bouwman, 2009). Thus the idea of agent banking, apart from ensuring financial inclusion for the underserved, can also be viewed from the perspective of the extent to which the banks go to

improve liquidity concerns and to stimulate the economy via increased bank liquidity creation. According to Delis and Karavias (2015), banks can also produce large losses if they take on too much risk or if structural and macroeconomic conditions change unexpectedly, thereby impairing their ability to produce profit as a result of transforming liabilities to assets.

According to Petitjean(2013), if a financial institution is not able to find short-term funding, meeting capital requirements do not prevent it from going bust. In particular, meeting short term liquidity requirements is a necessary condition to buy time and organize an orderly liquidation of the balance sheet. Increased saving mobilization from agent banking may increase bank liquidity (Nițoi & Spulbar, 2015). A higher ratio indicates a lower liquidity risk, and reflects banks´ ability to respond to loan demands. Also, banks with high liquidity can cope easily with possible unexpected deposit withdrawals or liquidity crises occurring on the interbank market (Lehman, 2010). Since banks transform liquid liabilities (deposits) into illiquid claims (loans), it would be important to understand how agent banking contributes to the basic intermediation role of banks on matching maturity between assets and liabilities, thereby avoiding making them exposed to bank runs or more generally to funding liquidity risk (Bonfim & Kim, 2014).

According to Kleinow and Nell (2015), liquidity, referring to the ratio of cash and tradable securities to total deposits, is probably advantageous at times of negative shocks in the financial system, when interbank markets easily dry out and liquidity becomes scarce. Consequently, liquidity is expected to decrease systemic risk. According to Bonfim and Kim (2014), banks with larger net interest margins and with better cost-efficiency ratios are generally less risky in their liquidity management. Yet, according to Jung and Kim (2015), the Basel Committee on Banking Supervision (BCBS) has strengthened its liquidity framework by developing a minimum standard for funding which is designed to reduce funding risk over a longer time horizon by requiring banks to fund their activities with sufficiently stable sources of funding in order to mitigate the risk of future funding stress. Arguably, transaction based income such as non-interest income from agency banking is likely to be more unstable than the interest income from lending operations. Therefore, as Lyman, Ivatury and Stachen(2006) argued, retail agents, especially those that are relatively small, unsophisticated, and remote, may not have enough cash to meet customers' requests for withdrawals and may lack experience in the more complex

liquidity management required for offering financial services. To manage liquidity effectively, banks pool liquidity risk and economize on liquid assets and thereby offer a higher return (Cavelaars & Passenier, 2012).

If fewer amounts of funds are tied up in liquid investments, we expect higher profitability (Sufian & Chong, 2008). Settling transactions quickly reduces credit risk among the banking counterparties and the cost of float (money tied up in unsettled transactions) (Mas, 2009). As Horvath *et al.,* (2016) pointedout, banks create liquidity by financing relatively illiquid assets with relatively liquid liabilities, that is, by using short-term liquid deposits to finance long-term illiquid lending. In doing so, they contribute to financing economic activity and facilitate transactions among economic agents. Thus a bank with effective risk management systems in place are far better prepared for the unexpected and this preparation can be the difference between growths, stability or bankruptcy (Goldberg & Palladini, 2010).

2.3.2 Mobile Banking and Profitability of Commercial Banks

Mobile banking leverage off the success of mobile phone uptake in developing countries by using the phone as a key channel to reach new and underserved customers (Bångens & Söderberg, 2008). In doing so, it can reduce administrative procedures, disseminate information cheaply and efficiently and trigger new business models that are more productive than existing models (Mačiulytė-Šniukienė & Gaile-Sarkane, 2014).According to Akhisar, Tunay and Tunay (2015) electronic based banking provides relatively low risk, high return and low cost advantages. As emphasized by Mas (2009), mobile enhances the banking infrastructure by helping offer commercially viable, safe and trusted and accessible to all banking services. Therefore, mobile banking can help in business process re-engineering which can allow service employees to concentrate their efforts on activities that had potentially higher added value such as customized transactions and the provision of financial advice coupled with sales effort Frei*et al.*, 1998).

According to Niţoi and Spulbar (2015), the price of labor can be calculated as personnel expenses divided by total assets, or alternatively, as personnel expenses divided by number of employees where bank data on number of employees are available. This price may be driven

down when as a result of mobile banking where most administrative and servicing processes are removed from the branch. As Mas (2009) found out in South Africa, mobile banking allowed banks to extend their transaction services using channels. It also provided an opportunity to deliver routine services through the mobile devices to existing and new customers, thereby freeing the financial specialists to concentrate on sales activities. Bank personnel may also find themselves with time available to pursue sales opportunities prospectively rather than simply reacting to walk-in traffic (Frei*et al.,* 1998).

Mobile banking is also poised to increase the bank's economies of scope, since as employees serve fewer customers, they are likely to conduct as many transactions per customer as possible: savings, credit disbursements and repayments, bill payment, collecting salaries and welfare payments, remittances, among others (Mas, 2009). According to Were and Wambua (2014), narrowing of interest spread is the difference between the rate charged to borrowers with the rate paid to depositors. Access to commercially priced credit can have a positive effect on the welfare of low-income households (Goldberg & Palladini, 2010). Credit can finance new equipment purchases or enable new business opportunities.

Although the role of deposits has varied over time, they remain an important source of funds for banks in all countries (Allen *et al*., 2015). Thus, interest spread, gauges the extent to which interest earning capacity of an entity exceeds or falls short of its interest cost obligations and therefore helps make a priority forecast of the positive influence of this variable on risk and returns (Mirzaei, Liu, & Moore, 2011). According to Horvath *et al.,* (2016) enhanced competition stimulates demand for loans by alleviating financing obstacles which ultimately may affect how the bank prices its loans as well as cost paid on deposits. According to Georgievska *et al.*(2011), a high price of loans and high interest rate spreads can act to limit access to capital and hence inhibiting economic growth.

According to Alhassan., *et al.*(2014), bank intermediation spread, measured as the ratio of net interest income to total income, is used to capture the impact of cost of bank lending on asset quality. A higher spread indicates higher lending rates and intermediation cost by banks, ceteris paribus. Thus, an increase in the spread increases the loan interest payments, which increase the

likelihood of loan defaults. In addition, riskier borrowers would be adversely selected since they could afford the high cost of borrowing. In response to 2007-2009 financial crisis, BCBS advocated changing banking regulation introducing Liquidity Coverage Ratio (LCR) as a way of increasing the competition for deposits which should increase deposit rates (Köhler, 2013).The real interest rate is calculated as the difference between the lending rate and the inflation rate, will also continue to affect the demand for loans in the economy (Niţoi & Spulbar, 2015). However, as Were and Wambua (2014), noted that most countries in Sub Saharan Africa (SSA) will still be confronted with high levels of interest rates, despite such structural adjustment reforms given that even liberalization of interest rates in several countries in the region and allowing market-determined interest rates, high interest rate spreads have persisted.

An increase in the volatility of the money market interest rate, drives up both deposit and lending rates (Were & Wambua, 2014). However, mobile phone diffusion continues to ease information flows, and the data collected on depositors used to analyze credit worthiness more efficiently, improve credit monitoring and facilitate deposit taking (Andrianaivo & Kpodar, 2012). As the Burundian case shows, financial liberalization can fail to correct the underlying structural deficiencies in the system where increase in competition do not translate into an increase in savings and lending nor does it reduce the interest rate margin (Nkurunziza, Ndikumana, & Nyamoya, 2011). According to Ang(2011), most developing countries often lack appropriate financial systems to efficiently pool the savings of diverse households to make them available to borrowers. Although the role of deposits has varied over time, it has remain an important source of funds for banks in all countries (Allen *et al.,* 2015).

According to Demirgüç-Kunt and Huizinga (2009), reliance on non-deposit funding is also more common in developed countries, whereas developing country banks rely significantly more on fee-generating activities. According to Bandiera, Caprio, Honohan and Schiantarelli(2000), financial liberalization can enhance the efficiency with which saved resources are channeled into productive use. However, the effect on the quantity of savings is theoretically ambiguous. Andrianaivo*et al*.(2012), also find that despite low deposits per head in African Countries, the average deposits relative to GDP per capita is high, suggesting that the propensity to save is high, but probably constrained by lack of access to financial services or suitable financial instruments.

But it is far from clear that, financial liberalization actually increases private savings (Bandiera*et al*., 2000). According to Donovan (2012), since poverty is more than just lack of money, it also involves lack of access to the instruments and means through which the poor could improve their lives. Exclusion from the formal financial system has increasingly been identified as one of the barriers to world without poverty. However, the use of only informal instruments means that the poor are limited in their ability to save, repay debts and manage risk responsibly.

According to Ozuru, Chikwe and Idika (2010), the launch of Global Systems for Mobile (GSM) services in 2001 in Nigeria, several banks in Nigeria have launched the mobile banking services that enable customers to carry out simple transactions based on Short Message Services (SMS) technology with customer's mobile phones serving as the terminals. Such transactions include account balance enquiries, funds transfers between customer's own accounts and to other account with the same bank, transaction tracking and third party payments, such as bill payments, cheque book request and balance confirmation and more importantly, making deposits in to the bank accounts. As a result of mobile enabled deposits, traditional commercial banks with focus on non-securitized savings and loan business, usually have high deposit ratios. In particular, banks with high deposit ratios are financed less via securities or by the capital market in general. Therefore, they are less connected to other banks or other institutional investors (Kleinow & Nell, 2015).

2.3.3 Credit Referencing and Profitability of Commercial banks

Credit Rating Bureau is an organization that collects, collates and processes customers' credit data from various credit sources in order to provide the details of customer credit information to appropriate organizations (Akinnuwesi *et al.,* 2013). The information provided helps to assess the borrowing and repaying habits and credit rating of such an individual in order to enable credit agencies make appropriate decisions on whether to grant customers credit. As a consequence, credit reference is likely to have implications on bank solvency, credit risk and asset quality. According to Shan, Tang and Yan (2016), capital plays a pivotal role in banking and bank regulation since regulatory requirements for capital adequacy have effects on financial stability and on the supply of credit to the economy.

Because of the recent financial turmoil, the Basel Committee on Banking Supervision has proposed Basel III new capital rules. Basel III refers to a conclusion that the financial crisis was rooted in the low solvency levels of banks' balance sheets (Horvath *et al*., 2016). As a consequence, these rules introduced tighter capital requirements. In particular, the objective is to improve the resiliency of the banking industry thereby, ensuring a strong and resilient banking system is the foundation for sustainable growth, as banks are at the center of the credit intermediation process between savers and investors (Horváth, Seidler, & Weill, 2012).On bank funding, information acquisition is equally important in determining the optimal mix of a bank's deposit and non-deposit funding (Demirgüç-Kunt & Huizinga, 2009). According to Bonfim and Kim (2013), Net Stable Funding Ratio (NSFR) is a longer-term structural ratio designed to address liquidity mismatches and to encourage an increased reliance on medium and long-term funding, thus increasing the average maturity of banks' liabilities. The NSFR is the ratio between the available and the required amount of stable funding, which should be at least100%. The two indicators are complementary and ensure that banks hold an adequate pool of liquid assets, while simultaneously adopting a reasonable and prudent maturity mismatch.

The subprime lending crisis revealed important weaknesses in Basel I and II (Bouwman, 2013). Both Accords seemed to provide inadequate incentives for banks to hold sufficient capital. Moreover, these accords failed to appropriately incorporate the risks posed by securitization, lacked liquidity standards and failed to incorporate systemic risks associated with the buildup of leverage in the financial system. Inadequate levels of capital may have led to imprudent asset choices by banks, which then raised solvency concerns that contributed to the drying up of liquidity for banks during the recent crisis. Consistent with the academic perspective, Basel III-released in December 2010, proposed higher capital requirements and raises the quality of capital to address the seeming deficiencies of the prior Basel Accords. To attract stable funding sources, the bank need to increase demand and term deposits, capital and liabilities with effective maturity of one year or more. As part of core funding Jung and Kim (2015) include retail (demand and term) deposits covered by deposit insurance (or core deposits), core capital (Tier 1 capital) and debt and bank debentures with long-term maturities. Since most retail deposits are covered by deposit insurance, retail depositors respond much less sensitively to market-wide liquidity shocks.

According to Basel III, it is imperative to constrain leverage in the banking sector and to introduce extra safeguards against model risk and measurement error, it supplements the risk-based capital requirements with a minimum leverage ratio (based on tier 1 capital to on- and off-balance sheet assets) of 3% by 2018 (Bouwman, 2013). Further evidence from the United States is slightly stronger and suggests that banks might have to restrain lending following a monetary policy tightening if they face liquidity constraints and low capital levels. As in Europe, the bank lending channel in the United States is also heavily influenced by the presence of internal capital markets (Gambacorta & Marques-Ibanez, 2011). Capital could become an important driver of banks' decisions, particularly in periods of financial stress in which capital targets imposed by banks' creditors or regulators become more stringent.

According to Petitjean (2013), bank profitability is also going to be under pressure because lower leverage reduces risks as well as profits. Further, opposing assumptions can be advanced regarding the relation between capital and liquidity creation (Horváth*et al.,* 2012).The traditional view of the impact of bank regulation is that, higher capital requirements have a positive effect on the banking sector, however, capital requirement may also increase risk-taking behavior and that stringent capital requirements are associated with fewer non-performing loans (Pasiouras, Tanna, & Zopounidis, 2007).Yet, properly capitalized banks are also more able to credibly engage in long-term relationships with their clients and partners; this is critical given the central importance of reputation for financial institutions. However, undercapitalized banks run the risk of insolvency, which has far-reaching effects on the credibility of the financial system as a whole (Nkurunziza*et al.,* 2011).

According to Nkurunziza *et al.* (2011), undercapitalization of the financial system in Burundi affected banking in two ways. First, it limited banks' lending capacity, particularly credit to large clients. Secondly, the low level of capital combined with bad lending practices resulted in insolvency of several financial institutions, leading to their failure. In this light, monetary authorities should carefully watch banks' practices particularly if the increases in profitability are due to increases in credit disbursements. If the new competition is pushing banks to issue more

credit, commercial banks will need to consider increasing provisions for bad loans beyond the legal minimum just in case these loans become non-performing.

Credit risk is the risk that one party to a financial transaction will not receive the money he or she is owed when it is due (Lyman *et al.,* 2006). Effective management of credit risk is critical component of comprehensive approach to risk management and essential to long-term success of any banking organization (Bank for International Settlement, 2000).The reason behind the presence of CRAs is to solve the problem of the informative asymmetry between lenders and borrowers about the creditworthiness of the latter (Elkhoury, 2008). Issuers with lower credit ratings pay higher interest rates embodying larger risk premiums than higher rated issuers.

According to Kessy (2010), credit risk is a most expensive risk in financial institutions and its effect is more significant as compared to other risk as it directly threaten the solvency of financial institutions. This is because a loan portfolio believed to be the largest asset and pre-dominate source of revenue and the greatest sources of risk to financial institution's safety and soundness and therefore the magnitude and level of loss caused by the credit risk can be severe to cause high level of loan losses and even bank failure. Consequently, credit reference may facilitate sustainability which empowers the financial institution through cost- effective provision of financial services. Waweru and Kalani (2009) argued that, controlling non-performing loans is very important for both the profitability of an individual bank and the economy's financial environment. Non-performing loan, defined as loans whose principal or interest remains unpaid 90 days or more after due date, can be treated as undesirable outputs or costs to a loaning bank, which decrease the bank's performance (Richard, 2010). Yet the risk of non-performing loans may also arise from the external economic environment becomes worse off such as economic depressions.

According to Idun and Aboagye (2014), an intermediary's capacity to reduce credit risk through innovation may earn it temporary rent by lowering rates and motivating borrowers with low risk of default to come and subscribe for loans. The innovators will continue to enjoy this rent until other banks adopt the improvement. When more banks adopt new monitoring system for an extended period of time, competition for loanable funds occur which raises the deposit rate. Thus

credit scoring provide a set of decision models and techniques that aid lenders in granting consumer credit by assessing the risk of lending to different consumers is important in enabling financial institutions to develop lending strategies to optimize profit (Bellotti & Crook, 2007).

The effect of loan growth on asset quality depends on whether the growth is influenced by supply shift, which arises out of banks' willingness to lend or demand forces from borrowers demand for credit (Alhassan *et al*., 2014). From a social-welfare perspective, information acquisition increases the efficiency of credit markets because it helps allocate funds to creditworthy borrowers. However, as Hauswald & Marquez (2014) found, as banks follow similar strategies, they invest too much in screening without effectively increasing their captive market in equilibrium. These results suggest that policies that constrain banks' ability to invest in information may in fact increase social welfare by reducing the resources spent on these activities.

According to Köhler (2015), banks reduce their lending standards and collateral requirements during booms due to improved borrows' income prospects, rising collateral values and a reduction in information asymmetries. Indeed, banks provide a unique range of services, such as assessing, monitoring and providing funding for productive entrepreneurs, which are critical contributors to innovation and productivity growth, and hence promote broader economic growth (Hammami & Lindahl, 2014).In contrast, it is also argued and empirically supported in the literature that, low ratios of total loans to total assets and relatively high non-interest incomes are an indicator of innovative business models, better diversification and, as a consequence, lower systemic risk exposures (Kleinow & Nell, 2015).

Köhler (2015) also found that, aggregate credit growth is an important determinant of bank risk. Bank managers make risky decisions about the transformation of liabilities to assets so as to produce profits. However, they can also produce large losses if they take on too much risk or if structural and macroeconomic conditions change unexpectedly (Delis & Karavias, 2015). However, financial intermediaries are important in production of information which is a broader role as part of bank's strategy to compete (Hauswald & Marquez, 2006). Therefore understanding the interaction between intermediaries' strategic use of information and their

function in promoting the efficient allocation of credit has therefore become important from both a practical and a policy perspective.

2.3.4 Deposit Protection and Profitability of Commercial Banks

The global financial crisis of 2007-2009 illustrated why it is important to prevent open runs on bank deposits (Demirgüç-Kunt, Kane, & Laeven, 2014). According to Sarra(2012), the crisis led to fiscal support package totaling 3 trillion USD globally, write downs amounting to more than 3 trillion USD, and in the G-7 countries alone, there was 2 trillion USD in lost GDP. All these led to increased fiscal deficits, job loses, and a lot of financial hardship among affected individuals. Thus the goals of deposit protection are to protect unsophisticated depositors, to smooth bank liquidity services, and prevent banking panics (Li & Wen-Yao, 2010).Karas, Pyle and Schoors(2013) supported this view noting that, the introduction of explicit deposit insurance has the potential of stabilizing economies by limiting bank runs.

On the contrary, however, deposit insurance may calm depositors into satisfaction by the belief that they are immune to the consequences of institutional failure, the disincentives that normally would prevent their banks from engaging in excessive risk-taking may weaken and decrease market discipline (Karas*et al.*, 2013). Hence, over-expanded deposit insurance, which shifts the risk of potential banking failure mostly to taxpayers, weakens market discipline and aggravate moral hazard (Li & Wen-Yao, 2010). Consequently, Schiantarelli*et al.*(2016) reports, additional mechanisms beside deposit insurance schemes are needed to protect depositors, including regulations on capital structure and liquidity exposure requirements. Hanson, Shleifer, Stein and Vishny(2015)observed that, deposit insurance is the source of stability that keeps depositors sleepy and prevents runs. According to Roussakis(2014), the forces of technology and globalization have been credited for breaking down geographical and functional barriers among banks, contributing to increased competition and increased bank risks thereby contributing to the need to protect the depositor and ensure the soundness of the financial system. To address these weaknesses many key reforms have been adopted at the international level over the recent years, most notably, the agreement reached by the Basel Committee on Banking Supervision on the new bank capital and liquidity framework raises the quality, quantity and international consistency of bank capital and liquidity (Fernandez-Bollo, 2013).

According to Demirgüç-Kunt, Kaneand Laeven(2014), the fact that it is too early to draw definitive conclusions about the adequacy of Deposit Insurance Schemes (DIS) during the recent global financial crisis, preliminary assessment is that, by and large, DIS fulfilled its foremost purpose of preventing open runs on bank deposits. Further, guaranteeing deposits through a system of government administered deposit insurance, removes the temptation to run on the bank and thereby precludes the need to ever use the deposit insurance (Hogan & Luther, 2014). That is the reason why deposit insurance is widely offered in a number of countries as part of a financial system safety net to promote stability and brings both benefits and costs that are likely to vary with economic conditions (Anginer *et al.,* 2014).

The main benefit introducing deposit insurance scheme, is to protect small and presumably uninformed depositors against bank failures (Lé, 2013). Hence, the primary function of a DIS to prevent systemic bank runs by being able to credibly claim that it can pay depositors in the event of bank failure (Demirgüç-Kunt, Kane, & Laeven, 2014). Consequently, deposit insurance protects the interests of unsophisticated depositors and helps prevent bank runs and improve social welfare (Anginer *et al.,* 2014).Countries can choose to fund potential DIS payouts either ex ante or ex post with ex ante funding involving collecting premiums on a scheduled basis, while ex post schemes collect funds from surviving institutions only when a covered bank fails and the available funds to cover depositors prove insufficient(Demirgüç-Kunt, Kane, & Laeven, 2014).

In particular, deposit insurance schemes with flat premium should result in reducing significantly bank capital buffer (Lé, 2013). For instance, during downturns banks may face tightened funding and limited investment opportunities, leaving little room for excessive risk taking in which case they rely on deposit insurance and capital buffer to enhance depositor confidence and prevent systemic bank runs, leading to lower risk and greater systemic stability (Anginer *et al*., 2014). As Anginer*et al.*(2014) point out, deposit insurance increase moral hazard and make financial systems more vulnerable to crises during good times, it can also enhance depositor confidence and reduce the likelihood of contagious bank runs during turbulent periods such as the recent global financial crisis (2007 – 2009).

Since these insurance schemes suffer from the same moral hazard issue as state guarantees by giving banks strong incentives to adopt risky behaviors thereafter (Lé, 2013), to curtail such risk-taking, policy makers impose regulatory requirements on the minimum level of capital that banks must hold (Schaeck & Cihák, 2007).Capital plays a pivotal role in banking and bank regulations. Regulatory requirements for capital adequacy are the subject of a current debate focused on their effects on financial stability and on the supply of credit to the economy (Shan *et al*., 2016). According to Allen *et al*. (2015), by adding that a common justification for capital regulation for banks is the reduction of bank moral hazard. This is because if banks' equity and shareholders expectation is that deposit guarantee scheme protects the depositors lead to lower incentive to assess the risk they bear, which makes it default for both and more likely to be costly (Fernandez-Bollo, 2013).Thus holding capital levels above their regulatory minimums is useful for banks seeking to attract business in a competitive banking industry to increase bank value, and to survive a banking crisis (Shan*et al*., 2016).If banks holds low level of capital, there is an incentive for them to take on excessive risk(Berger & Bouwman, 2009).

Moreover, during recessions when losses erode much of the banks' capital, the banks could only maintain their lending capacity by being able to quickly raise sufficient new capital, without which a credit crunch may follow (Repullo & Suarez, 2012). Thus, there is need to constrain the build-up leverage and maturity mismatches, and introduce capital buffers above the minimum requirements that can be drawn upon in bad times (Fernandez-Bollo, 2013). Similarly, Lé(2013) also reaffirms the prominent role of regulation is to provide correct incentives to banks. Accordingly, the primary reason why banks hold capital is to absorb risk, including the risk of liquidity crunches, protection against bank runs, and various other risks and credit risk (Berger &Bouwman, 2009). Given the widely accepted view that equity capital is more costly for banks than other forms of funds, the common results in many results of bank regulation is that, capital adequacy standards are binding as banks attempt to economize on the use of this costly input (Allen *et al.*, 2015). Basel III Accord therefore increases the minimum tier 1 risk-based capital ratio from 4% to 6%, and requires that the common equity component of tier 1 capital goes up from 2% to 4.5% to ensure that a bank holds sufficient truly loss-absorbing capital (Bouwman, 2013). Tier 1 capital is composed of core capital, such as equity capital seen as a more relevant type of capital (Shan *et al.,* 2016).

Higher capital requirements leads to lower leverage which that it takes up larger losses to wipe out the equity of a bank. Thus setting minimum capital requirements is therefore a way to provide a cushion to lessen the likelihood of insolvency of a bank due to losses (Barth, Nolle, & Prabha, 2014). As Shan *et al.*(2016) assert, regulatory requirements for capital adequacy often focus on their effects on financial stability and supply of credit to the economy. According to Basel Committee on Banking Supervision (BCBS) accord issued in 1988, a minimum capital requirement of 8 percent of risk-weighted assets, known as Basel I was recommended (Barth *et al.*, 2014). However, identifying the causal effect of regulatory capital on bank lending is a difficult empirical task because observed bank capital levels are typically above regulatory minimums, with unclear implications of bank capital management for banks' risk-taking behavior remain unclear (Shan *et al.*, 2016). Yet Karas*et al.,* (2013) found that better capitalized banks are more successful in attracting deposits than poorly capitalized banks which were less successful in attracting the deposits of households and firms. However, there are doubts that increasing regulatory capital requirements may aggravate the 'credit crunch' by substantially reducing bank lending to households and small and medium enterprises (SMEs) and raising bank lending rates of interest excessively (Mullineux, 2014).

According to House, Sablik and Walter (2016), liquidity risk is part of a core function performed by banks through maturity transformation. According to Kowalik, (2013), liquidity management therefore needs to be an everyday aspect of banking because banks finance long-term loans and other assets with short-term liabilities, such as deposits. Fragility from liquidity exposure has been addressed with mechanisms like deposit insurance, liquidity requirements (called for by the Basel III reform package) and lender of last resort facilities operated by central banks (Schiantarelli *et al*., 2016). Thus, a bank without enough liquid assets to meet a sudden increase in demand on its liability side, may be forced to sell assets quickly at reduced prices or suspend operations. This is because deposits can be withdrawn at any time, banks therefore must manage their liquidity to ensure that they can satisfy deposit withdrawals without being forced to liquidate long-term, illiquid loans (Kowalik, 2013).

However, the creation of liquidity expose banks to a variety of risks, including liquidity risk which can be mitigated to some extent by holding liquid assets like cash. Cash-asset reserves are

not sufficient if depositors withdraw simply because they are afraid that the bank can shut down due to a run by others on its deposits (Bouwman, 2013). And since some banks act as sources of funding for other banks or financial firms, strain at one institution could cause broader disruptions to the financial system (House *et al*., 2016). Given the potentially high costs of complete prevention through 100% liquid reserve requirements and the consequent curtailment of bank lending and associated economic growth, it seems likely that a non-zero risk of another financial crisis occurring is acceptable, but the public may want to reduce the likelihood of the next crisis being as damaging as the global financial crisis (Mullineux, 2014). However, Kowalik(2013) has suggested that. There is need for greater liquidity regulation to complement simultaneous changes in capital regulation.

Stable funding allows banks to avoid the fire-sale liquidation discount if the bad state occurs at time 1 (Hanson *et al*., 2015). According to Basel III Accord, the Net Stable Funding Ratio (NSFR) is another provision designed to limit banks' reliance on short-term wholesale funding. The NSFR requires banks to hold certain level of their funding which is relative to their asset profile with sources that are expected to remain stable for at least one year. The LCR mandates banks to hold liquid assets to cover a run on their liabilities, given that they still have some less-liquid assets, the NSFR requires institutions to hold stable liabilities that are unlikely to run (House *et al.,* 2016).

Although types of deposits vary in volatility and riskiness, demand deposits are very stable, while deposits made by institutional investors are less so, nevertheless, overall deposits are a more stable source of bank funding than other sources such as short-term funds borrowed from other financial institutions (Barth *et al*., 2014). Consequently, Schiantarelli *et al.*(2016), defined stable sources of funding as including deposits from residents and bank bonds held by households divided by the total assets. Hanson *et al.,* (2015) add that banks' more stable deposit funding structure has an advantage, in that it gives them the ability to hold investments to maturity, riding out transitory valuation shocks until prices revert to fundamental values.

According to Fernandez-Bollo(2013), there is no such thing as an optimal banking structure or model evidenced by the fact that no particular business model fared particularly well, or

particularly poorly, in the financial crisis. The writer attributes the crisis to excessive risk taking as well as reliance on short term funding that were not matched with adequate capital protection. Therefore liquidations by banks in times of crisis create fire-sale effects, in that they temporarily push asset prices below fundamental value (Hanson *et al*., 2015).

On the other hand, this stability comes at a cost. As a consequence, Dodd-Frank Act stipulates that the assessment base should be changed from total domestic deposits to average total assets minus tangible equity (that is, Tier 1 capital), as a way to shift the balance of the cost of deposit insurance away from small banks to large banks that rely more on non-deposit wholesale funding (Demirgüç-Kunt, Kane, & Laeven, 2014). Therefore the aim of the various deposit protection mechanisms are to keep the strengths of the financial system while improving the protection of depositors and the long term financing of the economy by isolating the speculative part of the banking activity (Fernandez-Bollo, 2013).

2.4 Research Gap

Various studies have been undertaken on profitability of commercial banks, but most of the researchers have focused on other independent variables such as; electronic based banking services (Akhisar*et al.,* 2015; Dhar, 2015), Deposits and bank capital structure (Allen*et al.*, 2015),Bank capital and liquidity creation (Horváth*et al.*, 2012),The use of traditional payments and electronic payment systems in Nigeria (Ozuru et al., 2010), Business models on bank profitability (Mergaerts & Vennet, 2015),Agent banking in Latin America (Alliance for Financial Inclusion, 2012),Mobile Banking: Financial services for the unbanked? (Bångens & Söderberg, 2008),andAgent banking operations as a competitive strategy of commercial banks in Kisumu City (Chiteli, 2013).The relationship between bank delivery channels and support infrastructure on profitability of commercial banks has remained opaque (Saksonova, 2013; De la Torre *et al.,* 2010). However, from the cited researchers in the literature review, it is evident that research in the area of bank delivery channels and support infrastructure has not been done comprehensively. The present study therefore attempted to address this gap.

2.5 Conceptual Framework

The study undertook to investigate the effects of selected delivery channels and support infrastructure instituted by banks in the past decade to increase bank's profitability. The present study used independent variables with four novel banking approaches instituted by banks as well as regulated by CBK to analyze their effects on bank profitability. The four factors therefore comprised agent banking, mobile banking, credit referencing and deposit protection.

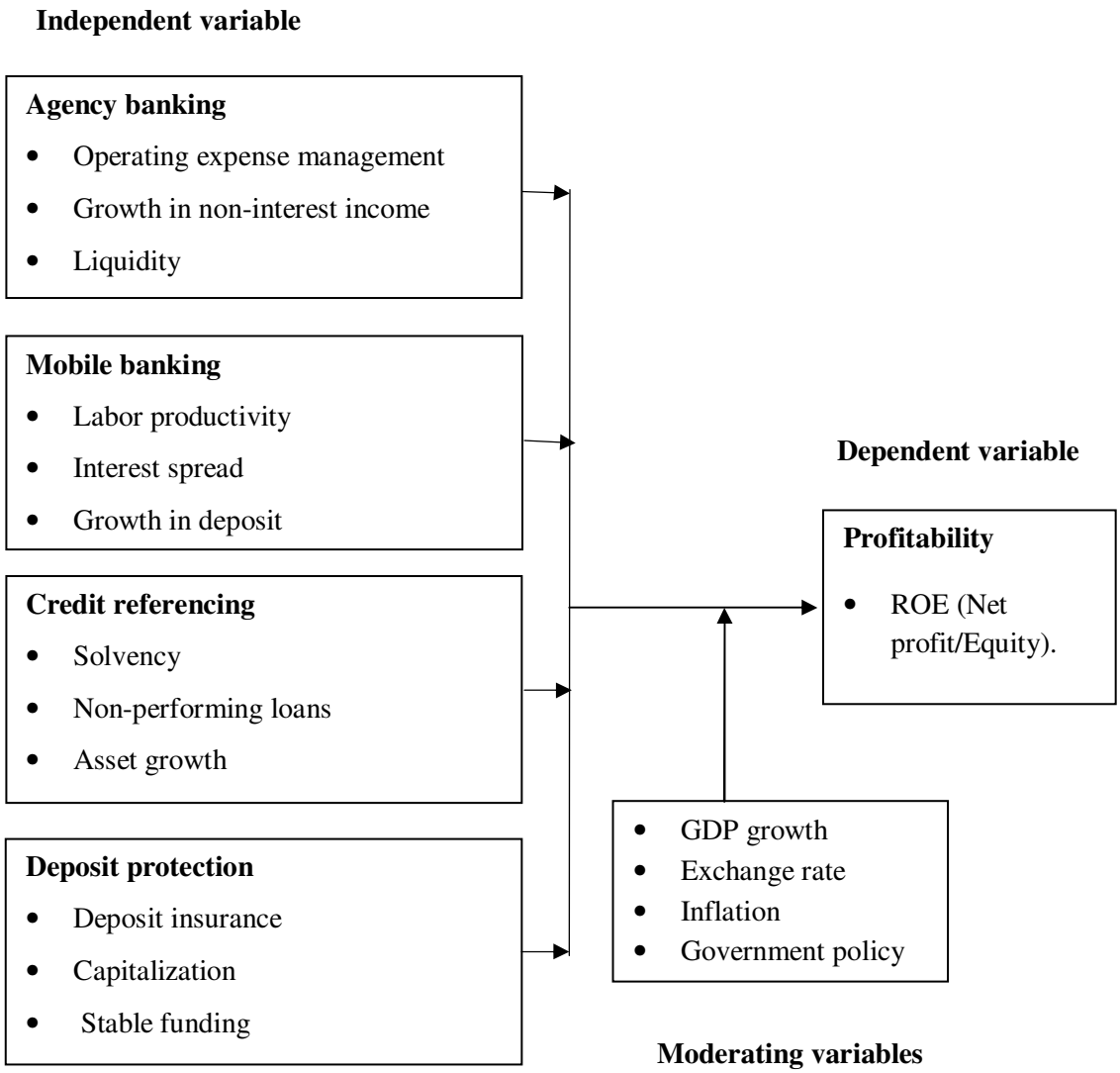

*Figure 2.1.*Conceptual Framework

Source: Author (2016)

CHAPTER THREE
RESEARCH METHODOLOGY

3.1 Introduction

This chapter outlined how the study was carried out including the research design, the target population, sampling procedure and sample size, data collection and instrumentation, data collection procedure, and data analysis.

3.2 Research Design

The study used the longitudinal research design. The longitudinal research design suited the study because it enabled multiple observations on each sampling unit with across time variations (Denscombe, 2007). This research design gives a clear outcome of the relationship between and within variables of the study (Saunders, Lewis, & Thornhill, 2009)

3.3 Study Area

The study area was commercial banks operating in Kenya. This enabled multiple case comparisons within country analysis, thereby providing suitable environment for controlling macro-level factors where it touched on bank's similarity.

3.4 Target Population

The study population for this research comprised of 20 commercial banks in Kenya that have been in existence in the last ten years from 2006 to 2015, licensed and registered under the Banking Act of Kenya (Waweru & Kalani, 2009) and their financial reports were reported consistently in the same format.

3.5 Sampling Technique

The Researcher purposely used the 20 commercial banks preliminary found to satisfy the requirements of financial inclusion. The researcher found that their reports wereconsistently reported in the same format throughout the ten year period. This enabled the use of all units in the study providing a reliable description of the relationship of the variables.

3.6 Data Collection Instruments and Procedures

Data was collected on distinctive bank characteristics as well as information concerning control variables included in other economic reports primarily using secondary data collection sheet/schedule (Kleinow & Nell, 2015).To enable acquisition of relevant data, authorization was sought from relevant regulatory bodies involved in collecting and collation of industry data such as from Nairobi Securities Exchange Limited, Kenya bankers association and Central Bank of Kenya. The researcher used STATA computer program to code and analyze data collected to address the research hypotheses. Kabarak University provided introduction letter in order to be authorized by National Commission on Science, Technology and Innovation (NACOSTI) before approaching the relevant bodies.

3.7 Validity and Reliability

Validity is the degree to which the data collected actually represents the phenomenon under study, while reliability of an instrument is the degree to which a research instrument yields consistent results or data after repeated trials (Mugenda & Mugenda, 2003). To ensure validity and reliability, the researcher relied on existing literature, published and audited reports from regulatory bodies such as Central Bank of Kenya for operationalization of variables to ensure that they are accurate and free from bias.

3.8 Data Analysis

Upon completion of data collection, data entry and data cleaning, the researcher processed data to fulfill the study objectives. Descriptive statistics such as the mean, median, and standard deviation was used to explore the distributional properties of the data as well as indicate individual bank characteristics. Correlation and regression analysis was used to assess the relationship between innovative bank delivery channels and support infrastructure on the bank's profitability. To achieve this, the study was guided by the general regression functional forms suggested by Cornaggia, Mao, Tian and Wolfe (2015):

Therefore, in order to assess the relationship among the variables, the researcher employed a multivariate regression model for panel data, having the following specifications:

Ordinary Least Squares (OLS) model:

$$Y_{it} = \beta_k X_{it} + \alpha + \varepsilon_{it} \quad \text{..... i}$$

Fixed effects model:

$$Y_{it} = \beta_k X_{it} + \alpha_i + \varepsilon_{it} \quad \text{.....ii}$$

.

Random effect model:

$$Y_{it} = \beta_k X_{it} + \alpha + \mu_i + \varepsilon_{it} \quad \text{.....iii}$$

Where:

Y_{it} Dependent variable (Profits) over time,

β_k Vector of coefficients,

X_{it} is vector of explanatory variables; Agency banking (AB), Mobile banking (MB), Credit Referencing Bureau (CRB) and Deposit protection (DP),

α_iUnknown intercept for each entity

μ_i Bank specific error, and

ε_{it}Random error

Subscripts *i*and *t* represent the unit identifier *i* and the time effect.

3.9 Ethical consideration

Although the researcher collected secondary data which were publicly published, the researcher maintained anonymity and adequate confidentiality of data used during the entire study. The researcher acknowledged the work of other authors where the researcher maintained a higher level of objectivity in discussion and analyses. The study was based oncollective results and findings which assisted the relevant stake holders in decision making purely meant for research purposes.(Bryman & Bell, 2007)

CHAPTER FOUR

DATA ANALYSIS, INTERPRETATION AND DISCUSSIONS

4.1 Introduction

This chapter presents results from analysis, findings and discussions

4.2 Descriptive Statistics

This section used provided the description of both the responses generated through the study instrument as well as the description of the data used in the analysis.

4.2.1 Response Rate

Preliminary survey found that, 20 Commercial Banks reported their financial reports consistently in the same format and data was available throughout the ten year period.Therefore the 20 Commercial Banks formed the targeted population for inclusion in the study forming 100% response rate which represented 77% of banking industry market share in Kenya (CBK, 2012), which was sufficient for good reliability(Mugenda & Mugenda, 2003).

4.2.2 Description of data

The researcher used descriptive statistics to describe observations of variables aimed at noting any unusual observation which may hinder the outcome of the findings and results. The data used in the study consisted of observations on 20 variables generated from the published financial reports of 20 Commercial banks operating in Kenya over a 10 year period from 2006 to 2015.

Table 4.1

Data Description

Variables	(1) N	(2) Mean	(3) Sd	(4) min	(5) Max
Return on equity	154	0.189	0.104	-0.179	0.523
Gdp	200	10.62	6.124	3.961	26.24
Foreign exchange	200	81.07	9.326	67.32	98.18
Inflation	200	5.263	2.117	0.232	8.402
Expenses	150	0.0594	0.0225	0.0137	0.113
Non-interest income	150	0.252	0.116	0.0400	0.860
Liquidity	147	0.422	0.165	0.0985	0.870
Labor productivity	146	6.302	4.979	1.738	46.79
Interest spread	144	0.129	0.0482	0.0311	0.399
Growth in deposits	178	1.215	0.171	0.879	1.930
Solvency	153	6.259	1.902	1.539	12.51
Non-performing loans	154	0.0182	0.0363	0.000365	0.373
Growth in assets	178	1.192	0.177	0.743	2.440
Deposit insurance	145	0.1139	0.08	0.1132	0.03
Capitalization	198	0.213	0.117	0.0749	0.705
Funding sources	198	5.727	1.966	1.005	10.57
Agency banking	137	0.987	0.451	0.399	2.658
Mobile banking	130	1.247	0.403	0.591	2.326
Credit referencing	138	1.252	0.459	0.452	2.364
Deposit protection	197	0.268	0.0536	0.152	0.462

The findings indicated that, the dependent variable Return on equity (ROE) which had a minimum of 17.9% and a maximum value of 52.3%. The average industry ROE was 18.9% with a standard deviation of 10.4%. There were four independent variables with measurements connected to them. The four independent variables comprised the Agency banking ($\bar{x}$ = 0.987); Mobile banking ($\bar{x}$ = 1.247); Credit referencing ($\bar{x}$ = 1.252); Deposit protection ($\bar{x}$ = 0.268). These variables were constructed as indices from the various measurements connected to

thedependent variable as per the literature review. Consequently Agency Banking was connected to the Expenses ($\bar{x}$ = 0.0594); Non-interest income ($\bar{x}$ = 0.252); and Liquidity ($\bar{x}$ = 0.422). Mobile banking was related to Labor productivity ($\bar{x}$ = 6.302); Interest spread ($\bar{x}$ = 0.129); and Growth in deposits ($\bar{x}$ = 1.215). Credit Referencing was related to bank Solvency ($\bar{x}$ = 6.259); Non-performing loans ($\bar{x}$ = 0.0182); and Growth in assets ($\bar{x}$ = 1.192). Finally, Deposit Protection was connected to Deposit insurance ($\bar{x}$ = 0.1139); Capitalization ($\bar{x}$ = 0.213); Funding ($\bar{x}$ = 5.727)

4.2.3 ROE Trend

Half of the study period coincided with declining levels of ROE. The annual industry average ROE peaked at 22% in 2010 after which there was a general declining trend leading to 14.8% in 2015. It was therefore instructive to find out the extent to which the innovative practices such increased and improved delivery channels contributed to the firm profitability or in forestalling what would have amounted to a sharper decline in profitability. There was also the need to understand the role played by the financial infrastructure since it can enable or hinder developments in the sector. See ROE trend in Figure 4.2.

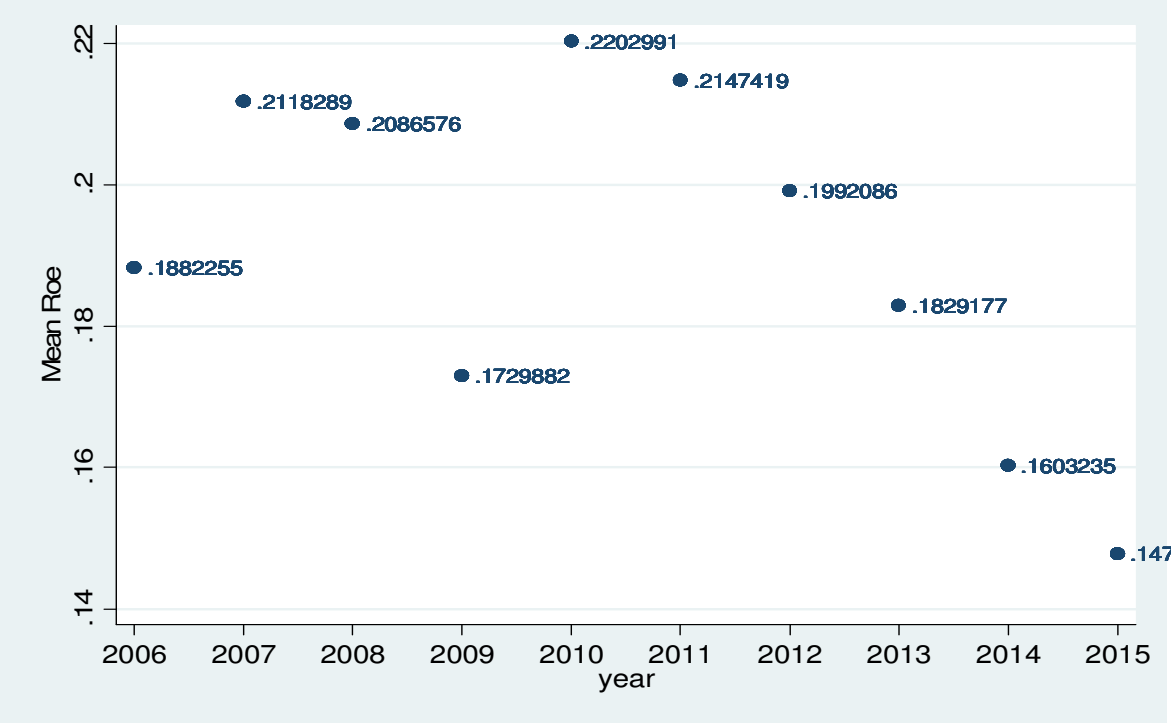

*Figure 4.2.*Annual Average ROE Trend Among Kenya Banks

4.3 Correlation Analysis

As an initial exploration of the nature, direction and strength of relationship between independent variables and the dependent variable, a correlation analysis was conducted in respect of each of the study objective where $\alpha = 0.05 = p < 0.05$ is significance level. Sub-sections 4.3.1 to 4.3.4 provide the results of the analysis.

4.3.1 Effects of Agency Banking on Return on Equity

Table 4.2

Correlation Analysis Between Agency Banking on Return on Equity

	ROE	Agency banking	Expenses	Non-interest income	Liquidity
ROE	1				
Agency banking	-0.0699	1			
	0.4187				
Expenses	-0.0193	0.3339***	1		
	0.8155	0.0001			
Non-interest income	0.2351***	0.3298***	0.5921	1	
	0.004	0.0001	0		
Liquidity	-0.1383	0.4262	-0.111	-0.2002	1
	0.0971	0	0.1853	0.0154	

NB: *, **, *** Signifies significance level at 10%, 5%, and 1% respectively.

The results of correlation analysis between ROE and Agency Banking, including all the various measurements connected to it indicated that there was no evidence that Agency Banking affected

ROE (r = -0.0699, p = 0.4187). At the same time, Expenses (r = -0.0193, p = 0.8155) indicated no significant relationship with ROE. A similar finding was also evident with regard to Liquidity (r = -0.1383, p = 0.0971). However, there was enough statistical evidence that Non-interests income was related with ROE (r = 0.2351***, p = 0.004) since the variable was significant at α = 0.05.

4.3.2 Effects of Mobile Banking on Return on Equity

Table 4.3

Correlation Analysis Between Mobile Banking on Return on Equity

	ROE	Mobile banking	Labor productivity	Interest spread	Growth in deposits
ROE	1				
Mobile banking	0.1179	1			
	0.1834				
Labor productivity	0.157	0.3152***	1		
	0.0593	0.0003			
Interest spread	0.0268	-0.0499	-0.1058	1	
	0.7513	0.5727	0.2117		
Growth in deposits	0.0372	0.0998	0.0104	-0.1136	1
	0.6554	0.2588	0.9024	0.1846	

NB: *, **, *** Signifies significance level at 10%, 5%, and 1% respectively.

A correlation analysis assessing the relationship between ROE and Mobile banking indicated that the relationship was not significant (r = 0.1179, p = 0.1834). The individual components of connected to Mobile Banking were also assessed and the results showed that there was again no significant relationship with Labour productivity (r = 0.157, p = 0.0593); similar results were also obtained with regard to Interest spread (r = 0.0268, p = 0.7513) and Growth in deposits (r = 0.0372, p = 0.6554). Therefore, the correlation analysis did not confirm existence of Mobile banking effects on ROE, either as a composite factor or through the various components connected to it.

4.3.3 Effects of Credit Referencing on Return on Equity

Table 4.4

Correlation Analysis Between Credit Referencing on Return on Equity

	ROE	Credit referencing	Solvency	Non-performing loans	Growth in assets
ROE	1				
Credit referencing	-0.2242***	1			
	0.0087				
Solvency	0.0017	0.4217***	1		
	0.9836	0			
Non-performing loans	-0.1265	0.0384	0.1782**	1	
	0.1203	0.6548	0.0286		
Growth in assets	0.0751	0.0772	0.1858**	-0.0939	1
	0.3675	0.3683	0.0252	0.258	

NB: *, **, *** Signifies significance level at 10%, 5%, and 1% respectively.

Consistent with the third objective, a correlation analysis between Credit referencing and ROE revealed a significant effect of CRB on the ROE (r = -0.2242***, p = 0.0087). This result indicated that ROE was lower after introduction of CRBs than it was before their introduction. Hence, further correlations on the individual components did not further confirm that finding as evidenced by not significant results relating to Solvency(r = 0.0017, p = 0.9836); Non-performing loans (r = -0.1265, p = 0.1203); and Growth in assets (r = 0.0751, p = 0.3675).

4.3.4 Effects of Deposit Protection on Return on Equity

Table 4.5

Correlation Analysis Between Deposit Protection on Return on Equity

	ROE	Deposit protection	Deposit insurance	Capitalization	Stable funding sources
ROE	1				
Deposit protection	-0.0228	1			
	0.7796				
Deposit insurance	0.2085***	0.5979***	1		
	0.0097	0			
Capitalization	-0.1647**	0.2231***	0.1755***	1	
	0.0413	0.0016	0.0136		
Stable funding sources	-0.0411	0.4072***	-0.2294***	-0.6188***	1
	0.6126	0	0.0012	0	

NB: *, **, *** Signifies significance level at 10%, 5%, and 1% respectively.

In respect to deposit protection, there was a negative correlation with no significant effect on ROE (r = -0.0228, p = 0.7796). Further investigation of the component parts indicated that higher Deposit insurance was significantly related with increase in ROE (r = 0.2085***, p = 0.0097) and the reverse was the case in regard to Capitalization where a rise in capitalization was accompanied by decrease in ROE (r = -0.1647, p = 0.0413**). This may be attributed to two factors, that is; under-utilization of resources and increases in the cost of capital. On the other hand, no relationship was evidenced from the relationship between Stable funding sources and ROE (r = -0.0411, p = 0.6126).

4.4 Panel Data Regressions

The researcher used Panel data regression to incorporate data that was measured for the same banks at multiple regular points in time were it was analysed using OLS, fixed effects and random effects models for comparison purposes Baltagi(2013)

Table 4.6

Panel Data Regressions Analysis

VARIABLES	(1) OLS	(2) FE	(3) RE
Agency banking	-0.00434	0.0704***	0.0551***
	(0.0197)	(0.0191)	(0.0179)
Mobile banking	0.0696***	0.0390**	0.0347*
	(0.0233)	(0.0188)	(0.0182)
Credit referencing	-0.0245	-0.0180	-0.0239
	(0.0229)	(0.0161)	(0.0157)
Deposit protection	-0.499***	-0.153	-0.254*
	(0.185)	(0.165)	(0.153)
Gross domestic product growth	0.00336	0.00314*	0.00274*
	(0.00256)	(0.00158)	(0.00154)
Foreign exchange rate	-0.00405***	-0.00433***	-0.00382***
	(0.00137)	(0.000956)	(0.000893)
Inflation	0.00902	0.00865*	0.00820*
	(0.00696)	(0.00439)	(0.00427)
Constant	0.508***	0.395***	0.457***
	(0.135)	(0.103)	(0.0973)
Observations	123	123	123
R-squared	0.190	0.762	0.502
F value	3.858	13.05	14.49
Degrees of freedom	115	98	115
Prob> F	0.000832	0	0
Adjusted R2	0.141	0.703	0.467
F test that all u_i=0 [Group test]		13.82***	
Test: Var(u) = 0 [LM test]			138.21***
Test: Ho: difference in coefficients not systematic [Hausman test]			8.22

NB: *, **, *** Signifies significance level at 10%, 5%, and 1% respectively.

According to OLS model, 14.1%% of the total variation in ROE was explained by the model, which was significant at $\alpha = 0.05$ ($F = 115$, $p < 0.05$). Agency banking was found to be negatively related with ROE ($\beta = -0.00434$, SE = 0.0197), implying that after introduction of agency banking, there was reduction in ROE for the most banks. The results indicated that on average, there was 0.4% reduction in ROE after the introduction of Agency Banking, holding other factors constant. Mobile banking had a significant relationship with ROE indicating that on average, a bank using banking was likely to earn 6.9% in ROE than a firm that was not (β =

0.0696***, SE = 0.0233). On the contrary, Credit referencing did not show significant relationship with ROE (β = -0.0245, SE = 0.0229). Deposit protection had a significant negative relationship with ROE indicating that one unit increase in the aggregate of the component parts including capitalization, liquidity ratio, and stable funding sources nearly halved the ROE compared to bank that maintained the same level of deposit protection index (β = -0.499***, SE = 0.185). The controls included Gross domestic product growth (β = 00336, SE = 0.00256) not significant; Foreign exchange rate which was significant at (β -0.00405***= SE = 0.00137); and Inflation not significant at (β = 0.00902, SE = 0.00696). The intercept was at 50.8% (α = 0.508***, SE = 0.135).

Fixed Effects (FE) model, on the other hand accounted for 70.3% of the total variation of ROE (Adjusted R2 = 0.703). The fixed effects model was used to analyse the impact of variables that vary over time and was used to explore the relationship between predictor and outcome variables within an entity. Agency banking had significant positive relationship with ROE indicating that firms that were operating Agency banking were on average likely to earn 7% more than when they had not begun operating Agency banking (β = 0.0704***, SE = 0.0191). Banks using Mobile banking platforms were also likely to generate about 4% in ROE than before its use (β = 0.0390**, SE = 0.0188). Finally, there was no significant relationship between credit referencing and ROE (β = -0.018, SE = 0.0161). This could have been indicative of the fact it takes time for the effects of the credit referencing to be felt initially by improving the asset quality but also by lowering the bad debt expense and other related expenses. However, there was no significant relationship with Deposit protection (β = -0.153, SE = 0.165). Controls used included Gross domestic product growth which was not much significant at (β = 0.00314*, SE = 0.00158); Foreign exchange rate was moderating significantly at. (β = -0.00433***, SE = 0.000956); and Inflation not much moderation at (β = 0.00865*, SE = 0.00439). The intercept was significant Constant (α = 0.395***, SE = 0.103)

Random effects model was also used to establish the differences across entities that had some influence on the dependent variable. The model explained 46.7.2% of the total variance (Adjusted R2 = 0.467). The model showed that Agency banking was significantly related with ROE, signifying that banks that operated agency banking were likely to earn 5.5% more than those that did not (β = 0.0551***, SE = 0.0179). No discernable effects were shown between

Mobile banking (β = 0.0347*, SE = 0.0182), Credit referencing (β = -0.0239, SE = 0.0157), Deposit protection (β = -0.254*, SE = 0.153) and ROE. The controls used included the Gross domestic product growthwas moderate at (β = 0.00274*, SE = 0.00154); Foreign exchange rate was significantly moderating at (β = -0.00382***, SE = 0.000893); and Inflation was no much significance at (β = 0.00820*, SE = 0.00427). The intercept 45.7% (β = 0.457***, SE = 0.0973).

4.4.1 Hausman Test

The researcher tested for regression analysis (see Table 4.6) indicating the results and findings according to the ordinary least squares model (OLS), fixed effects model (FE) and random effect model (RE). Since the study used longitudinal descriptive research design where there is observation of time variance, the researcher did not preferred the results and findings reflected in the OLS model since it assumes homoscedasticity where the error term is assumed to be the same in each observations. According toBaltagi(2013), OLS assumes no autocorrelation, meaning that error terms are uncorrelated between observations and also assumes normality where errors are normally distributed. Fixed effect model assumes time invariant characteristics meaning that they are unique to individual entities while the FE model includes time invariant variables assuming entity error terms are not correlated with the predictor. Therefore if error terms are correlated then fixed effect model is not appropriate. The researcher chose between FE model and the RE model using Hausman test where the null hypothesis is that the preferred model is random effects vs. the alternative fixed effects model (Wooldridge, 2010)

Table 4.7

Hausman Test Results

	Coefficients			
	Fixed	Random	Difference	S.E.
Agency banking	0.07041	0.05468	0.01573	0.0063
Mobile banking	0.03904	0.04014	-0.0011	0.00371
Credit reference	-0.018	-0.0179	-0.0002	0.00174
Deposit protection	-0.1532	-0.2398	0.08659	0.04706

b = consistent under Ho and Ha; obtained from xtreg

B = inconsistent under Ha, efficient under Ho; obtained from xtreg

Test: Ho: difference in coefficients not systematic

chi2 (7) = 8.22, Prob>chi2 = 0.3137.

The results in Table 4.7 indicated that the $p > 0.05$ i.e 0.0137 is greater than $\alpha = 0.05$ therefore not significant, meaning that RE provided better estimates than FE.

4.5. Discussions

Profitability in the banking sector in Kenya has been a source of concern in the recent past as banks have shown a declining trend in their ROE across the years, from a high rate of 22% in 2010 to 14.8% in 2015, decreasing every year unlike the preceding 5 years when there was a general upward trend. This happens on the backdrop of numerous innovative measures that have taken place in the Kenyan banking scene that were intended to increase the profitability of the banking system in Kenya. But the banking sector has also remained one of the most profitable sectors in Kenya. Consequently, the present study sought to widen the existing knowledge on the effects of selected banking channels as well as support infrastructure that recently have undergone certain modifications or have generated increased public interest including increased usage, undergoing legal and/or regulatory reforms. To facilitate this aim, two banking channels and two support infrastructure items were considered, that is, agency banking and mobile banking as well as CRB and deposit protection, respectively.

An initial estimate using correlation analysis showed that there was a negative relationship between agency banking and ROE. However, this finding was not backed in the subsequent panel data regression analysis. The only item accruing from agency banking that showed significant relationship with ROE was Non interest Income. This may have been due to various factors including increased funds from fee based transactions, enhanced deposit mobilization and cost savings based on the agency banking model that reduces, overall the cost of banking to each additional customer. According to Mas (2009), agency banking offers a very cheap way to set up banking operations in remote areas as well as reducing costs per-transaction lowering the overall costs of the bank.

Subsequently, the mobile banking was brought to correlation analysis which showed that there was no significant correlation between mobile banking and ROE. This relationship was further upheld by the panel regressions despite those results showing that other factors related to mobile banking, that is, Labour Productivity, interest spreads and growth in deposits were positively related to ROE. Hence it was noted that mobile banking had a significant indirect effects on ROE through savings mobilization that lowers the cost of capital as well increasing income from lending operations by making lending more profitable through increased margins. According to Mas and Kumar (2008), Mobile banking can help a bank get to market rapidly without the burden of physical infrastructure investments, especially in rural areas. The benefits such as ubiquity coverage, flexibility, interactivity, fast and greater accessibility makes m-banking superior to conventional banking channels (Kumar, 2012).

Regarding CRB, the correlations showed a negative relationship with ROE. Additionally, it was found that two of the three factors associated with CRB were significantly related with ROE, Non-performing loans highly negatively and Growth in assets positively. This showed that CRB too had indirect effects on ROE through the instruments of loan quality and ability to make more loans hence increasing the bank's asset valuation. According to Bennardo, Pagano, Pgano and Piccolo (2015), information sharing has two opposite incentive effects: on one hand, it allows lenders to better protect themselves against borrowers' opportunistic behaviour, and therefore to charge lower rates and expand lending; on the other hand, it enables opportunistic lenders to better target those borrowers to whom they can profitably lend at their competitors' expenses. These two factors may have confounded the effects of CRB on banking profitability. As Carlson *et al*. (2013) points out, deteriorations in economic activity may also reduce the number of borrowers seeking loans.

Finally, the tests regarding the relationship between deposits protections measured through the percentage of insured customer showed a significant positive relationship with ROE. Two other factors related to Deposit protection also were significantly related with ROE, negatively with Capitalization as well as Funding Sources. These relationships were not confirmed with the panel data regressions leading to the conclusion that firm specific as well as macroeconomic factors were more likely correlated with the items examined thereby confounding the nature and the

direction of the relationship through the omitted variables in the model. According to Ketcha (2007), deposit insurance are vital part of safety net arrangements that facilitate sound, competitive banking system is critical to a nation's economic vitality. Hence, by providing a guarantee that depositors are not subject to loss, removes the incentive to participate in a bank run. This assertion seems to hold even in the present study with the additional view that factors relating to the firm or the macro-economic environment may act as a trigger for certain limits of deposit protection now affecting the bank profitability, such as abnormal non-performing loans or unveiling of prudential violations in the bank.

4.5.1 Hypothesis 1: Agency Banking has no significant effect on Profitability of Commercial Banks operating in Kenya

According to the correlation analysis, there was no discernible relationship between Agency banking and ROE. However, the relationship between Non-interest income and ROE was significant and positive. This means that Agency banking may have contributed to ROE through additional income that is generated from fee based transactions though this effects was counterbalanced by Expenses and Liquidity components as all the three items were used in constructing the Agency Banking index. As per the regression analysis, there was a significant positive relationship between Agency Banking and ROE. In light of these two results, the study held that there was indeed a relationship between agency banking and Return on equity. According to Beltratti and Stulz(2012), non-interest income measured as a fraction of non-interest income scales by total income relates to the extent of income diversity of the bank. The percentage value gives an indication of the extent to which a bank's activities are diversified away from the traditional banking loan business. As such, the correlation analysis showed that it was mainly through the mechanisms of transaction based revenues that agency banking affected return on equity. Laeven, Levine and Michalopoulos(2015), found a wide range of non-interest income with the lowest value of 2.57% and the highest of 85.58% which mirrored the current study finding of non-interest income of range between 4% and 86%. Therefore, following Fredriksson and Moro (2014) model, internal determinants of bank profitability were assessed including the operating efficiency, bank deposit and bank credit strategy, and asset and liability portfolio mix. It was the latter that involved income diversification that significantly affected the

bank profits. Given the foregoing, the study accepted the null hypothesis that, agency banking do not affect profitability of commercial banks in Kenya.

4.5.2 Hypothesis 2: Mobile Banking has no significant effect on Profitability of Commercial Banks operating in Kenya

Mobile banking on the aggregate did not have any significant correlation with return on equity. Similarly, a panel data regression analysis showed that there was no significant relationship between Mobile banking and ROE. Inspection of the components making up the mobile banking utilized in the correlation analysis further confirmed that there was no significant relationship with ROE. Pairwise correlation analysis also showed that none of the individual components that were aggregated in the mobile banking index were significantly related with ROE. These components included labour productivity, Interest spread, and Growth in deposits. According to Donner and Tellez (2008), mobile banking provides financial services to those without access to traditional banks, however, the present study could not verify the financial effects of this. Hence, the study concluded that there was no significant effect on profitability of commercial banks in Kenya, therefore accept the null hypothesis.

4.5.3 Hypothesis 3: Credit information sharing through Credit Reference Bureaus (CRBs) has no significant effect on Profitability of Commercial Banks operating in Kenya

The composite index Credit Referencing showed significant correlation with return on equity. The individual components including Solvency, Non-performing loans, and Growth in assets, however, did not have any significant relationship with ROE. This result was inconclusive and therefore panel data regression was considered useful as it highlighted the nature of the relationship. The results showed no significant relationship between Credit Referencing and ROE. It was therefore clear from the analyses that there was little statistical proof that Credit Referencing affected ROE. According to Schwarcz(2014), information failure can undermine the reliability of pricing leading to loan losses and bad debt expenses. Hence, fact that the results did not show relationship between Credit Referencing and ROE indicates that there could have been significant information asymmetry among the various parties to lending transactions since not enough data could have been available for effective lending and pricing decisions. Therefore there is need to have an extended time lag before full effects can take root. Moreover, with many

potential borrowers still beyond the reach of the financial grid, the increases may only be minimal. Therefore, the null hypotheses was accepted as there no much evidence to reject the null hypothesis.

4.5.4 Hypothesis 4: Deposit protection measures have no significant effect on Profitability of Commercial Banks operating in Kenya

There was no significant correlation between deposit protection and ROE. However, two of the component variables used in developing deposit protection index had significant relationships with ROE. Deposit insurance which consisted of percentage of customer deposits that were insured related positively with ROE while Capitalization which was measured as percentage of equity capital over total capital related negatively with ROE. There was no significant correlation between Stable funding sources and ROE. Hence, a panel data was also used to help clarify the nature of the relationship. It was observed that under RE model there were no significant relationships between Deposit protection and ROE.

Thus according to Angeloni and Faia(2013), capital requirements and other prudential instruments are supposed to ensure, at least with high probability, the solvency of individual banks, with the implicit tenet that stable banks would automatically translate into a stable financial system thereby protecting the depositors from potential losses. Banks face the trade-off between liquidity and profitability since illiquid assets and long-term investment increases profitability but exposes banks to illiquidity after intrinsic and extrinsic shocks (Wang & Cox, 2013). Therefore deposit protection among traditional banks' with more stable deposit funding structure have an advantage, in that it gives them the ability to hold investments to maturity, riding out transitory valuation shocks until prices revert to fundamental values (Hanson *et al.,* 2015). The results of the study however, could not sustain the decision to reject the null hypothesis and therefore accepted the null hypothesis.

CHAPTER FIVE
SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

5.1. Introduction

This chapter provide the summary of the study, conclusions arising from such findings as well as recommendations.

5.2 Summary of the Findings

Arising from the growing competition as well as various changes that have structurally modified the way banking is carried out in the banking sector in Kenya, this study sought to assess the effects of selected banking channels as well as support infrastructure on the profitability of banks commercial banks operating in Kenya. The study was further informed that in spite of the banking sector having been of the most profitable sectors in Kenya, there are banks that have performed dismally, some even going through receivership. Various factors have culminated into this situation,yet, the overriding issue of how innovative delivery channels and how the support infrastructure have enabled or hindered the banking financial performance has remained a concern.

Thus the study sought to examine the effects of specific banking channels such as the agency banking, mobile banking, as well as support infrastructure CRB and deposit protectionon the banks' profitability. A 10-year study period was determined to be useful in exploring these factors given that most changes in the selected factors took effect nearly in the latter half of the period, therebyalmost evenly dividing the study period into pre and post changeperiod. Accordingly, a panel data analysis using the longitudinal research design was considered appropriate for the study is it took into account both time and cross-sectional dimensions of the study variables.

The profitability of the banks was measured using ROE. Thus profitability of the individual banks, the study found out that over the period, the lowestROEvalue was 17.9% while highest average return on equity in the study period was at 52.3% with industry average return on equity in the period under study being at 19.01%. Indexes were constructed in respect of Agency

banking, Mobile banking, Credit Referencing, and Deposit protection using relevant individual component measurements retrieved from the financial reports of the banks in the study. Three control variables were also used in the study including GDP growth, foreign exchange rate and inflation. From the data presented, it was apparent that from 2010, the banking sector has been experiencing a decline on ROE, from a high of 22% in 2010 to a low of 14.8% in 2015.

5.2.1 Effect of Agency Banking on Return on Equity

Agency bankingcorrelated analysis indicated no significant correlation with ROE. This may be attributed to the fact that agency banking had been in use for only a few years whereas they have spent a lot of money to launch and upgrade the systems. But the study also showed that agency banking has helped increase banks' non-interest income though the effects on liquidity and expenses were not significant. Nonetheless, agency banking showed significant positive relationship with ROE as per the panel regression model. Taken together, the results were deemed inconclusive as one of the analyses of linear relationship was not significant. Moreover, two of the three individual components of agency banking were not significantly related with ROE.

5.2.2 Effect of Mobile Banking on Return on Equity

On Mobile banking, neither the correlation analysis nor the panel data regression analysis showed significant relationship between mobile banking and ROE. Additionally, there was no significant correlation between the individual component measures of mobile banking and ROE. This led to the conclusion that there were no significant effects of mobile banking on ROE. One potential attribute of this relationship is that mobile banking may be useful for carrying out routine remote transactions that do not attract revenues for the bank such as account balance checking and generation of statements.In the interim, it is also unlikely that employees who would have been responding to such customer queries would have been laid off to have resulted in reduced staff costs.

5.2.3 Effect of Credit referencing on Return on Equity

A different result was obtained in regard to CRB where a significant negative correlation with ROE was shown through correlation analysis. No significant relationship was also found

between Credit referencing and ROE using panel data regressions analysis.Individual components used in constructing CR index also showed results that were not significant under the correlation analysis. Hence, the study arrived at the conclusion that there was no enough evidence that CRB affected bank profitability.

5.2.4 Effect of Deposit Protection on Return on Equity

Finally, Deposit protection showed significant positive relationship with ROE under the correlation analysis but panel regressions did not confirm existence of such relationship. Further, it was evident that only deposit insurance correlated significantly with ROE, positively. The two other components, capitalization and Stable funding sources did not show significant relationship with ROE. It was then concluded that there was no enough proof that deposit protectionaffected Roe as the results were not conclusive, this could be attributed to information asymmetry as seen in appendix VI showing the trend of deposits is inversely related to insured deposits. This could mean that other factors such agency banking is responsible for the constant increase in customer deposits from the year 2006 to the year 2014.

5.3 Conclusions

Changes in the banking sector entailing agency banking, mobile banking, CRB, and deposit protection mechanisms potentially provide banks with opportunities to drive their profitability by increasing their product offering as well as reducing their overall costs of doing business, among other benefits. Contrary to this expectation commercial banks in Kenya have not been fairly doing well (see figure 1.1 and 4.2). The researcher found it necessary to investigate whether the selected delivery channels and support infrastructure have any effect on profitability of commercial banks in Kenya. The results and findings of this study indicated that, there was no enough evidence that the factors analysed affected ROE; Agency Banking($r = -0.0699$, $p = 0.4187$), ($\beta = 0.0551$, $SE = 0.0179$), Mobile Banking ($r = 0.1179$, $p = 0.1834$), ($\beta = 0.0347^{*}$, $SE = 0.0182$), Credit Referencing($r = -0.02242^{***}$, $p = 0.0087$), ($\beta = -0.0239$, $SE = 0.0157$), and Deposit Protection ($r = -0.0228$, $p = 0.7796$), ($\beta = 0.254^{*}$, $SE = 0.153$), However, some of the individual components such as Non interest income($r = 0.2351^{***}$, $p = 0.004$), deposit insurance($r = 0.2085^{***}$, $p = 0.0097$) and capitalization($r = -0.1647^{**}$, $p = 0.0411$), associated with the factors showed that they significantly contributed to the changes in ROE.The study,

therefore, concluded that, there are varied time lags for each of the factor's effects to filter to income statement of the banks.

5.4 Recommendations

The selected channels and support infrastructure assessed in the model indicated that the results may not be conclusive when the analysis is done contemporaneously, hence a more complete results may be obtained by using time lags to allow for effects to take place and filter to the income statement and balance sheet of the bank. How much time lag is appropriate is another question that such an analysis may look into.Hence, given the tightening competitive environment and stringent regulatory policies in the Kenyan banking sector, banks would be better advised to be fast innovators as well as first adopters of emerging innovating banking processes and technologies to give them a competitive edge and continued superior financial performance. Secondly, bank management should focus on niche products such as Non interest incomes by offering a wide range of products through delivery channels to various segments of business groups such as the education sector where transactions like school fees payment can be done through agencies or mobile banking and by this, banks maximises on Non-interest income through transaction cost charged to customers.

Finally, Support infrastructure is meant to give support to favourable business dealings in the banking sector. The regulators of the infrastructure should focus on credit referencing and deposit insurance as it indicated significant relationship with ROE. Credit referencing is meant to curb dishonest customers who borrow loan and don't honour their repayment, but should not discourage investors who are risk takers from doing business. Regulators should come up an evaluation and monitoring strategy to establish those defaulters who are genuinely affected by adverse selections so that banks are required establish the cause of defaulting before they submit names of defaulters to credit reference bureau. Credit reference bureau may discourage investors which in turn affect the profitability of commercial banks in Kenya. With regard to deposit protection, depositors would want their deposits insured. Banks should put more emphasis on ensuring that the percentage rate of insured deposit is good enough to win the trust of depositors to deposit cash to the banks to assure them of their money in case of receivership.

5.5 Suggested Area for Further Research

A future study should use instrumented variables to expound on the present study, since the factors considered in this study were exogenous to profitability and could only affect profitability through other factors.

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APPENDICES

APPENDIX I

Letter of Introduction

Dear Sir/Madam

RE: MBA RESEARCH

I am a student at Kabarak University undertaking a study on "**Effect Of Selected Bank Delivery Channels And Support Infrastructure On Profitability Of Commercial Banks In Kenya"** for the fulfillment of requirements for the award of Master of Business Administration Degree. It is towards this goal that I hereby request your organization access audited bank annual reports from 2006-2015 since the study involves analysis of quantitative financial data. Your bank is assured of confidentiality and anonymity as the study only reports aggregated data.

Your kind assistance is highly appreciated.

Isaac KipronoKiprop

APPENDIX II

Data Capture Sheet

Section A: Organizational Profile

Company Name…….

Year of incorporation……

Listing status……..

Nationality status.…….

Section B: Bank financial data

	Year									
Income statement	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**
Interest income										
Non-interest income										
Total revenues										
Employee expenses										
Number of employees										
Operating expenses										
Non-performing loans										
Net income										
Interest rate on deposits										
Interests rate on loans										

	Year									
Balance Sheet	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**
Current assets										
Non-current assets										
Total assets										
Loans										
Current liabilities										
Long-term liabilities										
Total debt										
Bonds										
Cash										
Securities										
Resident deposits										
Certificates of deposit										
Commercial papers										
Tier 1 capital										
Statutory capital ratio										
Statutory liquidity ratio										
Stable funding										
Agency banking status										
Mobile banking status										
CRB status										
Deposit protection index										
Number of employees										

Section C: Deposit protection data

	Year									
Balance Sheet	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**
Bank rank										
Insured deposits										
Customer deposits										
Percentage										

APPENDIX III

Operationalization of Variables

Operating expense management	Operating expenses/Net Profits
Growth in non-interest income	Non-interest Income/non-interest income last year
Liquidity	(Cash + cash equivalents)/Deposits
Labor productivity	Total revenue/Number of employees
Interest spread	Interest income/loans– Interest expense/deposits
Growth in deposit	Deposits this year/Deposits last year
Solvency	Debt/common equity
Non-performing loans	Loan loss provisions/Total loans
Asset growth	Total loans this year/Total average assets last year
Deposit insurance	% of deposits insured
Capitalization	Tier I capital/risk weighted assets – Statutory minimum
Funding	Deposits/Total assets
ROE	Net profit/Equity
GDP growth	% GDP growth
Exchange rate	KES/Dollar
Inflation	% Inflation rate

APPENDIX IV

List of Commercial Banks in Kenya

1. ABC Bank (Kenya)
2. Bank of Africa
3. Bank of Baroda
4. Bank of India
5. Barclays Bank of Kenya
6. CfCStanbic Holdings
7. Chase Bank Kenya (Under Receivership)
8. Citibank
9. Commercial Bank of Africa
10. Consolidated Bank of Kenya
11. Cooperative Bank of Kenya
12. Credit Bank
13. Development Bank of Kenya
14. Diamond Trust Bank
15. Dubai Bank Kenya
16. Ecobank Kenya
17. Equity Bank
18. Family Bank
19. Fidelity Commercial Bank Limited
20. First Community Bank
21. Giro Commercial Bank
22. Guaranty Trust Bank Kenya
23. Guardian Bank
24. Gulf African Bank
25. Habib Bank
26. Habib Bank AG Zurich
27. Housing Finance Company of Kenya

28. I&M Bank
29. Imperial Bank Kenya (Under receivership)
30. Jamii Bora Bank
31. Kenya Commercial Bank
32. Middle East Bank Kenya
33. National Bank of Kenya
34. NIC Bank
35. Oriental Commercial Bank
36. Paramount Universal Bank
37. Prime Bank (Kenya)
38. Sidian Bank(Formerly K-rep Bank)
39. Spire Bank (Formerly Equitorial Bank)
40. Standard Chartered Kenya
41. Trans National Bank Kenya
42. United Bank for Africa
43. Victoria Commercial Bank

Source:CBK, 2015

APPENDIX V

Bank Profitability Trend

Year	Profit before tax(Ksh.M)	Net Assets (Ksh. M)	ROA	Equity (Ksh. M)	ROE
2006	26,375	947,078	2.80%	93,167	28.31%
2007	35,091	995,990	3.50%	125,134	28.04%
2008	42,633	1,195,388	3.60%	160,938	26.50%
2009	47,557	1,350,528	3.52%	190,480	24.97%
2010	23,668	590,433	4.01%	90,774	26.07%
2011	88,478	1,988,486	4.40%	286,450	30.89%
2012	106,996	2,289,649	4.70%	357,037	30.00%
2013	124,547	2,656,639	4.70%	426,496	29.20%
2014	139,861	3,138,905	4.46%	495,457	28.20%

Source: CBK: 2007, 2008, 2009,2010,2011,2012,2013,2014,2015

APPENDIX VI

Deposit Insurance as a % of Customer Deposits

Year	Insured deposits (Ksh. M)	Customer deposists (Ksh. M)	Insured deposits as a % of customer deposits
2006	85,487	580,684	15%
2007	112,371	695,348	16%
2008	123,714	849,417	15%
2009	126,629	987,543	13%
2010	148,053	1,220,603	12%
2011	171,030	1,488,168	11%
2012	176,087	1,707,834	10%
2013	196,473	1,935,661	10%
2014	210,651	2,345,596	9%

Source: CBK: 2007, 2008, 2009,2010,2011,2012,2013,2014,2015

APPENDIX VII

Agent Banking Trend

Year	Number of commercial banks	Number of active agents
2010	5	8,809
2011	8	9,748
2012	10	16,333
2013	13	23,477
2014	16	35,789

Source: CBK: 2007, 2008, 2009,2010,2011,2012,2013,2014,2015

APPENDIX VIII

Commercial Banks Market Share

	Bank	Assets (Million K shs.) Weighting:0.33	Market share
Large Peer Group>5%	Kenya Commercial Bank Ltd	304,112	13.10%
	Equity Bank Ltd	215,829	9.30%
	Cooperative Bank Ltd	199,663	8.60%
	Standard Chartered Bank (K) Ltd	195,493	8.40%
	Barclays Bank of Kenya Ltd	185,102	7.90%
	Sub-total	**1,100,199**	**47.30%**
Medium Peer Group> 1% &< 5%	NIC Bank Ltd	101,772	4.40%
	Diamond Trust Bank Ltd	94,512	4.10%
	Commercial Bank of Africa (Ltd)	100,456	4.30%
	I&M Bank Ltd	91,520	3.90%
	National Bank of Kenya Ltd	67,155	2.90%
	Baroda Bank Ltd	46,138	2.00%
	Bank of Africa Ltd	48,958	2.10%
	Imperial Bank Ltd	34,590	1.50%
	Family Bank Ltd	30,985	1.30%
	Sub-Total	**616,086**	**26.50%**
	African Banking Corporation Ltd	19,071	0.80%
Small Peer Group<1%	Consolidated Bank of Kenya Ltd	18,001	0.80%
	Giro Commercial Bank Ltd	12,280	0.50%
	Trans-National Bank Ltd	8,801	0.40%
	Paramount Universal Bank Ltd	7,255	0.30%
	Oriental Commercial Bank Ltd	6,220	0.30%
	Sub-Total	**71,628**	**3.10%**
	Grand-Total	**1,787,913**	**77%**

Source: CBK: 2012

APPENDIX IX

Commercial Banks Data

Table 4.8

Dependent and Independent Variables

Year	Id	Bank	ROE	AB	MB	CRB	DP
2006	3	African Banking Corporation Ltd	0	0	0	0	0.1
2007	3	African Banking Corporation Ltd	0	0	0	0	0.1
2008	3	African Banking Corporation Ltd	0	0	0	0	0.1
2009	3	African Banking Corporation Ltd	0	0	0	0	0.1
2010	3	African Banking Corporation Ltd	0.2066217	0	1	0	0.1
2011	3	African Banking Corporation Ltd	0.2173913	0	1	0	0.1
2012	3	African Banking Corporation Ltd	0.1803977	0	1	1	0.1
2013	3	African Banking Corporation Ltd	0.1804082	1	1	1	0.1
2014	3	African Banking Corporation Ltd	0.1025543	1	1	1	0.1
2015	3	African Banking Corporation Ltd	0.1022207	1	1	1	0.1
2006	4	Bank of Africa Ltd	0.0531697	0	0	0	0
2007	4	Bank of Africa Ltd	0.091053	0	0	0	0
2008	4	Bank of Africa Ltd	0.1311673	0	0	0	0
2009	4	Bank of Africa Ltd	0.1166866	0	0	0	0
2010	4	Bank of Africa Ltd	0.1572156	0	0	0	0
2011	4	Bank of Africa Ltd	0.1235017	0	1	0	0
2012	4	Bank of Africa Ltd	0.1401198	0	1	1	0
2013	4	Bank of Africa Ltd	0.0666769	0	1	1	0
2014	4	Bank of Africa Ltd	0.0208518	0	1	1	0
2015	4	Bank of Africa Ltd	-0.166784	0	1	1	0
2006	5	Bank of Baroda	0	0	0	0	0.1
2007	5	Bank of Baroda	0	0	0	0	0.1
2008	5	Bank of Baroda	0	0	0	0	0.2
2009	5	Bank of Baroda	0	0	0	0	0.1
2010	5	Bank of Baroda	0	0	0	0	0.1
2011	5	Bank of Baroda	0.2761345	0	0	0	0.1
2012	5	Bank of Baroda	0.2389719	0	0	1	0.1
2013	5	Bank of Baroda	0.2693883	0	0	1	0.1
2014	5	Bank of Baroda	0.224587	0	0	1	0.1
2015	5	Bank of Baroda	0.1797215	0	1	1	0.1
2006	1	Barclays Bank of Kenya Ltd	0.3022473	0	0	0	0.2
2007	1	Barclays Bank of Kenya Ltd	0.2795491	0	0	0	0.2
2008	1	Barclays Bank of Kenya Ltd	0.2712013	0	0	0	0.1
2009	1	Barclays Bank of Kenya Ltd	0.2515903	0	1	0	0.1
2010	1	Barclays Bank of Kenya Ltd	0.3368505	0	1	0	0.1

2011	1	Barclays Bank of Kenya Ltd	0.2776238	0	1	0	0.1
2012	1	Barclays Bank of Kenya Ltd	0.2954538	0	1	1	0.1
2013	1	Barclays Bank of Kenya Ltd	0.2354813	0	1	1	0.1
2014	1	Barclays Bank of Kenya Ltd	0.2186677	0	1	1	0.1
2015	1	Barclays Bank of Kenya Ltd	0.2115268	1	1	1	0.1
2006	6	Commercial Bank of Africa Ltd	0	0	0	0	0
2007	6	Commercial Bank of Africa Ltd	0	0	0	0	0
2008	6	Commercial Bank of Africa Ltd	0.2733886	0	0	0	0
2009	6	Commercial Bank of Africa Ltd	0.2229954	0	0	0	0
2010	6	Commercial Bank of Africa Ltd	0.2773615	0	0	0	0
2011	6	Commercial Bank of Africa Ltd	0.1681933	0	0	0	0
2012	6	Commercial Bank of Africa Ltd	0.2682759	0	1	1	0
2013	6	Commercial Bank of Africa Ltd	0.252382	0	1	1	0.1
2014	6	Commercial Bank of Africa Ltd	0.1895055	0	1	1	0.1
2015	6	Commercial Bank of Africa Ltd	0	0	1	1	0
2006	7	Consolidated Bank of Kenya Ltd	0.0221607	0	0	0	0.2
2007	7	Consolidated Bank of Kenya Ltd	0.0334225	0	0	0	0.2
2008	7	Consolidated Bank of Kenya Ltd	0.1134752	0	0	0	0.2
2009	7	Consolidated Bank of Kenya Ltd	0.0862999	0	0	0	0.1
2010	7	Consolidated Bank of Kenya Ltd	0.1164523	0	0	0	0.1
2011	7	Consolidated Bank of Kenya Ltd	0.1038328	1	0	0	0.1
2012	7	Consolidated Bank of Kenya Ltd	0.08831	1	0	1	0.1
2013	7	Consolidated Bank of Kenya Ltd	-0.087762	1	0	1	0.1
2014	7	Consolidated Bank of Kenya Ltd	-0.179209	1	0	1	0.1
2015	7	Consolidated Bank of Kenya Ltd	0	1	0	1	0.1
2006	2	Cooperative Bank of Kenya Ltd	0.1793546	0	0	0	0.2
2007	2	Cooperative Bank of Kenya Ltd	0.2399381	0	0	0	0.2
2008	2	Cooperative Bank of Kenya Ltd	0.1744434	0	0	0	0.2
2009	2	Cooperative Bank of Kenya Ltd	0.1821753	0	0	0	0.2
2010	2	Cooperative Bank of Kenya Ltd	0.2223841	1	1	0	0.2
2011	2	Cooperative Bank of Kenya Ltd	0.2561214	1	1	0	0.2
2012	2	Cooperative Bank of Kenya Ltd	0.2630163	1	1	1	0.2
2013	2	Cooperative Bank of Kenya Ltd	0.2489613	1	1	1	0.2
2014	2	Cooperative Bank of Kenya Ltd	0.1869301	1	1	1	0.2
2015	2	Cooperative Bank of Kenya Ltd	0.2374298	1	1	1	0.1
2006	8	Diamond Trust Bank Kenya Ltd	0	0	0	0	0.1
2007	8	Diamond Trust Bank Kenya Ltd	0	0	0	0	0
2008	8	Diamond Trust Bank Kenya Ltd	0	0	0	0	0
2009	8	Diamond Trust Bank Kenya Ltd	0.2161903	0	0	0	0.1
2010	8	Diamond Trust Bank Kenya Ltd	0.3080551	0	1	0	0
2011	8	Diamond Trust Bank Kenya Ltd	0.2890218	0	1	0	0
2012	8	Diamond Trust Bank Kenya Ltd	0.2733566	1	1	1	0

2013	8	Diamond Trust Bank Kenya Ltd	0.2816674	1	1	1	0
2014	8	Diamond Trust Bank Kenya Ltd	0.2213776	1	1	1	0
2015	8	Diamond Trust Bank Kenya Ltd	0.219996	1	1	1	0
2006	9	Equity Bank Ltd	0	0	0	0	0.5
2007	9	Equity Bank Ltd	0	0	0	0	0.8
2008	9	Equity Bank Ltd	0	0	0	0	0.6
2009	9	Equity Bank Ltd	0	0	0	0	0.5
2010	9	Equity Bank Ltd	0.316165	0	0	0	0.4
2011	9	Equity Bank Ltd	0.3617713	0	0	0	0.4
2012	9	Equity Bank Ltd	0.4041995	0	0	0	0.4
2013	9	Equity Bank Ltd	0.3778089	0	0	0	0.3
2014	9	Equity Bank Ltd	0.5229175	0	0	0	0.3
2015	9	Equity Bank Ltd	0.5049958	0	0	0	0.3
2006	10	Family Bank Ltd	0	0	0	0	0
2007	10	Family Bank Ltd	0	0	0	0	0.6
2008	10	Family Bank Ltd	0.2350674	0	0	0	0.5
2009	10	Family Bank Ltd	0.1187264	0	1	0	0.4
2010	10	Family Bank Ltd	0.1164055	0	1	0	0.4
2011	10	Family Bank Ltd	0.1095066	1	1	0	0.2
2012	10	Family Bank Ltd	0.1154321	1	1	1	0.2
2013	10	Family Bank Ltd	0.2086126	1	1	1	0.2
2014	10	Family Bank Ltd	0.1703229	1	1	1	0.2
2015	10	Family Bank Ltd	0.1661776	1	1	1	0.2
2006	11	Giro Commercial Bank Ltd	0	0	0	0	0.1
2007	11	Giro Commercial Bank Ltd	0	0	0	0	0.1
2008	11	Giro Commercial Bank Ltd	0	0	0	0	0.1
2009	11	Giro Commercial Bank Ltd	0.1726954	0	0	0	0.1
2010	11	Giro Commercial Bank Ltd	0.3828358	0	0	0	0.1
2011	11	Giro Commercial Bank Ltd	0.190627	0	0	0	0.1
2012	11	Giro Commercial Bank Ltd	0.1273239	0	0	1	0.1
2013	11	Giro Commercial Bank Ltd	0.1811212	0	0	1	0.1
2014	11	Giro Commercial Bank Ltd	0.1630884	0	0	1	0
2015	11	Giro Commercial Bank Ltd	0.1594356	0	0	1	0
2015	13	Imperial Bank Ltd	0	0	0	1	0
2006	13	Imperial Bank Ltd	0.2010347	0	0	0	0.1
2007	13	Imperial Bank Ltd	0.2379747	0	0	0	0.1
2008	13	Imperial Bank Ltd	0.2432008	0	0	0	0.1
2009	13	Imperial Bank Ltd	0.246996	0	0	0	0.1
2010	13	Imperial Bank Ltd	0	0	0	0	0.1
2011	13	Imperial Bank Ltd	0.3017639	0	0	0	0.1
2012	13	Imperial Bank Ltd	0.294686	0	0	1	0.1
2013	13	Imperial Bank Ltd	0	0	0	1	0.1

2014	13	Imperial Bank Ltd	0	0	0	1	0.1
2006	12	Investment & Mortgages Bank Ltd	0.3348837	0	0	0	0.1
2007	12	Investment & Mortgages Bank Ltd	0.3346263	0	0	0	0.1
2008	12	Investment & Mortgages Bank Ltd	0.1804163	0	0	0	0.1
2009	12	Investment & Mortgages Bank Ltd	0.168082	0	0	0	0.1
2010	12	Investment & Mortgages Bank Ltd	0.194453	0	1	0	0.1
2011	12	Investment & Mortgages Bank Ltd	0.2505774	0	1	0	0
2012	12	Investment & Mortgages Bank Ltd	0.2482671	0	1	1	0
2013	12	Investment & Mortgages Bank Ltd	0.2426797	0	1	1	0
2014	12	Investment & Mortgages Bank Ltd	0.2399376	0	1	1	0
2015	12	Investment & Mortgages Bank Ltd	0.2303433	1	1	1	0
2006	14	Kenya Commercial Bank Ltd	0	0	0	0	0.3
2007	14	Kenya Commercial Bank Ltd	0	0	0	0	0.2
2008	14	Kenya Commercial Bank Ltd	0.2088942	0	0	0	0.1
2009	14	Kenya Commercial Bank Ltd	0.1825163	0	1	0	0.1
2010	14	Kenya Commercial Bank Ltd	0.1755798	1	1	0	0.1
2011	14	Kenya Commercial Bank Ltd	0	1	1	0	0.1
2012	14	Kenya Commercial Bank Ltd	0.2305672	1	1	1	0.1
2013	14	Kenya Commercial Bank Ltd	0.2298569	1	1	1	0.1
2014	14	Kenya Commercial Bank Ltd	0.233465	1	1	1	0.1
2015	14	Kenya Commercial Bank Ltd	0.2426007	1	1	1	0.1
2006	15	National Bank of Kenya Ltd	0	0	0	0	0.2
2007	15	National Bank of Kenya Ltd	0	0	0	0	0.1
2008	15	National Bank of Kenya Ltd	0.1997423	0	0	0	0.2
2009	15	National Bank of Kenya Ltd	0.1848761	1	0	0	0.1
2010	15	National Bank of Kenya Ltd	0.2035247	1	0	0	0.1
2011	15	National Bank of Kenya Ltd	0.1478577	1	1	0	0.1
2012	15	National Bank of Kenya Ltd	0.0697608	1	1	1	0.1
2013	15	National Bank of Kenya Ltd	0.0938555	1	1	1	0.1
2014	15	National Bank of Kenya Ltd	0.0718177	1	1	1	0.1
2015	15	National Bank of Kenya Ltd	-0.105644	1	1	1	0.1
2006	16	National Industrial Credit Bank Ltd	0.1505766	0	0	0	0
2007	16	National Industrial Credit Bank Ltd	0.157339	0	0	0	0.1
2008	16	National Industrial Credit Bank Ltd	0.1875565	0	0	0	0
2009	16	National Industrial Credit Bank Ltd	0.1686354	0	0	0	0
2010	16	National Industrial Credit Bank Ltd	0.2359422	1	0	0	0
2011	16	National Industrial Credit Bank Ltd	0.2734343	1	1	0	0
2012	16	National Industrial Credit Bank Ltd	0.2015267	1	1	1	0
2013	16	National Industrial Credit Bank Ltd	0.1835971	1	1	1	0
2014	16	National Industrial Credit Bank Ltd	0.181979	1	1	1	0
2015	16	National Industrial Credit Bank Ltd	0.1695396	1	1	1	0
2006	17	Oriental Commercial Bank Ltd	0	0	0	0	0.2

2007	17	Oriental Commercial Bank Ltd	0	0	0	0	0.2
2008	17	Oriental Commercial Bank Ltd	0	0	0	0	0.1
2009	17	Oriental Commercial Bank Ltd	0.0386965	0	0	0	0.1
2010	17	Oriental Commercial Bank Ltd	0.1370826	0	0	0	0.1
2011	17	Oriental Commercial Bank Ltd	0.1178295	1	1	0	0.1
2012	17	Oriental Commercial Bank Ltd	0.06787	1	1	1	0.1
2013	17	Oriental Commercial Bank Ltd	0.0918635	1	1	1	0
2014	17	Oriental Commercial Bank Ltd	0.0451128	1	1	1	0
2015	17	Oriental Commercial Bank Ltd	0.0191964	1	1	1	0
2006	18	Paramount-Universal Bank Ltd	0	0	0	0	0.1
2007	18	Paramount-Universal Bank Ltd	0	0	0	0	0.1
2008	18	Paramount-Universal Bank Ltd	0	0	0	0	0.2
2009	18	Paramount-Universal Bank Ltd	0	0	0	0	0.1
2010	18	Paramount-Universal Bank Ltd	0	0	0	0	0.1
2011	18	Paramount-Universal Bank Ltd	0	0	0	0	0.1
2012	18	Paramount-Universal Bank Ltd	0.096831	0	0	1	0.1
2013	18	Paramount-Universal Bank Ltd	0.0772358	1	1	1	0.2
2014	18	Paramount-Universal Bank Ltd	0.107402	1	1	1	0.1
2015	18	Paramount-Universal Bank Ltd	0.1028646	1	1	1	0.1
2006	19	Standard Chartered Bank Ltd	0.2623767	0	0	0	0.1
2007	19	Standard Chartered Bank Ltd	0.3207285	0	0	0	0.1
2008	19	Standard Chartered Bank Ltd	0.285338	0	0	0	0.1
2009	19	Standard Chartered Bank Ltd	0.3427247	0	0	0	0.1
2010	19	Standard Chartered Bank Ltd	0.2660069	0	1	0	0.1
2011	19	Standard Chartered Bank Ltd	0.2837003	0	1	0	0.1
2012	19	Standard Chartered Bank Ltd	0.263667	0	1	1	0.1
2013	19	Standard Chartered Bank Ltd	0.2570636	0	1	1	0.1
2014	19	Standard Chartered Bank Ltd	0.2579975	0	1	1	0.1
2015	19	Standard Chartered Bank Ltd	0.1550081	0	1	1	0.1
2006	20	Transnational Bank Ltd	0	0	0	0	0.2
2007	20	Transnational Bank Ltd	0	0	0	0	0.2
2008	20	Transnational Bank Ltd	0	0	0	0	0.1
2009	20	Transnational Bank Ltd	0.0679245	0	0	0	0.2
2010	20	Transnational Bank Ltd	0.092148	0	0	0	0.1
2011	20	Transnational Bank Ltd	0.1164659	0	0	0	0.1
2012	20	Transnational Bank Ltd	0.1161396	0	0	1	0.1
2013	20	Transnational Bank Ltd	0.0845372	0	0	1	0.1
2014	20	Transnational Bank Ltd	0.0668407	0	0	1	0.1
2015	20	Transnational Bank Ltd	0.0826365	0	0	1	0.1

Source: CBK; 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015

Table 4.9

Moderating Variables

Year	Id	Bank	GDP Growth	Forex rate	Inflation
2006	3	African Banking Corporation Ltd	14.45	72.101	6.472
2007	3	African Banking Corporation Ltd	9.759	67.318	6.871
2008	3	African Banking Corporation Ltd	26.24	69.175	0.232
2009	3	African Banking Corporation Ltd	9.234	77.352	3.307
2010	3	African Banking Corporation Ltd	3.961	79.233	8.402
2011	3	African Banking Corporation Ltd	14.02	88.811	6.112
2012	3	African Banking Corporation Ltd	9.378	84.53	4.555
2013	3	African Banking Corporation Ltd	5.718	86.123	5.694
2014	3	African Banking Corporation Ltd	6.877	87.922	5.332
2015	3	African Banking Corporation Ltd	6.582	98.179	5.649
2006	4	Bank of Africa Ltd	14.45	72.101	6.472
2007	4	Bank of Africa Ltd	9.759	67.318	6.871
2008	4	Bank of Africa Ltd	26.24	69.175	0.232
2009	4	Bank of Africa Ltd	9.234	77.352	3.307
2010	4	Bank of Africa Ltd	3.961	79.233	8.402
2011	4	Bank of Africa Ltd	14.02	88.811	6.112
2012	4	Bank of Africa Ltd	9.378	84.53	4.555
2013	4	Bank of Africa Ltd	5.718	86.123	5.694
2014	4	Bank of Africa Ltd	6.877	87.922	5.332
2015	4	Bank of Africa Ltd	6.582	98.179	5.649
2006	5	Bank of Baroda	14.45	72.101	6.472
2007	5	Bank of Baroda	9.759	67.318	6.871
2008	5	Bank of Baroda	26.24	69.175	0.232
2009	5	Bank of Baroda	9.234	77.352	3.307
2010	5	Bank of Baroda	3.961	79.233	8.402
2011	5	Bank of Baroda	14.02	88.811	6.112
2012	5	Bank of Baroda	9.378	84.53	4.555
2013	5	Bank of Baroda	5.718	86.123	5.694
2014	5	Bank of Baroda	6.877	87.922	5.332
2015	5	Bank of Baroda	6.582	98.179	5.649
2006	1	Barclays Bank of Kenya Ltd	14.45	72.101	6.472
2007	1	Barclays Bank of Kenya Ltd	9.759	67.318	6.871
2008	1	Barclays Bank of Kenya Ltd	26.24	69.175	0.232
2009	1	Barclays Bank of Kenya Ltd	9.234	77.352	3.307
2010	1	Barclays Bank of Kenya Ltd	3.961	79.233	8.402
2011	1	Barclays Bank of Kenya Ltd	14.02	88.811	6.112

2012	1	Barclays Bank of Kenya Ltd	9.378	84.53	4.555
2013	1	Barclays Bank of Kenya Ltd	5.718	86.123	5.694
2014	1	Barclays Bank of Kenya Ltd	6.877	87.922	5.332
2015	1	Barclays Bank of Kenya Ltd	6.582	98.179	5.649
2006	6	Commercial Bank of Africa Ltd	14.45	72.101	6.472
2007	6	Commercial Bank of Africa Ltd	9.759	67.318	6.871
2008	6	Commercial Bank of Africa Ltd	26.24	69.175	0.232
2009	6	Commercial Bank of Africa Ltd	9.234	77.352	3.307
2010	6	Commercial Bank of Africa Ltd	3.961	79.233	8.402
2011	6	Commercial Bank of Africa Ltd	14.02	88.811	6.112
2012	6	Commercial Bank of Africa Ltd	9.378	84.53	4.555
2013	6	Commercial Bank of Africa Ltd	5.718	86.123	5.694
2014	6	Commercial Bank of Africa Ltd	6.877	87.922	5.332
2015	6	Commercial Bank of Africa Ltd	6.582	98.179	5.649
2006	7	Consolidated Bank of Kenya Ltd	14.45	72.101	6.472
2007	7	Consolidated Bank of Kenya Ltd	9.759	67.318	6.871
2008	7	Consolidated Bank of Kenya Ltd	26.24	69.175	0.232
2009	7	Consolidated Bank of Kenya Ltd	9.234	77.352	3.307
2010	7	Consolidated Bank of Kenya Ltd	3.961	79.233	8.402
2011	7	Consolidated Bank of Kenya Ltd	14.02	88.811	6.112
2012	7	Consolidated Bank of Kenya Ltd	9.378	84.53	4.555
2013	7	Consolidated Bank of Kenya Ltd	5.718	86.123	5.694
2014	7	Consolidated Bank of Kenya Ltd	6.877	87.922	5.332
2015	7	Consolidated Bank of Kenya Ltd	6.582	98.179	5.649
2006	2	Cooperative Bank of Kenya Ltd	14.45	72.101	6.472
2007	2	Cooperative Bank of Kenya Ltd	9.759	67.318	6.871
2008	2	Cooperative Bank of Kenya Ltd	26.24	69.175	0.232
2009	2	Cooperative Bank of Kenya Ltd	9.234	77.352	3.307
2010	2	Cooperative Bank of Kenya Ltd	3.961	79.233	8.402
2011	2	Cooperative Bank of Kenya Ltd	14.02	88.811	6.112
2012	2	Cooperative Bank of Kenya Ltd	9.378	84.53	4.555
2013	2	Cooperative Bank of Kenya Ltd	5.718	86.123	5.694
2014	2	Cooperative Bank of Kenya Ltd	6.877	87.922	5.332
2015	2	Cooperative Bank of Kenya Ltd	6.582	98.179	5.649
2006	8	Diamond Trust Bank Kenya Ltd	14.45	72.101	6.472
2007	8	Diamond Trust Bank Kenya Ltd	9.759	67.318	6.871
2008	8	Diamond Trust Bank Kenya Ltd	26.24	69.175	0.232
2009	8	Diamond Trust Bank Kenya Ltd	9.234	77.352	3.307
2010	8	Diamond Trust Bank Kenya Ltd	3.961	79.233	8.402
2011	8	Diamond Trust Bank Kenya Ltd	14.02	88.811	6.112
2012	8	Diamond Trust Bank Kenya Ltd	9.378	84.53	4.555

2013	8	Diamond Trust Bank Kenya Ltd	5.718	86.123	5.694
2014	8	Diamond Trust Bank Kenya Ltd	6.877	87.922	5.332
2015	8	Diamond Trust Bank Kenya Ltd	6.582	98.179	5.649
2006	9	Equity Bank Ltd	14.45	72.101	6.472
2007	9	Equity Bank Ltd	9.759	67.318	6.871
2008	9	Equity Bank Ltd	26.24	69.175	0.232
2009	9	Equity Bank Ltd	9.234	77.352	3.307
2010	9	Equity Bank Ltd	3.961	79.233	8.402
2011	9	Equity Bank Ltd	14.02	88.811	6.112
2012	9	Equity Bank Ltd	9.378	84.53	4.555
2013	9	Equity Bank Ltd	5.718	86.123	5.694
2014	9	Equity Bank Ltd	6.877	87.922	5.332
2015	9	Equity Bank Ltd	6.582	98.179	5.649
2006	10	Family Bank Ltd	14.45	72.101	6.472
2007	10	Family Bank Ltd	9.759	67.318	6.871
2008	10	Family Bank Ltd	26.24	69.175	0.232
2009	10	Family Bank Ltd	9.234	77.352	3.307
2010	10	Family Bank Ltd	3.961	79.233	8.402
2011	10	Family Bank Ltd	14.02	88.811	6.112
2012	10	Family Bank Ltd	9.378	84.53	4.555
2013	10	Family Bank Ltd	5.718	86.123	5.694
2014	10	Family Bank Ltd	6.877	87.922	5.332
2015	10	Family Bank Ltd	6.582	98.179	5.649
2006	11	Giro Commercial Bank Ltd	14.45	72.101	6.472
2007	11	Giro Commercial Bank Ltd	9.759	67.318	6.871
2008	11	Giro Commercial Bank Ltd	26.24	69.175	0.232
2009	11	Giro Commercial Bank Ltd	9.234	77.352	3.307
2010	11	Giro Commercial Bank Ltd	3.961	79.233	8.402
2011	11	Giro Commercial Bank Ltd	14.02	88.811	6.112
2012	11	Giro Commercial Bank Ltd	9.378	84.53	4.555
2013	11	Giro Commercial Bank Ltd	5.718	86.123	5.694
2014	11	Giro Commercial Bank Ltd	6.877	87.922	5.332
2015	11	Giro Commercial Bank Ltd	6.582	98.179	5.649
2015	13	Imperial Bank Ltd	6.582	98.179	5.649
2006	13	Imperial Bank Ltd	14.45	72.101	6.472
2007	13	Imperial Bank Ltd	9.759	67.318	6.871
2008	13	Imperial Bank Ltd	26.24	69.175	0.232
2009	13	Imperial Bank Ltd	9.234	77.352	3.307
2010	13	Imperial Bank Ltd	3.961	79.233	8.402
2011	13	Imperial Bank Ltd	14.02	88.811	6.112
2012	13	Imperial Bank Ltd	9.378	84.53	4.555

2013	13	Imperial Bank Ltd	5.718	86.123	5.694
2014	13	Imperial Bank Ltd	6.877	87.922	5.332
2006	12	Investment & Mortgages Bank Ltd	14.45	72.101	6.472
2007	12	Investment & Mortgages Bank Ltd	9.759	67.318	6.871
2008	12	Investment & Mortgages Bank Ltd	26.24	69.175	0.232
2009	12	Investment & Mortgages Bank Ltd	9.234	77.352	3.307
2010	12	Investment & Mortgages Bank Ltd	3.961	79.233	8.402
2011	12	Investment & Mortgages Bank Ltd	14.02	88.811	6.112
2012	12	Investment & Mortgages Bank Ltd	9.378	84.53	4.555
2013	12	Investment & Mortgages Bank Ltd	5.718	86.123	5.694
2014	12	Investment & Mortgages Bank Ltd	6.877	87.922	5.332
2015	12	Investment & Mortgages Bank Ltd	6.582	98.179	5.649
2006	14	Kenya Commercial Bank Ltd	14.45	72.101	6.472
2007	14	Kenya Commercial Bank Ltd	9.759	67.318	6.871
2008	14	Kenya Commercial Bank Ltd	26.24	69.175	0.232
2009	14	Kenya Commercial Bank Ltd	9.234	77.352	3.307
2010	14	Kenya Commercial Bank Ltd	3.961	79.233	8.402
2011	14	Kenya Commercial Bank Ltd	14.02	88.811	6.112
2012	14	Kenya Commercial Bank Ltd	9.378	84.53	4.555
2013	14	Kenya Commercial Bank Ltd	5.718	86.123	5.694
2014	14	Kenya Commercial Bank Ltd	6.877	87.922	5.332
2015	14	Kenya Commercial Bank Ltd	6.582	98.179	5.649
2006	15	National Bank of Kenya Ltd	14.45	72.101	6.472
2007	15	National Bank of Kenya Ltd	9.759	67.318	6.871
2008	15	National Bank of Kenya Ltd	26.24	69.175	0.232
2009	15	National Bank of Kenya Ltd	9.234	77.352	3.307
2010	15	National Bank of Kenya Ltd	3.961	79.233	8.402
2011	15	National Bank of Kenya Ltd	14.02	88.811	6.112
2012	15	National Bank of Kenya Ltd	9.378	84.53	4.555
2013	15	National Bank of Kenya Ltd	5.718	86.123	5.694
2014	15	National Bank of Kenya Ltd	6.877	87.922	5.332
2015	15	National Bank of Kenya Ltd	6.582	98.179	5.649
2006	16	National Industrial Credit Bank Ltd	14.45	72.101	6.472
2007	16	National Industrial Credit Bank Ltd	9.759	67.318	6.871
2008	16	National Industrial Credit Bank Ltd	26.24	69.175	0.232
2009	16	National Industrial Credit Bank Ltd	9.234	77.352	3.307
2010	16	National Industrial Credit Bank Ltd	3.961	79.233	8.402
2011	16	National Industrial Credit Bank Ltd	14.02	88.811	6.112
2012	16	National Industrial Credit Bank Ltd	9.378	84.53	4.555
2013	16	National Industrial Credit Bank Ltd	5.718	86.123	5.694
2014	16	National Industrial Credit Bank Ltd	6.877	87.922	5.332

2015	16	National Industrial Credit Bank Ltd	6.582	98.179	5.649
2006	17	Oriental Commercial Bank Ltd	14.45	72.101	6.472
2007	17	Oriental Commercial Bank Ltd	9.759	67.318	6.871
2008	17	Oriental Commercial Bank Ltd	26.24	69.175	0.232
2009	17	Oriental Commercial Bank Ltd	9.234	77.352	3.307
2010	17	Oriental Commercial Bank Ltd	3.961	79.233	8.402
2011	17	Oriental Commercial Bank Ltd	14.02	88.811	6.112
2012	17	Oriental Commercial Bank Ltd	9.378	84.53	4.555
2013	17	Oriental Commercial Bank Ltd	5.718	86.123	5.694
2014	17	Oriental Commercial Bank Ltd	6.877	87.922	5.332
2015	17	Oriental Commercial Bank Ltd	6.582	98.179	5.649
2006	18	Paramount-Universal Bank Ltd	14.45	72.101	6.472
2007	18	Paramount-Universal Bank Ltd	9.759	67.318	6.871
2008	18	Paramount-Universal Bank Ltd	26.24	69.175	0.232
2009	18	Paramount-Universal Bank Ltd	9.234	77.352	3.307
2010	18	Paramount-Universal Bank Ltd	3.961	79.233	8.402
2011	18	Paramount-Universal Bank Ltd	14.02	88.811	6.112
2012	18	Paramount-Universal Bank Ltd	9.378	84.53	4.555
2013	18	Paramount-Universal Bank Ltd	5.718	86.123	5.694
2014	18	Paramount-Universal Bank Ltd	6.877	87.922	5.332
2015	18	Paramount-Universal Bank Ltd	6.582	98.179	5.649
2006	19	Standard Chartered Bank Ltd	14.45	72.101	6.472
2007	19	Standard Chartered Bank Ltd	9.759	67.318	6.871
2008	19	Standard Chartered Bank Ltd	26.24	69.175	0.232
2009	19	Standard Chartered Bank Ltd	9.234	77.352	3.307
2010	19	Standard Chartered Bank Ltd	3.961	79.233	8.402
2011	19	Standard Chartered Bank Ltd	14.02	88.811	6.112
2012	19	Standard Chartered Bank Ltd	9.378	84.53	4.555
2013	19	Standard Chartered Bank Ltd	5.718	86.123	5.694
2014	19	Standard Chartered Bank Ltd	6.877	87.922	5.332
2015	19	Standard Chartered Bank Ltd	6.582	98.179	5.649
2006	20	Transnational Bank Ltd	14.45	72.101	6.472
2007	20	Transnational Bank Ltd	9.759	67.318	6.871
2008	20	Transnational Bank Ltd	26.24	69.175	0.232
2009	20	Transnational Bank Ltd	9.234	77.352	3.307
2010	20	Transnational Bank Ltd	3.961	79.233	8.402
2011	20	Transnational Bank Ltd	14.02	88.811	6.112
2012	20	Transnational Bank Ltd	9.378	84.53	4.555
2013	20	Transnational Bank Ltd	5.718	86.123	5.694
2014	20	Transnational Bank Ltd	6.877	87.922	5.332
2015	20	Transnational Bank Ltd	6.582	98.179	5.649

Table 4.10

Agency Banking Variables

Year	Id	Bank	Operating Expense	Growth in None int. Income	Liquidity
2006	3	African Banking Corporation Ltd	0	0	0
2007	3	African Banking Corporation Ltd	0	0	0
2008	3	African Banking Corporation Ltd	0	0	0
2009	3	African Banking Corporation Ltd	0	0	0
2010	3	African Banking Corporation Ltd	1.78338279	0	0.46917
2011	3	African Banking Corporation Ltd	1.92972973	1.092166	0.37761
2012	3	African Banking Corporation Ltd	2.2152231	1.033755	0.53124
2013	3	African Banking Corporation Ltd	2.54524887	1.055102	0.47664
2014	3	African Banking Corporation Ltd	5.25650558	1.030948	0.41327
2015	3	African Banking Corporation Ltd	4.68275862	0.868668	0.36351
2006	4	Bank of Africa Ltd	6.86538462	0	0.19996
2007	4	Bank of Africa Ltd	3.6173913	1.607692	0.22234
2008	4	Bank of Africa Ltd	4.77981651	2.76555	0.60476
2009	4	Bank of Africa Ltd	4.79522184	1.306228	0.57525
2010	4	Bank of Africa Ltd	3.74082073	1.170861	0.67939
2011	4	Bank of Africa Ltd	3.96880416	1.222851	0.63754
2012	4	Bank of Africa Ltd	4.13817664	1.142461	0.26672
2013	4	Bank of Africa Ltd	7.75917431	1.165992	0.342
2014	4	Bank of Africa Ltd	15.9939394	0.616667	0.30772
2015	4	Bank of Africa Ltd	-2.0543402	1.263514	0.41686
2006	5	Bank of Baroda	0	0	0
2007	5	Bank of Baroda	0	0	0
2008	5	Bank of Baroda	0	0	0
2009	5	Bank of Baroda	0	0	0
2010	5	Bank of Baroda	0	0	0
2011	5	Bank of Baroda	0.42479824	0	0.52429
2012	5	Bank of Baroda	0.5755814	1.887574	0.59788
2013	5	Bank of Baroda	0.36439431	0.862069	0.63636
2014	5	Bank of Baroda	0.38402527	0.927273	0.64708
2015	5	Bank of Baroda	0.47384008	1.329412	0.66982
2006	1	Barclays Bank of Kenya Ltd	1.72907391	0	0.39806
2007	1	Barclays Bank of Kenya Ltd	2.25967413	1.208825	0.33452
2008	1	Barclays Bank of Kenya Ltd	2.57808564	1.285867	0.33187
2009	1	Barclays Bank of Kenya Ltd	2.27910031	0.897057	0.42593
2010	1	Barclays Bank of Kenya Ltd	1.32550241	1.199838	0.55826
2011	1	Barclays Bank of Kenya Ltd	1.66880316	0.96638	0.40103

2012	1	Barclays Bank of Kenya Ltd	1.63139229	0.927622	0.46421
2013	1	Barclays Bank of Kenya Ltd	2.04184704	0.976614	0.42658
2014	1	Barclays Bank of Kenya Ltd	1.739597	0.958287	0.49656
2015	1	Barclays Bank of Kenya Ltd	1.85954053	1.042262	0.40069
2006	6	Commercial Bank of Africa Ltd	0	0	0
2007	6	Commercial Bank of Africa Ltd	0	0	0
2008	6	Commercial Bank of Africa Ltd	0	0	0
2009	6	Commercial Bank of Africa Ltd	0	0	0
2010	6	Commercial Bank of Africa Ltd	0	0	0
2011	6	Commercial Bank of Africa Ltd	2.34350688	0	0.34878
2012	6	Commercial Bank of Africa Ltd	1.43611912	1.205258	0.51769
2013	6	Commercial Bank of Africa Ltd	1.74956772	1.219519	0.14074
2014	6	Commercial Bank of Africa Ltd	2.51300236	1.195139	0.11159
2015	6	Commercial Bank of Africa Ltd	0	0	0
2006	7	Consolidated Bank of Kenya Ltd	26.8125	0	0.39626
2007	7	Consolidated Bank of Kenya Ltd	19.88	1.277311	0.36443
2008	7	Consolidated Bank of Kenya Ltd	5.75	1.095395	0.30924
2009	7	Consolidated Bank of Kenya Ltd	8.6125	1.183183	0.4533
2010	7	Consolidated Bank of Kenya Ltd	5.0755814	1.593909	0.37413
2011	7	Consolidated Bank of Kenya Ltd	7.77852349	0.990446	0.38326
2012	7	Consolidated Bank of Kenya Ltd	8.48201439	0.948553	0.48585
2013	7	Consolidated Bank of Kenya Ltd	-11.504587	0.752542	0.37614
2014	7	Consolidated Bank of Kenya Ltd	-4.2953737	1.051802	0.41261
2015	7	Consolidated Bank of Kenya Ltd	0	0	0
2006	2	Cooperative Bank of Kenya Ltd	4.88581315	0	0.47864
2007	2	Cooperative Bank of Kenya Ltd	3.3916129	0.957518	0.39299
2008	2	Cooperative Bank of Kenya Ltd	2.48020219	1.154116	0.3667
2009	2	Cooperative Bank of Kenya Ltd	2.4777628	1.179565	0.42897
2010	2	Cooperative Bank of Kenya Ltd	2.01550218	1.32247	0.4269
2011	2	Cooperative Bank of Kenya Ltd	2.12765561	1.045882	0.30345
2012	2	Cooperative Bank of Kenya Ltd	1.70520456	1.58115	0.39529
2013	2	Cooperative Bank of Kenya Ltd	1.82312253	1.178529	0.39698
2014	2	Cooperative Bank of Kenya Ltd	2.52838428	1.077365	0.38427
2015	2	Cooperative Bank of Kenya Ltd	1.65487784	1.282295	0.41153
2006	8	Diamond Trust Bank Kenya Ltd	0	0	0
2007	8	Diamond Trust Bank Kenya Ltd	0	0	0
2008	8	Diamond Trust Bank Kenya Ltd	0	0	0
2009	8	Diamond Trust Bank Kenya Ltd	2.03988183	0	0.58411
2010	8	Diamond Trust Bank Kenya Ltd	1.47904915	1.856589	0.62075
2011	8	Diamond Trust Bank Kenya Ltd	1.52970628	0.954767	0.53841
2012	8	Diamond Trust Bank Kenya Ltd	1.27563314	1.120262	0.57894

2013	8	Diamond Trust Bank Kenya Ltd	1.18967495	1.08946	0.55437
2014	8	Diamond Trust Bank Kenya Ltd	1.26068676	1.127501	0.63697
2015	8	Diamond Trust Bank Kenya Ltd	1.23821791	1.243909	0.65996
2006	9	Equity Bank Ltd	0	0	0
2007	9	Equity Bank Ltd	0	0	0
2008	9	Equity Bank Ltd	0	0	0
2009	9	Equity Bank Ltd	0	0	0
2010	9	Equity Bank Ltd	1.47497207	0	0.2304
2011	9	Equity Bank Ltd	1.26114047	1.19247	0.315
2012	9	Equity Bank Ltd	1.13508813	1.033422	0.21545
2013	9	Equity Bank Ltd	1.18590078	1.1949	0.15628
2014	9	Equity Bank Ltd	1.23699531	1.201952	0.13839
2015	9	Equity Bank Ltd	1.34006762	1.187561	0.20778
2006	10	Family Bank Ltd	0	0	0
2007	10	Family Bank Ltd	0	0	0
2008	10	Family Bank Ltd	1.92896175	0	0.43922
2009	10	Family Bank Ltd	3.72272727	1.001289	0.3387
2010	10	Family Bank Ltd	6.25	1.863578	0.4575
2011	10	Family Bank Ltd	7.98351648	0.974448	0.29882
2012	10	Family Bank Ltd	5.73083779	1.019135	0.37885
2013	10	Family Bank Ltd	3.37028112	1.2879	0.35216
2014	10	Family Bank Ltd	2.74018795	4.326134	0.40184
2015	10	Family Bank Ltd	3.13168517	1.170245	0.29888
2006	11	Giro Commercial Bank Ltd	0	0	0
2007	11	Giro Commercial Bank Ltd	0	0	0
2008	11	Giro Commercial Bank Ltd	0	0	0
2009	11	Giro Commercial Bank Ltd	2.17567568	0	0.51439
2010	11	Giro Commercial Bank Ltd	0.74074074	3.993711	0.61086
2011	11	Giro Commercial Bank Ltd	1.30232558	0.236221	0.50958
2012	11	Giro Commercial Bank Ltd	1.79646018	0.846667	0.61008
2013	11	Giro Commercial Bank Ltd	1.16931217	0.874016	0.55172
2014	11	Giro Commercial Bank Ltd	1.14177215	1.684685	0.56453
2015	11	Giro Commercial Bank Ltd	1.04646018	0.73262	0.4818
2015	13	Imperial Bank Ltd	0	0	0
2006	13	Imperial Bank Ltd	2.25367647	0	0.49435
2007	13	Imperial Bank Ltd	2.21808511	1.727599	0.48498
2008	13	Imperial Bank Ltd	1.95698925	0.96888	0.44459
2009	13	Imperial Bank Ltd	1.85045045	1.117773	0.42689
2010	13	Imperial Bank Ltd	0	1.64751	0.5707
2011	13	Imperial Bank Ltd	0	1.034884	0.54222
2012	13	Imperial Bank Ltd	0	1.286517	0.55292

2013	13	Imperial Bank Ltd	0	0	0
2014	13	Imperial Bank Ltd	0	0	0
2006	12	Investment & Mortgages Bank Ltd	0.84188034	0	0.28804
2007	12	Investment & Mortgages Bank Ltd	0.82071097	1.344398	0.2871
2008	12	Investment & Mortgages Bank Ltd	1.54594017	2.824074	0.24507
2009	12	Investment & Mortgages Bank Ltd	1.26784282	0.551913	0.58812
2010	12	Investment & Mortgages Bank Ltd	0.8526149	2.124753	0.7036
2011	12	Investment & Mortgages Bank Ltd	0.79349078	1.116496	0.29691
2012	12	Investment & Mortgages Bank Ltd	1.00024278	1.398998	0.31287
2013	12	Investment & Mortgages Bank Ltd	0.9361574	1.025358	0.47126
2014	12	Investment & Mortgages Bank Ltd	0.75659152	0.871691	0.5272
2015	12	Investment & Mortgages Bank Ltd	0.83272546	1.151202	0.40473
2006	14	Kenya Commercial Bank Ltd	0	0	0
2007	14	Kenya Commercial Bank Ltd	0	0	0
2008	14	Kenya Commercial Bank Ltd	2.86539379	0	0.57629
2009	14	Kenya Commercial Bank Ltd	3.80993151	1.061814	0.23249
2010	14	Kenya Commercial Bank Ltd	2.9069249	1.355815	0
2011	14	Kenya Commercial Bank Ltd	0	1.45443	0.27252
2012	14	Kenya Commercial Bank Ltd	2.38039826	0.97491	0.34658
2013	14	Kenya Commercial Bank Ltd	2.09092811	0.952497	0.37858
2014	14	Kenya Commercial Bank Ltd	2.02765907	1.478761	0
2015	14	Kenya Commercial Bank Ltd	1.78484432	1.01209	0
2006	15	National Bank of Kenya Ltd	0	0	0
2007	15	National Bank of Kenya Ltd	0	0	0
2008	15	National Bank of Kenya Ltd	2.34193548	0	0.87027
2009	15	National Bank of Kenya Ltd	2.34815321	1.144217	0.84896
2010	15	National Bank of Kenya Ltd	1.99851559	1.136855	0.76167
2011	15	National Bank of Kenya Ltd	3.01293661	0.993048	0.6281
2012	15	National Bank of Kenya Ltd	7.8696845	1.044584	0.60347
2013	15	National Bank of Kenya Ltd	5.75089928	1.00776	0.57933
2014	15	National Bank of Kenya Ltd	8.01954023	1.097655	0.4709
2015	15	National Bank of Kenya Ltd	-6.481353	1.006696	0.4319
2006	16	National Industrial Credit Bank Ltd	2.53610503	0	0
2007	16	National Industrial Credit Bank Ltd	1.64563758	1.429126	0.32524
2008	16	National Industrial Credit Bank Ltd	1.43201543	1.561141	0.32116
2009	16	National Industrial Credit Bank Ltd	1.70506912	1.24195	0.35752
2010	16	National Industrial Credit Bank Ltd	1.22812668	1.271198	0.36284
2011	16	National Industrial Credit Bank Ltd	1.0118212	1.280595	0.30823
2012	16	National Industrial Credit Bank Ltd	1.15283267	1.219113	0.42789
2013	16	National Industrial Credit Bank Ltd	1.33456905	1.114054	0.39176
2014	16	National Industrial Credit Bank Ltd	1.20165209	1.111886	0.4207

2015	16	National Industrial Credit Bank Ltd	1.25930881	1.127423	0.42185
2006	17	Oriental Commercial Bank Ltd	0	0	0
2007	17	Oriental Commercial Bank Ltd	0	0	0
2008	17	Oriental Commercial Bank Ltd	0	0	0
2009	17	Oriental Commercial Bank Ltd	4.13157895	0	0.30567
2010	17	Oriental Commercial Bank Ltd	1.44871795	17.3	0.24464
2011	17	Oriental Commercial Bank Ltd	1.60526316	0.872832	0.20303
2012	17	Oriental Commercial Bank Ltd	2.56382979	0.615894	0.24241
2013	17	Oriental Commercial Bank Ltd	2.17142857	0.849462	0.24437
2014	17	Oriental Commercial Bank Ltd	5.41666667	1.075949	0.1653
2015	17	Oriental Commercial Bank Ltd	10.7209302	0.988235	0.21148
2006	18	Paramount-Universal Bank Ltd	0	0	0
2007	18	Paramount-Universal Bank Ltd	0	0	0
2008	18	Paramount-Universal Bank Ltd	0	0	0
2009	18	Paramount-Universal Bank Ltd	0	0	0
2010	18	Paramount-Universal Bank Ltd	0	0	0
2011	18	Paramount-Universal Bank Ltd	0	0	0
2012	18	Paramount-Universal Bank Ltd	1.97272727	0	0.66732
2013	18	Paramount-Universal Bank Ltd	2.4	0.196891	0.65157
2014	18	Paramount-Universal Bank Ltd	1.93243243	3.184211	0.68812
2015	18	Paramount-Universal Bank Ltd	2.09493671	-0.363636	0.53428
2006	19	Standard Chartered Bank Ltd	1.37319666	0	0
2007	19	Standard Chartered Bank Ltd	1.27788988	0	0
2008	19	Standard Chartered Bank Ltd	1.54584615	0	0.11697
2009	19	Standard Chartered Bank Ltd	1.06572274	1.159972	0.11588
2010	19	Standard Chartered Bank Ltd	1.0952381	1.178855	0.11424
2011	19	Standard Chartered Bank Ltd	1.24143249	1.04752	0.09848
2012	19	Standard Chartered Bank Ltd	1.04077333	1.143022	0.11735
2013	19	Standard Chartered Bank Ltd	1.00183546	1.012556	0.1068
2014	19	Standard Chartered Bank Ltd	0.97671522	1.181015	0.11981
2015	19	Standard Chartered Bank Ltd	1.74424472	0.870384	0.11596
2006	20	Transnational Bank Ltd	0	0	0
2007	20	Transnational Bank Ltd	0	0	0
2008	20	Transnational Bank Ltd	0	0	0
2009	20	Transnational Bank Ltd	4.02222222	0	0.74906
2010	20	Transnational Bank Ltd	3.08450704	2.080537	0.42147
2011	20	Transnational Bank Ltd	2.37438424	0.996774	0.69771
2012	20	Transnational Bank Ltd	2.78403756	1.343042	0.65111
2013	20	Transnational Bank Ltd	4.31012658	0.518072	0.54964
2014	20	Transnational Bank Ltd	5.3125	0.860465	0.46556
2015	20	Transnational Bank Ltd	4.51190476	1.216216	0.42276

Table 4.11

Mobile Banking Variables

Year	Id	Bank	Labour Productivity	Interest Spreads	Growth in Dep
2006	3	African Banking Corporation Ltd	0	0	0
2007	3	African Banking Corporation Ltd	0	0	1.245773
2008	3	African Banking Corporation Ltd	0	0	1.055271
2009	3	African Banking Corporation Ltd	0	0	1.343523
2010	3	African Banking Corporation Ltd	5.206294	0.088197	1.158851
2011	3	African Banking Corporation Ltd	4.974286	0	1.253562
2012	3	African Banking Corporation Ltd	5.912017	0.134747	1.456881
2013	3	African Banking Corporation Ltd	5.021381	0.139777	1.042609
2014	3	African Banking Corporation Ltd	4.558659	0.115398	1.009117
2015	3	African Banking Corporation Ltd	5.018978	0.092923	0.982804
2006	4	Bank of Africa Ltd	3.662338	0.077548	0
2007	4	Bank of Africa Ltd	4.10929	0.080743	1.118922
2008	4	Bank of Africa Ltd	4.047817	0.063535	1.575412
2009	4	Bank of Africa Ltd	4.218612	0.07112	1.425698
2010	4	Bank of Africa Ltd	4.65404	0.077867	1.594841
2011	4	Bank of Africa Ltd	5.216396	0.052025	1.212394
2012	4	Bank of Africa Ltd	6.594656	0.114864	1.463354
2013	4	Bank of Africa Ltd	5.200378	0.079147	1.046724
2014	4	Bank of Africa Ltd	5.575214	0.070737	1.134213
2015	4	Bank of Africa Ltd	6.205405	0.103653	1.139593
2006	5	Bank of Baroda	0	0	0
2007	5	Bank of Baroda	0	0	1.252025
2008	5	Bank of Baroda	0	0	1.196638
2009	5	Bank of Baroda	0	0	1.22875
2010	5	Bank of Baroda	0	0	1.373833
2011	5	Bank of Baroda	14.41549	0.150868	1.182188
2012	5	Bank of Baroda	16.19792	0.171401	1.268239
2013	5	Bank of Baroda	16.8254	0.185462	1.091058
2014	5	Bank of Baroda	17.14078	0.169308	1.162524
2015	5	Bank of Baroda	16.76533	0.171348	1.087217
2006	1	Barclays Bank of Kenya Ltd	5.39273	0.11709	0
2007	1	Barclays Bank of Kenya Ltd	4.628014	0.104811	1.162622
2008	1	Barclays Bank of Kenya Ltd	3.863963	0.132834	1.160087
2009	1	Barclays Bank of Kenya Ltd	3.619549	0.164416	0.994524
2010	1	Barclays Bank of Kenya Ltd	3.272446	0.182139	0.983769
2011	1	Barclays Bank of Kenya Ltd	3.761399	0.161673	1.003077
2012	1	Barclays Bank of Kenya Ltd	3.880215	0.175696	1.110364
2013	1	Barclays Bank of Kenya Ltd	3.741558	0.159153	1.095784
2014	1	Barclays Bank of Kenya Ltd	3.904321	0.157564	1.088529
2015	1	Barclays Bank of Kenya Ltd	3.690166	0.13923	1.00352
2006	6	Commercial Bank of Africa Ltd	0	0	0
2007	6	Commercial Bank of Africa Ltd	0	0	1.025986
2008	6	Commercial Bank of Africa Ltd	0	0	1.250375
2009	6	Commercial Bank of Africa Ltd	0	0	1.061321
2010	6	Commercial Bank of Africa Ltd	0	0	1.201522
2011	6	Commercial Bank of Africa Ltd	5.345232	0.102931	1.265213
2012	6	Commercial Bank of Africa Ltd	6.70569	0.134616	1.188595
2013	6	Commercial Bank of Africa Ltd	6.461753	0.112466	1.137469
2014	6	Commercial Bank of Africa Ltd	7.425611	0.084898	1.341246
2015	6	Commercial Bank of Africa Ltd	0	0	1.217077
2006	7	Consolidated Bank of Kenya Ltd	3.184524	0.165855	0

2007	7	Consolidated Bank of Kenya Ltd	3.29902	0.146477	1.157531
2008	7	Consolidated Bank of Kenya Ltd	4.252688	0.139098	1.150123
2009	7	Consolidated Bank of Kenya Ltd	3.238994	0.139641	1.488869
2010	7	Consolidated Bank of Kenya Ltd	3.7875	0.113468	1.640311
2011	7	Consolidated Bank of Kenya Ltd	3.831597	0.112389	1.49975
2012	7	Consolidated Bank of Kenya Ltd	5.385643	0.133706	1.109492
2013	7	Consolidated Bank of Kenya Ltd	4.377953	0.107524	0.878874
2014	7	Consolidated Bank of Kenya Ltd	3.914596	0.115753	0.908718
2015	7	Consolidated Bank of Kenya Ltd	0	0	0.939297
2006	2	Cooperative Bank of Kenya Ltd	4.184293	0.077383	0
2007	2	Cooperative Bank of Kenya Ltd	3.837816	0.111026	1.11367
2008	2	Cooperative Bank of Kenya Ltd	3.871725	0.097149	1.195042
2009	2	Cooperative Bank of Kenya Ltd	3.645161	0.115526	1.37776
2010	2	Cooperative Bank of Kenya Ltd	4.075006	0.113055	1.3966
2011	2	Cooperative Bank of Kenya Ltd	4.229541	0.031086	1.118304
2012	2	Cooperative Bank of Kenya Ltd	5.319882	0.126326	1.128949
2013	2	Cooperative Bank of Kenya Ltd	1.737801	-0.01926	1.108723
2014	2	Cooperative Bank of Kenya Ltd	4.106441	0.111361	1.220972
2015	2	Cooperative Bank of Kenya Ltd	5.598409	0.104134	1.217162
2006	8	Diamond Trust Bank Kenya Ltd	0	0	0
2007	8	Diamond Trust Bank Kenya Ltd	0	0	1.459345
2008	8	Diamond Trust Bank Kenya Ltd	0	0	1.339219
2009	8	Diamond Trust Bank Kenya Ltd	6.049094	0.074707	1.10967
2010	8	Diamond Trust Bank Kenya Ltd	5.78745	0.088409	1.237911
2011	8	Diamond Trust Bank Kenya Ltd	35.02192	0.087023	1.329993
2012	8	Diamond Trust Bank Kenya Ltd	46.79286	0.087903	1.214042
2013	8	Diamond Trust Bank Kenya Ltd	7.560957	0.083638	1.167809
2014	8	Diamond Trust Bank Kenya Ltd	8.359061	0.074691	1.199854
2015	8	Diamond Trust Bank Kenya Ltd	9.111045	0.067052	1.242485
2006	9	Equity Bank Ltd	0	0	0
2007	9	Equity Bank Ltd	0	0	1.930342
2008	9	Equity Bank Ltd	0	0	1.553051
2009	9	Equity Bank Ltd	0	0	1.343998
2010	9	Equity Bank Ltd	4.624331	0.154275	1.44632
2011	9	Equity Bank Ltd	5.308283	0.14431	1.27877
2012	9	Equity Bank Ltd	6.117565	0.178267	1.152303
2013	9	Equity Bank Ltd	5.237035	0.152033	1.130027
2014	9	Equity Bank Ltd	4.996752	0.134551	1.27729
2015	9	Equity Bank Ltd	6.354387	0.121573	1.168531
2006	10	Family Bank Ltd	0	0	0
2007	10	Family Bank Ltd	0	0	0
2008	10	Family Bank Ltd	3.166414	0.204459	1.229084
2009	10	Family Bank Ltd	3.161376	0.191192	1.416802
2010	10	Family Bank Ltd	3.765766	0.16981	1.499619
2011	10	Family Bank Ltd	3.826439	0.151287	1.363168
2012	10	Family Bank Ltd	4.578482	0.206986	1.148573
2013	10	Family Bank Ltd	4.091993	0.165517	1.4054
2014	10	Family Bank Ltd	6.570994	0.15072	1.363166
2015	10	Family Bank Ltd	7.351515	0.121716	1.329441
2006	11	Giro Commercial Bank Ltd	0	0	0
2007	11	Giro Commercial Bank Ltd	0	0	1.093924
2008	11	Giro Commercial Bank Ltd	0	0	1.043133
2009	11	Giro Commercial Bank Ltd	4.954023	0.133719	1.159157
2010	11	Giro Commercial Bank Ltd	7.573604	0.119684	1.397947
2011	11	Giro Commercial Bank Ltd	6.512195	0.123653	1.211964
2012	11	Giro Commercial Bank Ltd	8.232558	0.18647	1.034859

2013	11	Giro Commercial Bank Ltd	6.741667	0.148327	1.09952
2014	11	Giro Commercial Bank Ltd	7.019841	0.135717	1.086759
2015	11	Giro Commercial Bank Ltd	7.453184	0.118996	1.02819
2015	13	Imperial Bank Ltd	0	0	0
2006	13	Imperial Bank Ltd	0	0	0
2007	13	Imperial Bank Ltd	0	0	1.214023
2008	13	Imperial Bank Ltd	7.126237	0	1.212622
2009	13	Imperial Bank Ltd	6.140115	0	1.178222
2010	13	Imperial Bank Ltd	0	0.182593	1.114751
2011	13	Imperial Bank Ltd	6.458537	0.188672	1.407004
2012	13	Imperial Bank Ltd	8.456933	0.185085	1.433151
2013	13	Imperial Bank Ltd	0	0	1.235089
2014	13	Imperial Bank Ltd	0	0	1.38406
2006	12	Investment & Mortgages Bank Ltd	7.520349	0.095757	0
2007	12	Investment & Mortgages Bank Ltd	7.534216	0.099167	1.296707
2008	12	Investment & Mortgages Bank Ltd	8.149929	-0.006613	1.200161
2009	12	Investment & Mortgages Bank Ltd	6.790412	0.091755	1.227262
2010	12	Investment & Mortgages Bank Ltd	7.321907	0.071124	1.321733
2011	12	Investment & Mortgages Bank Ltd	7.700135	0.075179	1.238048
2012	12	Investment & Mortgages Bank Ltd	8.085236	0.046017	1.152711
2013	12	Investment & Mortgages Bank Ltd	7.35468	0.082476	1.134887
2014	12	Investment & Mortgages Bank Ltd	9.0507	0.078179	1.162792
2015	12	Investment & Mortgages Bank Ltd	9.383678	0.087759	1.197643
2006	14	Kenya Commercial Bank Ltd	0	0	0
2007	14	Kenya Commercial Bank Ltd	0	0	1.197818
2008	14	Kenya Commercial Bank Ltd	3.749707	0.130625	1.282667
2009	14	Kenya Commercial Bank Ltd	3.649636	0.123626	1.256024
2010	14	Kenya Commercial Bank Ltd	0	0.134796	1.182803
2011	14	Kenya Commercial Bank Ltd	4.09106	0.121457	1.287918
2012	14	Kenya Commercial Bank Ltd	4.949161	0.147856	1.063371
2013	14	Kenya Commercial Bank Ltd	4.194149	0.14636	1.061389
2014	14	Kenya Commercial Bank Ltd	4.965054	0.125672	1.166673
2015	14	Kenya Commercial Bank Ltd	5.141019	0.113827	1.256376
2006	15	National Bank of Kenya Ltd	0	0	0
2007	15	National Bank of Kenya Ltd	0	0	1.212403
2008	15	National Bank of Kenya Ltd	3.474897	0.398619	0.987213
2009	15	National Bank of Kenya Ltd	3.468781	0.313477	1.22513
2010	15	National Bank of Kenya Ltd	3.602383	0.237909	1.121205
2011	15	National Bank of Kenya Ltd	3.480455	0.205792	1.2048
2012	15	National Bank of Kenya Ltd	3.622186	0.231172	0.972906
2013	15	National Bank of Kenya Ltd	3.087395	0.173964	1.413147
2014	15	National Bank of Kenya Ltd	3.766131	0.125735	1.342864
2015	15	National Bank of Kenya Ltd	4.326032	0.127758	1.056219
2006	16	National Industrial Credit Bank	0	0.101277	0
2007	16	National Industrial Credit Bank	5.347958	0.079307	1.128674
2008	16	National Industrial Credit Bank	6.02214	0.07594	1.420543
2009	16	National Industrial Credit Bank	5.681553	0.081723	1.04935
2010	16	National Industrial Credit Bank	5.3542	0.08724	1.225573
2011	16	National Industrial Credit Bank	5.728411	0.079483	1.368308
2012	16	National Industrial Credit Bank	7.229019	0.083054	1.24927
2013	16	National Industrial Credit Bank	6.251373	0.087511	1.087393
2014	16	National Industrial Credit Bank	6.726172	0.074768	1.10156
2015	16	National Industrial Credit Bank	6.845903	0.079271	1.133666
2006	17	Oriental Commercial Bank Ltd	0	0	0
2007	17	Oriental Commercial Bank Ltd	0	0	1.122783
2008	17	Oriental Commercial Bank Ltd	0	0	1.596598

2009	17	Oriental Commercial Bank Ltd	2.885714	0.077775	1.531202
2010	17	Oriental Commercial Bank Ltd	5.693182	0.07509	1.62326
2011	17	Oriental Commercial Bank Ltd	6.171717	0.092665	1.131047
2012	17	Oriental Commercial Bank Ltd	8.212389	0.122663	1.301029
2013	17	Oriental Commercial Bank Ltd	6.828358	0.126659	1.11881
2014	17	Oriental Commercial Bank Ltd	6.602564	0.115005	1.158825
2015	17	Oriental Commercial Bank Ltd	7.041916	0.099964	0.997914
2006	18	Paramount-Universal Bank Ltd	0	0	0
2007	18	Paramount-Universal Bank Ltd	0	0	1.074499
2008	18	Paramount-Universal Bank Ltd	0	0	1.1248
2009	18	Paramount-Universal Bank Ltd	0	0	1.207681
2010	18	Paramount-Universal Bank Ltd	0	0	1.398508
2011	18	Paramount-Universal Bank Ltd	0	0	1.031443
2012	18	Paramount-Universal Bank Ltd	12.62319	0.156148	1.655961
2013	18	Paramount-Universal Bank Ltd	13.7027	0.197395	1.084977
2014	18	Paramount-Universal Bank Ltd	11.73196	0.144076	1.219209
2015	18	Paramount-Universal Bank Ltd	10.62295	0.131054	1.002361
2006	19	Standard Chartered Bank Ltd	0	0	0
2007	19	Standard Chartered Bank Ltd	0	0	1.138134
2008	19	Standard Chartered Bank Ltd	3.89493	0.145581	1.0414
2009	19	Standard Chartered Bank Ltd	5.019718	0.137947	1.12843
2010	19	Standard Chartered Bank Ltd	4.58574	0.142184	1.158227
2011	19	Standard Chartered Bank Ltd	4.837527	0.105645	1.217096
2012	19	Standard Chartered Bank Ltd	5.657991	0.129078	1.148803
2013	19	Standard Chartered Bank Ltd	5.603063	0.129995	1.101014
2014	19	Standard Chartered Bank Ltd	5.206867	0.143355	0.99578
2015	19	Standard Chartered Bank Ltd	4.795754	0.154091	1.116631
2006	20	Transnational Bank Ltd	0	0	0
2007	20	Transnational Bank Ltd	0	0	1.424051
2008	20	Transnational Bank Ltd	0	0	1.050556
2009	20	Transnational Bank Ltd	2.787129	0.170432	0.98202
2010	20	Transnational Bank Ltd	3.351111	0.175731	1.635433
2011	20	Transnational Bank Ltd	3.851145	0.179808	1.739546
2012	20	Transnational Bank Ltd	4.530745	0.166162	1.236987
2013	20	Transnational Bank Ltd	3.948641	0.157419	1.098852
2014	20	Transnational Bank Ltd	4.125356	0.146918	1.067539
2015	20	Transnational Bank Ltd	4.550409	0.140413	0.990477

Source: CBK; 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015

Table 4.12

Credit Referencing Variables

Year	Id	Bank	Solvency	NPL	Asset Growth
2006	3	African Banking Corporation Ltd	0	0	0
2007	3	African Banking Corporation Ltd	0	0	0
2008	3	African Banking Corporation Ltd	0	0	0
2009	3	African Banking Corporation Ltd	0	0	0
2010	3	African Banking Corporation Ltd	5.29982	0.00498	0.004983
2011	3	African Banking Corporation Ltd	6.34136	0	0
2012	3	African Banking Corporation Ltd	8.20928	0.00306	0.003059
2013	3	African Banking Corporation Ltd	7.28857	0.00426	0.004264
2014	3	African Banking Corporation Ltd	7.32939	0.01184	0.011842
2015	3	African Banking Corporation Ltd	6.90412	0.00575	0.005755
2006	4	Bank of Africa Ltd	5.63293	0	0
2007	4	Bank of Africa Ltd	5.06255	0.0024	0.002402
2008	4	Bank of Africa Ltd	9.94946	0.00489	0.004885
2009	4	Bank of Africa Ltd	8.87694	0.00328	0.003278
2010	4	Bank of Africa Ltd	11.1318	0.00547	0.005471
2011	4	Bank of Africa Ltd	10.1019	0.00574	0.005737
2012	4	Bank of Africa Ltd	9.42655	0.00253	0.002535
2013	4	Bank of Africa Ltd	9.02003	0.00345	0.003453
2014	4	Bank of Africa Ltd	6.86187	0.01458	0.014585
2015	4	Bank of Africa Ltd	7.15443	0.07349	0.073494
2006	5	Bank of Baroda	0	0	0
2007	5	Bank of Baroda	0	0	0
2008	5	Bank of Baroda	0	0	0
2009	5	Bank of Baroda	0	0	0
2010	5	Bank of Baroda	0	0	0
2011	5	Bank of Baroda	6.43517	0.01039	0.010395
2012	5	Bank of Baroda	7.01268	0.00036	0.000365
2013	5	Bank of Baroda	5.8729	0.00301	0.003011
2014	5	Bank of Baroda	5.2779	0.00299	0.002994
2015	5	Bank of Baroda	5.04781	0.01938	0.019376
2006	1	Barclays Bank of Kenya Ltd	6.92101	0.01124	0.011236
2007	1	Barclays Bank of Kenya Ltd	7.97609	0.00632	0.006322
2008	1	Barclays Bank of Kenya Ltd	7.22246	0.01172	0.011722
2009	1	Barclays Bank of Kenya Ltd	5.81024	0.00545	0.005454
2010	1	Barclays Bank of Kenya Ltd	4.47958	0.01358	0.013583
2011	1	Barclays Bank of Kenya Ltd	4.71567	0.00712	0.007116
2012	1	Barclays Bank of Kenya Ltd	5.24722	0.00135	0.001346

2013	1	Barclays Bank of Kenya Ltd	5.38635	0.01007	0.010066
2014	1	Barclays Bank of Kenya Ltd	4.88818	0.01089	0.010892
2015	1	Barclays Bank of Kenya Ltd	5.06499	0.01179	0.011786
2006	6	Commercial Bank of Africa Ltd	0	0	0
2007	6	Commercial Bank of Africa Ltd	0	0	0
2008	6	Commercial Bank of Africa Ltd	0	0.00929	0.009286
2009	6	Commercial Bank of Africa Ltd	0	0.00763	0.007628
2010	6	Commercial Bank of Africa Ltd	0	0.02065	0.020651
2011	6	Commercial Bank of Africa Ltd	8.46372	0.00655	0.006545
2012	6	Commercial Bank of Africa Ltd	9.05644	0.00326	0.003257
2013	6	Commercial Bank of Africa Ltd	9.50316	0.00711	0.00711
2014	6	Commercial Bank of Africa Ltd	10.022	0.01734	0.017337
2015	6	Commercial Bank of Africa Ltd	0	0	0
2006	7	Consolidated Bank of Kenya Ltd	3.759	0.03167	0.031669
2007	7	Consolidated Bank of Kenya Ltd	4.49198	0.0441	0.044098
2008	7	Consolidated Bank of Kenya Ltd	4.50473	0.02291	0.022909
2009	7	Consolidated Bank of Kenya Ltd	6.44229	0.02637	0.02637
2010	7	Consolidated Bank of Kenya Ltd	6.09411	0.01935	0.019348
2011	7	Consolidated Bank of Kenya Ltd	9.67456	0.00881	0.008807
2012	7	Consolidated Bank of Kenya Ltd	10.4358	0.01657	0.016572
2013	7	Consolidated Bank of Kenya Ltd	12.5089	0.0374	0.037402
2014	7	Consolidated Bank of Kenya Ltd	8.61543	0.04852	0.048524
2015	7	Consolidated Bank of Kenya Ltd	0	0	0
2006	2	Cooperative Bank of Kenya Ltd	10.9338	0.37266	0.372662
2007	2	Cooperative Bank of Kenya Ltd	9.11207	0.16223	0.162226
2008	2	Cooperative Bank of Kenya Ltd	5.13462	0.12428	0.124284
2009	2	Cooperative Bank of Kenya Ltd	5.7934	0.06524	0.065236
2010	2	Cooperative Bank of Kenya Ltd	6.494	0.04778	0.047777
2011	2	Cooperative Bank of Kenya Ltd	7.03356	0.04112	0.041122
2012	2	Cooperative Bank of Kenya Ltd	5.83039	0.03825	0.038248
2013	2	Cooperative Bank of Kenya Ltd	5.32011	0.03193	0.031926
2014	2	Cooperative Bank of Kenya Ltd	5.65616	0.02423	0.024225
2015	2	Cooperative Bank of Kenya Ltd	5.94684	0.03325	0.033248
2006	8	Diamond Trust Bank Kenya Ltd	0	0	0
2007	8	Diamond Trust Bank Kenya Ltd	0	0	0
2008	8	Diamond Trust Bank Kenya Ltd	0	0	0
2009	8	Diamond Trust Bank Kenya Ltd	9.35494	0.00711	0.007105
2010	8	Diamond Trust Bank Kenya Ltd	9.10264	0.01087	0.010866
2011	8	Diamond Trust Bank Kenya Ltd	9.11731	0.00825	0.008247
2012	8	Diamond Trust Bank Kenya Ltd	7.8528	0.01122	0.011219
2013	8	Diamond Trust Bank Kenya Ltd	7.68936	0.00809	0.008094

2014	8	Diamond Trust Bank Kenya Ltd	6.95296	0.00618	0.006182
2015	8	Diamond Trust Bank Kenya Ltd	7.7778	0.01211	0.01211
2006	9	Equity Bank Ltd	0	0	0
2007	9	Equity Bank Ltd	0	0	0
2008	9	Equity Bank Ltd	0	0	0
2009	9	Equity Bank Ltd	0	0	0
2010	9	Equity Bank Ltd	4.09121	0.02432	0.024316
2011	9	Equity Bank Ltd	4.62259	0.01431	0.014312
2012	9	Equity Bank Ltd	4.69287	0.01185	0.01185
2013	9	Equity Bank Ltd	4.46215	0.01401	0.014011
2014	9	Equity Bank Ltd	6.89355	0.02435	0.024345
2015	9	Equity Bank Ltd	7.50266	0.01926	0.019263
2006	10	Family Bank Ltd	0	0	0
2007	10	Family Bank Ltd	0	0	0
2008	10	Family Bank Ltd	5.81631	0.01613	0.016132
2009	10	Family Bank Ltd	6.26012	0.00925	0.009251
2010	10	Family Bank Ltd	5.46274	0.03156	0.03156
2011	10	Family Bank Ltd	6.8225	0.02063	0.020634
2012	10	Family Bank Ltd	5.37202	0.0361	0.036098
2013	10	Family Bank Ltd	6.28435	0.01149	0.011488
2014	10	Family Bank Ltd	4.81537	0.01026	0.010257
2015	10	Family Bank Ltd	5.80523	0.00378	0.003778
2006	11	Giro Commercial Bank Ltd	0	0	0
2007	11	Giro Commercial Bank Ltd	0	0	0
2008	11	Giro Commercial Bank Ltd	0	0	0
2009	11	Giro Commercial Bank Ltd	7.06768	0.00353	0.003531
2010	11	Giro Commercial Bank Ltd	6.63731	0.00568	0.005676
2011	11	Giro Commercial Bank Ltd	6.50222	0.00283	0.00283
2012	11	Giro Commercial Bank Ltd	5.91775	0.14713	0.147128
2013	11	Giro Commercial Bank Ltd	5.52755	0.00101	0.001013
2014	11	Giro Commercial Bank Ltd	5.22667	0.0022	0.002203
2015	11	Giro Commercial Bank Ltd	4.57672	0.00193	0.00193
2015	13	Imperial Bank Ltd	0	0	0
2006	13	Imperial Bank Ltd	5.95122	0.00828	0.008277
2007	13	Imperial Bank Ltd	6.41962	0.00596	0.005958
2008	13	Imperial Bank Ltd	6.02511	0.00488	0.004878
2009	13	Imperial Bank Ltd	5.83489	0.00558	0.005578
2010	13	Imperial Bank Ltd	5.28498	0.0113	0.011298
2011	13	Imperial Bank Ltd	6.36201	0.00658	0.006578
2012	13	Imperial Bank Ltd	7.30852	0.00733	0.007327
2013	13	Imperial Bank Ltd	0	0	0

2014	13	Imperial Bank Ltd	0	0	0
2006	12	Investment & Mortgages Bank Ltd	6.99571	0.00524	0.005237
2007	12	Investment & Mortgages Bank Ltd	6.60797	0.00651	0.006506
2008	12	Investment & Mortgages Bank Ltd	7.26272	0.00558	0.005575
2009	12	Investment & Mortgages Bank Ltd	6.33118	0.00348	0.003478
2010	12	Investment & Mortgages Bank Ltd	5.62643	0.00597	0.005969
2011	12	Investment & Mortgages Bank Ltd	2.64088	0.00375	0.003752
2012	12	Investment & Mortgages Bank Ltd	3.01766	0.00068	0.000683
2013	12	Investment & Mortgages Bank Ltd	5.72512	0.00514	0.005137
2014	12	Investment & Mortgages Bank Ltd	6.03915	0.00775	0.007745
2015	12	Investment & Mortgages Bank Ltd	5.27002	0.00605	0.006047
2006	14	Kenya Commercial Bank Ltd	0	0	0
2007	14	Kenya Commercial Bank Ltd	0	0	0
2008	14	Kenya Commercial Bank Ltd	8.4841	0.01506	0.015055
2009	14	Kenya Commercial Bank Ltd	7.6885	0.00595	0.005952
2010	14	Kenya Commercial Bank Ltd	5.19195	0.01448	0.014475
2011	14	Kenya Commercial Bank Ltd	6.34039	0.00954	0.009541
2012	14	Kenya Commercial Bank Ltd	5.93355	0.01775	0.017745
2013	14	Kenya Commercial Bank Ltd	5.24909	0.01276	0.012757
2014	14	Kenya Commercial Bank Ltd	5.74661	0.01783	0.017827
2015	14	Kenya Commercial Bank Ltd	5.89521	0.01362	0.013623
2006	15	National Bank of Kenya Ltd	0	0	0
2007	15	National Bank of Kenya Ltd	0	0	0
2008	15	National Bank of Kenya Ltd	5.87742	0.04034	0.040335
2009	15	National Bank of Kenya Ltd	5.50025	0.01087	0.01087
2010	15	National Bank of Kenya Ltd	5.04502	0.01737	0.017367
2011	15	National Bank of Kenya Ltd	5.56695	0.02465	0.024654
2012	15	National Bank of Kenya Ltd	5.42622	0.02558	0.025577
2013	15	National Bank of Kenya Ltd	6.80849	0.00725	0.007254
2014	15	National Bank of Kenya Ltd	9.15197	0.008	0.007998
2015	15	National Bank of Kenya Ltd	10.4807	0.05485	0.05485
2006	16	National Industrial Credit Bank Ltd	7.58682	0.00803	0.008027
2007	16	National Industrial Credit Bank Ltd	5.6057	0.0045	0.004503
2008	16	National Industrial Credit Bank Ltd	6.70157	0.00648	0.006477
2009	16	National Industrial Credit Bank Ltd	6.33587	0.01424	0.014241
2010	16	National Industrial Credit Bank Ltd	6.41591	0.00775	0.007754
2011	16	National Industrial Credit Bank Ltd	6.91525	0.00525	0.005245
2012	16	National Industrial Credit Bank Ltd	6.16435	0.00361	0.003606
2013	16	National Industrial Credit Bank Ltd	5.86995	0.01308	0.013079
2014	16	National Industrial Credit Bank Ltd	5.4129	0.00327	0.003271
2015	16	National Industrial Credit Bank Ltd	5.27111	0.01441	0.014408

2006	17	Oriental Commercial Bank Ltd	0	0	0
2007	17	Oriental Commercial Bank Ltd	0	0	0
2008	17	Oriental Commercial Bank Ltd	0	0	0
2009	17	Oriental Commercial Bank Ltd	2.10794	0.00593	0.005929
2010	17	Oriental Commercial Bank Ltd	3.00527	0.02041	0.020408
2011	17	Oriental Commercial Bank Ltd	2.89923	0.01608	0.016083
2012	17	Oriental Commercial Bank Ltd	3.49098	0.00087	0.000869
2013	17	Oriental Commercial Bank Ltd	3.59711	0.00347	0.00347
2014	17	Oriental Commercial Bank Ltd	3.92293	0.01254	0.012535
2015	17	Oriental Commercial Bank Ltd	2.79286	0.01659	0.016587
2006	18	Paramount-Universal Bank Ltd	0	0	0
2007	18	Paramount-Universal Bank Ltd	0	0	0
2008	18	Paramount-Universal Bank Ltd	0	0	0
2009	18	Paramount-Universal Bank Ltd	0	0	0
2010	18	Paramount-Universal Bank Ltd	0	0	0
2011	18	Paramount-Universal Bank Ltd	0	0	0
2012	18	Paramount-Universal Bank Ltd	5.38556	0.00292	0.002921
2013	18	Paramount-Universal Bank Ltd	5.52683	0.00397	0.003973
2014	18	Paramount-Universal Bank Ltd	6.54862	0.00225	0.002249
2015	18	Paramount-Universal Bank Ltd	5.85221	0.00204	0.002044
2006	19	Standard Chartered Bank Ltd	7.06086	0.01342	0.013417
2007	19	Standard Chartered Bank Ltd	7.4154	0.00502	0.005021
2008	19	Standard Chartered Bank Ltd	7.68393	0.00814	0.008137
2009	19	Standard Chartered Bank Ltd	7.95691	0.00817	0.00817
2010	19	Standard Chartered Bank Ltd	6.05715	0.00539	0.00539
2011	19	Standard Chartered Bank Ltd	6.96865	0.00423	0.004229
2012	19	Standard Chartered Bank Ltd	5.37853	0.00625	0.006251
2013	19	Standard Chartered Bank Ltd	5.11196	0.00593	0.005933
2014	19	Standard Chartered Bank Ltd	4.49535	0.00829	0.008291
2015	19	Standard Chartered Bank Ltd	4.7102	0.0372	0.037202
2006	20	Transnational Bank Ltd	0	0	0
2007	20	Transnational Bank Ltd	0	0	0
2008	20	Transnational Bank Ltd	0	0	0
2009	20	Transnational Bank Ltd	1.53887	0.01702	0.017019
2010	20	Transnational Bank Ltd	2.0902	0.02853	0.028531
2011	20	Transnational Bank Ltd	3.18015	0.01935	0.019347
2012	20	Transnational Bank Ltd	3.7988	0.01203	0.012034
2013	20	Transnational Bank Ltd	4.16693	0.01691	0.016913
2014	20	Transnational Bank Ltd	4.34726	0.01514	0.015144
2015	20	Transnational Bank Ltd	4.14117	0.01158	0.011581

Source: CBK; 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015

Table 4.13

Deposit Protection Variables

Year	Id	Bank	Deposit Insurance	Capitalization	Funding
2006	3	African Banking Corporation Ltd	0.08	0.1735302	6.02807
2007	3	African Banking Corporation Ltd	0.08	0.1709329	6.2688
2008	3	African Banking Corporation Ltd	0.08	0.2125914	5.57113
2009	3	African Banking Corporation Ltd	0.07	0.2058024	6.31727
2010	3	African Banking Corporation Ltd	0.06	0.1932409	5.99211
2011	3	African Banking Corporation Ltd	0.06	0.168501	6.54847
2012	3	African Banking Corporation Ltd	0.05	0.1361868	8.77228
2013	3	African Banking Corporation Ltd	0.05	0.1427307	8.49173
2014	3	African Banking Corporation Ltd	0.06	0.1127749	5.44992
2015	3	African Banking Corporation Ltd	0.05	0.1191543	5.23705
2006	4	Bank of Africa Ltd	0.03	0.1604646	6.2799
2007	4	Bank of Africa Ltd	0.03	0.1358696	6.51297
2008	4	Bank of Africa Ltd	0.03	0.1241999	8.11661
2009	4	Bank of Africa Ltd	0.03	0.1516444	6.93017
2010	4	Bank of Africa Ltd	0.04	0.1073852	7.37659
2011	4	Bank of Africa Ltd	0.03	0.126748	5.57425
2012	4	Bank of Africa Ltd	0.03	0.1032626	7.71938
2013	4	Bank of Africa Ltd	0.03	0.1093505	6.57598
2014	4	Bank of Africa Ltd	0.03	0.1179004	5.05471
2015	4	Bank of Africa Ltd	0.03	0.1320626	5.48931
2006	5	Bank of Baroda	0.13	0.2752234	8.01425
2007	5	Bank of Baroda	0.12	0.1893568	8.64461
2008	5	Bank of Baroda	0.17	0.1853112	8.44847
2009	5	Bank of Baroda	0.09	0.1965804	8.56342
2010	5	Bank of Baroda	0.07	0.2256595	7.37327
2011	5	Bank of Baroda	0.06	0.204658	6.48468
2012	5	Bank of Baroda	0.06	0.2259228	6.53311
2013	5	Bank of Baroda	0.06	0.2090925	5.46483
2014	5	Bank of Baroda	0.05	0.2328439	5.02768
2015	5	Bank of Baroda	0.05	0.2628412	4.58379
2006	1	Barclays Bank of Kenya Ltd	0.16	0.1212451	7.58279
2007	1	Barclays Bank of Kenya Ltd	0.16	0.13027	5.96811
2008	1	Barclays Bank of Kenya Ltd	0.14	0.1501793	5.07466
2009	1	Barclays Bank of Kenya Ltd	0.14	0.1914567	4.55733
2010	1	Barclays Bank of Kenya Ltd	0.14	0.2658237	3.71727
2011	1	Barclays Bank of Kenya Ltd	0.14	0.2410398	3.71011
2012	1	Barclays Bank of Kenya Ltd	0.12	0.2269225	4.2872

2013	1	Barclays Bank of Kenya Ltd	0.11	0.1659153	4.5558
2014	1	Barclays Bank of Kenya Ltd	0.09	0.1845427	4.28184
2015	1	Barclays Bank of Kenya Ltd	0.09	0.1580352	4.00473
2006	6	Commercial Bank of Africa Ltd	0.04	0.1483985	10.4188
2007	6	Commercial Bank of Africa Ltd	0.04	0.13467	9.21093
2008	6	Commercial Bank of Africa Ltd	0.04	0.1244567	9.28238
2009	6	Commercial Bank of Africa Ltd	0.04	0.1211063	9.18337
2010	6	Commercial Bank of Africa Ltd	0.03	0.137848	8.82465
2011	6	Commercial Bank of Africa Ltd	0.03	0.1386105	8.3731
2012	6	Commercial Bank of Africa Ltd	0.03	0.1551239	7.94952
2013	6	Commercial Bank of Africa Ltd	0.05	0.1280286	8.32735
2014	6	Commercial Bank of Africa Ltd	0.06	0.1137069	5.62285
2015	6	Commercial Bank of Africa Ltd	0.04	0.1216111	5.89409
2006	7	Consolidated Bank of Kenya Ltd	0.21	0.1921788	4.27604
2007	7	Consolidated Bank of Kenya Ltd	0.2	0.1688433	4.69687
2008	7	Consolidated Bank of Kenya Ltd	0.18	0.1707692	4.51032
2009	7	Consolidated Bank of Kenya Ltd	0.14	0.1430504	6.01973
2010	7	Consolidated Bank of Kenya Ltd	0.1	0.1092017	7.40111
2011	7	Consolidated Bank of Kenya Ltd	0.08	0.1092321	10.0924
2012	7	Consolidated Bank of Kenya Ltd	0.08	0.1140436	8.63578
2013	7	Consolidated Bank of Kenya Ltd	0.11	0.0749067	9.62284
2014	7	Consolidated Bank of Kenya Ltd	0.09	0.0828069	7.36981
2015	7	Consolidated Bank of Kenya Ltd	0.09	0.0777158	7.6189
2006	2	Cooperative Bank of Kenya Ltd	0.22	0.1329309	10.5658
2007	2	Cooperative Bank of Kenya Ltd	0.22	0.1421838	9.36009
2008	2	Cooperative Bank of Kenya Ltd	0.24	0.2200722	4.99101
2009	2	Cooperative Bank of Kenya Ltd	0.15	0.2032553	6.04015
2010	2	Cooperative Bank of Kenya Ltd	0.16	0.1615618	7.02239
2011	2	Cooperative Bank of Kenya Ltd	0.16	0.1604084	6.38821
2012	2	Cooperative Bank of Kenya Ltd	0.16	0.2025939	4.72321
2013	2	Cooperative Bank of Kenya Ltd	0.18	0.1565815	4.18768
2014	2	Cooperative Bank of Kenya Ltd	0.15	0.1460444	3.97699
2015	2	Cooperative Bank of Kenya Ltd	0.14	0.1451782	4.24194
2006	8	Diamond Trust Bank Kenya Ltd	0.05	0.1729061	5.53475
2007	8	Diamond Trust Bank Kenya Ltd	0.04	0.1910438	5.69373
2008	8	Diamond Trust Bank Kenya Ltd	0.04	0.1562434	5.79592
2009	8	Diamond Trust Bank Kenya Ltd	0.05	0.1537991	5.57033
2010	8	Diamond Trust Bank Kenya Ltd	0.04	0.1534602	5.63201
2011	8	Diamond Trust Bank Kenya Ltd	0	0.1421293	6.1455
2012	8	Diamond Trust Bank Kenya Ltd	0.04	0.1766269	5.36637
2013	8	Diamond Trust Bank Kenya Ltd	0.04	0.1765945	4.58083

2014	8	Diamond Trust Bank Kenya Ltd	0.04	0.1681736	4.05322
2015	8	Diamond Trust Bank Kenya Ltd	0.04	0.1484169	4.16611
2006	9	Equity Bank Ltd	0.53	0.138602	7.42254
2007	9	Equity Bank Ltd	0.78	0.4567666	1.78907
2008	9	Equity Bank Ltd	0.62	0.2922554	2.45992
2009	9	Equity Bank Ltd	0.45	0.2362636	2.92712
2010	9	Equity Bank Ltd	0.39	0.2194923	3.76003
2011	9	Equity Bank Ltd	0.35	0.1535814	4.40575
2012	9	Equity Bank Ltd	0.35	0.1986076	3.13551
2013	9	Equity Bank Ltd	0.34	0.1855337	3.59056
2014	9	Equity Bank Ltd	0.29	0.1516956	4.25818
2015	9	Equity Bank Ltd	0.27	0.146425	4.47388
2006	10	Family Bank Ltd	0	0	0
2007	10	Family Bank Ltd	0.62	0.2205118	5.21558
2008	10	Family Bank Ltd	0.51	0.1899946	5.22144
2009	10	Family Bank Ltd	0.44	0.1821522	6.01491
2010	10	Family Bank Ltd	0.36	0.2384413	5.25242
2011	10	Family Bank Ltd	0.23	0.1618338	6.80762
2012	10	Family Bank Ltd	0.24	0.2189515	5.14626
2013	10	Family Bank Ltd	0.21	0.180904	5.87093
2014	10	Family Bank Ltd	0.18	0.1955941	4.47218
2015	10	Family Bank Ltd	0.16	0.1539141	4.51822
2006	11	Giro Commercial Bank Ltd	0.06	0.1595707	9.34096
2007	11	Giro Commercial Bank Ltd	0.05	0.1583252	9.41571
2008	11	Giro Commercial Bank Ltd	0.05	0.1754277	8.48841
2009	11	Giro Commercial Bank Ltd	0.07	0.2209461	6.95902
2010	11	Giro Commercial Bank Ltd	0.06	0.2372818	6.2
2011	11	Giro Commercial Bank Ltd	0.05	0.2252929	6.37682
2012	11	Giro Commercial Bank Ltd	0.05	0.2816761	5.87042
2013	11	Giro Commercial Bank Ltd	0.05	0.2780089	5.4897
2014	11	Giro Commercial Bank Ltd	0.04	0.2287453	5.14079
2015	11	Giro Commercial Bank Ltd	0.04	0.2304558	4.5157
2015	13	Imperial Bank Ltd	0	0	0
2006	13	Imperial Bank Ltd	0.07	0.1978144	5.66373
2007	13	Imperial Bank Ltd	0.09	0.1789888	5.58751
2008	13	Imperial Bank Ltd	0.07	0.1900562	5.70318
2009	13	Imperial Bank Ltd	0.07	0.2038128	5.68582
2010	13	Imperial Bank Ltd	0.08	0.1992495	5.77374
2011	13	Imperial Bank Ltd	0.07	0.2014234	6.26465
2012	13	Imperial Bank Ltd	0.06	0.1818816	7.35101
2013	13	Imperial Bank Ltd	0.06	0.147056	7.16404

2014	13	Imperial Bank Ltd	0.05	0.1518776	7.10702
2006	12	Investment & Mortgages Bank Ltd	0.07	0.1281794	7.49178
2007	12	Investment & Mortgages Bank Ltd	0.06	0.1440479	6.28686
2008	12	Investment & Mortgages Bank Ltd	0.05	0.1095116	6.25524
2009	12	Investment & Mortgages Bank Ltd	0.05	0.169879	5.33482
2010	12	Investment & Mortgages Bank Ltd	0.05	0.188966	5.15408
2011	12	Investment & Mortgages Bank Ltd	0.04	0.1811615	4.91575
2012	12	Investment & Mortgages Bank Ltd	0.04	0.1698259	5.42076
2013	12	Investment & Mortgages Bank Ltd	0.03	0.150729	4.0165
2014	12	Investment & Mortgages Bank Ltd	0.04	0.1576942	3.7887
2015	12	Investment & Mortgages Bank Ltd	0.04	0.1704962	3.90827
2006	14	Kenya Commercial Bank Ltd	0.27	0.1574942	7.79747
2007	14	Kenya Commercial Bank Ltd	0.2	0.1361007	8.52459
2008	14	Kenya Commercial Bank Ltd	0.14	0.1545269	6.786
2009	14	Kenya Commercial Bank Ltd	0.13	0.1482246	7.80627
2010	14	Kenya Commercial Bank Ltd	0.13	0.231244	4.62554
2011	14	Kenya Commercial Bank Ltd	0.12	0.1990422	5.26488
2012	14	Kenya Commercial Bank Ltd	0.11	0.2130387	4.9748
2013	14	Kenya Commercial Bank Ltd	0.11	0.1867628	3.87609
2014	14	Kenya Commercial Bank Ltd	0.11	0.1705781	3.88639
2015	14	Kenya Commercial Bank Ltd	0.09	0.1411432	5.69331
2006	15	National Bank of Kenya Ltd	0.15	0.1147256	8.21072
2007	15	National Bank of Kenya Ltd	0.14	0.3721827	7.52373
2008	15	National Bank of Kenya Ltd	0.15	0.3858503	5.84251
2009	15	National Bank of Kenya Ltd	0.14	0.4085285	5.67807
2010	15	National Bank of Kenya Ltd	0.12	0.3548904	4.98412
2011	15	National Bank of Kenya Ltd	0.11	0.2792977	5.67053
2012	15	National Bank of Kenya Ltd	0.12	0.2727324	5.50424
2013	15	National Bank of Kenya Ltd	0.08	0.2274723	7.12395
2014	15	National Bank of Kenya Ltd	0.06	0.1285915	9.34624
2015	15	National Bank of Kenya Ltd	0.09	0.1299923	10.5044
2006	16	National Industrial Credit Bank	0.04	0.1329853	7.64186
2007	16	National Industrial Credit Bank	0.05	0.158361	5.78633
2008	16	National Industrial Credit Bank	0.04	0.1421004	6.52797
2009	16	National Industrial Credit Bank	0.04	0.145913	6.4747
2010	16	National Industrial Credit Bank	0.04	0.1463955	6.22244
2011	16	National Industrial Credit Bank	0.03	0.1498307	6.44383
2012	16	National Industrial Credit Bank	0.03	0.1560107	5.84826
2013	16	National Industrial Credit Bank	0.03	0.1481622	5.9708
2014	16	National Industrial Credit Bank	0.03	0.1436606	3.39397
2015	16	National Industrial Credit Bank	0.03	0.145215	3.46523

2006	17	Oriental Commercial Bank Ltd	0.18	0.5982222	1.08915
2007	17	Oriental Commercial Bank Ltd	0.16	0.6035372	1.00488
2008	17	Oriental Commercial Bank Ltd	0.1	0.5305164	1.62423
2009	17	Oriental Commercial Bank Ltd	0.07	0.3907065	2.36706
2010	17	Oriental Commercial Bank Ltd	0.05	0.3474364	3.25299
2011	17	Oriental Commercial Bank Ltd	0.05	0.3403042	3.31896
2012	17	Oriental Commercial Bank Ltd	0.06	0.2891597	4.04546
2013	17	Oriental Commercial Bank Ltd	0.04	0.291796	3.9191
2014	17	Oriental Commercial Bank Ltd	0.03	0.2450963	4.29724
2015	17	Oriental Commercial Bank Ltd	0.03	0.3290668	2.94972
2006	18	Paramount-Universal Bank Ltd	0.11	0.3247261	4.20482
2007	18	Paramount-Universal Bank Ltd	0.09	0.3247261	4.51807
2008	18	Paramount-Universal Bank Ltd	0.21	0.4117647	4.28659
2009	18	Paramount-Universal Bank Ltd	0.07	0.3307494	4.83302
2010	18	Paramount-Universal Bank Ltd	0.11	0.4640483	4.53758
2011	18	Paramount-Universal Bank Ltd	0.11	0.5278947	3.5809
2012	18	Paramount-Universal Bank Ltd	0.14	0.4627615	5.35563
2013	18	Paramount-Universal Bank Ltd	0.15	0.4032258	5.41066
2014	18	Paramount-Universal Bank Ltd	0.08	0.2431532	5.84884
2015	18	Paramount-Universal Bank Ltd	0.1	0.2283824	5.26567
2006	19	Standard Chartered Bank Ltd	0.1	0.1832395	7.52395
2007	19	Standard Chartered Bank Ltd	0.1	0.1628439	8.02707
2008	19	Standard Chartered Bank Ltd	0.09	0.157433	8.00604
2009	19	Standard Chartered Bank Ltd	0.09	0.1412101	7.94998
2010	19	Standard Chartered Bank Ltd	0.07	0.1390598	8.56885
2011	19	Standard Chartered Bank Ltd	0.06	0.1230568	7.45236
2012	19	Standard Chartered Bank Ltd	0.05	0.1630055	5.87258
2013	19	Standard Chartered Bank Ltd	0.05	0.1749096	5.03629
2014	19	Standard Chartered Bank Ltd	0.05	0.1580732	4.24567
2015	19	Standard Chartered Bank Ltd	0.05	0.1752808	4.28515
2006	20	Transnational Bank Ltd	0.15	0.6540284	1.14493
2007	20	Transnational Bank Ltd	0.15	0.5959596	1.66205
2008	20	Transnational Bank Ltd	0.14	0.6520107	1.53117
2009	20	Transnational Bank Ltd	0.16	0.7054054	1.40151
2010	20	Transnational Bank Ltd	0.13	0.695692	1.9708
2011	20	Transnational Bank Ltd	0.08	0.4615592	3.0397
2012	20	Transnational Bank Ltd	0.08	0.379398	3.58082
2013	20	Transnational Bank Ltd	0.07	0.3033915	3.84216
2014	20	Transnational Bank Ltd	0.07	0.2055757	4.00313
2015	20	Transnational Bank Ltd	0.07	0.2035258	3.73487

Source: CBK; 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015,

Table 4.14

Measurement Variables i

Year	Id	Bank	Assets	Equity	Deposits
2006	3	African Banking Corporation Ltd	6591	677	4081
2007	3	African Banking Corporation Ltd	6700	812	5084
2008	3	African Banking Corporation Ltd	6826	968	5365
2009	3	African Banking Corporation Ltd	9118	1145	7208
2010	3	African Banking Corporation Ltd	10297	1631	8353
2011	3	African Banking Corporation Ltd	12507	1702	10471
2012	3	African Banking Corporation Ltd	19071	2112	15255
2013	3	African Banking Corporation Ltd	19639	2450	15905
2014	3	African Banking Corporation Ltd	21439	2623	16050
2015	3	African Banking Corporation Ltd	22058	2837	15774
2006	4	Bank of Africa Ltd	8515	978	4936
2007	4	Bank of Africa Ltd	8093	1263	5523
2008	4	Bank of Africa Ltd	12823	1662	8701
2009	4	Bank of Africa Ltd	16978	2511	12405
2010	4	Bank of Africa Ltd	26699	2945	19784
2011	4	Bank of Africa Ltd	38734	4672	23986
2012	4	Bank of Africa Ltd	48958	5010	35100
2013	4	Bank of Africa Ltd	52683	6539	36740
2014	4	Bank of Africa Ltd	62212	7913	41671
2015	4	Bank of Africa Ltd	69280	8496	47488
2006	5	Bank of Baroda	12809	1263	10122
2007	5	Bank of Baroda	15245	1532	12673
2008	5	Bank of Baroda	18787	1910	15165
2009	5	Bank of Baroda	22399	2565	18634
2010	5	Bank of Baroda	32332	4744	25600
2011	5	Bank of Baroda	36701	4936	30264
2012	5	Bank of Baroda	46138	5758	38382
2013	5	Bank of Baroda	52022	7569	41877
2014	5	Bank of Baroda	61945	9867	48683
2015	5	Bank of Baroda	68178	11273	52929
2006	1	Barclays Bank of Kenya Ltd	117722	14862	93837
2007	1	Barclays Bank of Kenya Ltd	157656	17564	109097
2008	1	Barclays Bank of Kenya Ltd	168512	20494	126562
2009	1	Barclays Bank of Kenya Ltd	164875	24210	125869
2010	1	Barclays Bank of Kenya Ltd	172415	31465	123826
2011	1	Barclays Bank of Kenya Ltd	167029	29223	124207
2012	1	Barclays Bank of Kenya Ltd	184826	29585	137915
2013	1	Barclays Bank of Kenya Ltd	206739	32372	151125

2014	1	Barclays Bank of Kenya Ltd	225841	38355	164504
2015	1	Barclays Bank of Kenya Ltd	240877	39716	165083
2006	6	Commercial Bank of Africa Ltd	45002	3631	32517
2007	6	Commercial Bank of Africa Ltd	40178	4518	33362
2008	6	Commercial Bank of Africa Ltd	51248	4949	41715
2009	6	Commercial Bank of Africa Ltd	58904	6323	44273
2010	6	Commercial Bank of Africa Ltd	63592	7474	53195
2011	6	Commercial Bank of Africa Ltd	83283	9935	67303
2012	6	Commercial Bank of Africa Ltd	100456	11641	79996
2013	6	Commercial Bank of Africa Ltd	124882	13749	90993
2014	6	Commercial Bank of Africa Ltd	175809	17857	122044
2015	6	Commercial Bank of Africa Ltd	198484	22708	148537
2006	7	Consolidated Bank of Kenya Ltd	4100	722	2463
2007	7	Consolidated Bank of Kenya Ltd	5392	748	2851
2008	7	Consolidated Bank of Kenya Ltd	5543	846	3279
2009	7	Consolidated Bank of Kenya Ltd	7565	927	4882
2010	7	Consolidated Bank of Kenya Ltd	10479	1477	8008
2011	7	Consolidated Bank of Kenya Ltd	15318	1435	12010
2012	7	Consolidated Bank of Kenya Ltd	18001	1574	13325
2013	7	Consolidated Bank of Kenya Ltd	16779	1242	11711
2014	7	Consolidated Bank of Kenya Ltd	15077	1568	10642
2015	7	Consolidated Bank of Kenya Ltd	14136	1615	9996
2006	2	Cooperative Bank of Kenya Ltd	57688	4834	50462
2007	2	Cooperative Bank of Kenya Ltd	65324	6460	56198
2008	2	Cooperative Bank of Kenya Ltd	83486	13609	67159
2009	2	Cooperative Bank of Kenya Ltd	110678	16292	92529
2010	2	Cooperative Bank of Kenya Ltd	154339	20595	129226
2011	2	Cooperative Bank of Kenya Ltd	168312	20951	144514
2012	2	Cooperative Bank of Kenya Ltd	200588	29367	163149
2013	2	Cooperative Bank of Kenya Ltd	231215	36584	180887
2014	2	Cooperative Bank of Kenya Ltd	285396	42877	220858
2015	2	Cooperative Bank of Kenya Ltd	342500	49303	268820
2006	8	Diamond Trust Bank Kenya Ltd	26153	2609	16726
2007	8	Diamond Trust Bank Kenya Ltd	31130	4670	24409
2008	8	Diamond Trust Bank Kenya Ltd	42073	5334	32689
2009	8	Diamond Trust Bank Kenya Ltd	47509	6263	36274
2010	8	Diamond Trust Bank Kenya Ltd	58606	8057	44904
2011	8	Diamond Trust Bank Kenya Ltd	77453	10366	59722
2012	8	Diamond Trust Bank Kenya Ltd	94512	14878	72505
2013	8	Diamond Trust Bank Kenya Ltd	114136	18568	84672
2014	8	Diamond Trust Bank Kenya Ltd	141176	25784	101594

2015	8	Diamond Trust Bank Kenya Ltd	190948	29996	126229
2006	9	Equity Bank Ltd	22391	2201	16337
2007	9	Equity Bank Ltd	54640	14917	31536
2008	9	Equity Bank Ltd	78001	19660	48977
2009	9	Equity Bank Ltd	98434	23337	65825
2010	9	Equity Bank Ltd	133890	28308	95204
2011	9	Equity Bank Ltd	176911	35047	121744
2012	9	Equity Bank Ltd	215829	42672	140286
2013	9	Equity Bank Ltd	238194	50687	158527
2014	9	Equity Bank Ltd	277116	40733	202485
2015	9	Equity Bank Ltd	341329	47440	236610
2006	10	Family Bank Ltd	0	0	0
2007	10	Family Bank Ltd	9123	1277	6024
2008	10	Family Bank Ltd	10713	1557	7404
2009	10	Family Bank Ltd	13683	1853	10490
2010	10	Family Bank Ltd	20188	3127	15731
2011	10	Family Bank Ltd	26002	3324	21444
2012	10	Family Bank Ltd	30985	4860	24630
2013	10	Family Bank Ltd	43501	5968	34615
2014	10	Family Bank Ltd	61813	10621	47186
2015	10	Family Bank Ltd	81190	11927	62731
2006	11	Giro Commercial Bank Ltd	5700	495	4493
2007	11	Giro Commercial Bank Ltd	5970	528	4915
2008	11	Giro Commercial Bank Ltd	6154	608	5127
2009	11	Giro Commercial Bank Ltd	7026	857	5943
2010	11	Giro Commercial Bank Ltd	10234	1340	8308
2011	11	Giro Commercial Bank Ltd	11846	1579	10069
2012	11	Giro Commercial Bank Ltd	12280	1775	10420
2013	11	Giro Commercial Bank Ltd	13623	2087	11457
2014	11	Giro Commercial Bank Ltd	15082	2422	12451
2015	11	Giro Commercial Bank Ltd	15810	2835	12802
2015	13	Imperial Bank Ltd	0	0	0
2006	13	Imperial Bank Ltd	12400	1353	7074
2007	13	Imperial Bank Ltd	12386	1580	8588
2008	13	Imperial Bank Ltd	13780	1912	10414
2009	13	Imperial Bank Ltd	15755	2247	12270
2010	13	Imperial Bank Ltd	19399	3095	13678
2011	13	Imperial Bank Ltd	25618	3685	19245
2012	13	Imperial Bank Ltd	34590	4554	27581
2013	13	Imperial Bank Ltd	43006	5719	34065
2014	13	Imperial Bank Ltd	56599	7469	47148

2006	12	Investment & Mortgages Bank Ltd	30054	2795	18220
2007	12	Investment & Mortgages Bank Ltd	30389	3867	23626
2008	12	Investment & Mortgages Bank Ltd	37022	5188	28355
2009	12	Investment & Mortgages Bank Ltd	44486	7419	34799
2010	12	Investment & Mortgages Bank Ltd	62552	12980	45995
2011	12	Investment & Mortgages Bank Ltd	76903	13856	56944
2012	12	Investment & Mortgages Bank Ltd	91520	16591	65640
2013	12	Investment & Mortgages Bank Ltd	110316	20525	74494
2014	12	Investment & Mortgages Bank Ltd	137299	21814	86621
2015	12	Investment & Mortgages Bank Ltd	147846	26187	103741
2006	14	Kenya Commercial Bank Ltd	115592	11481	71495
2007	14	Kenya Commercial Bank Ltd	124527	12846	85638
2008	14	Kenya Commercial Bank Ltd	181974	20058	109845
2009	14	Kenya Commercial Bank Ltd	180041	22398	137968
2010	14	Kenya Commercial Bank Ltd	223025	40876	163189
2011	14	Kenya Commercial Bank Ltd	282494	45163	210174
2012	14	Kenya Commercial Bank Ltd	304112	52926	223493
2013	14	Kenya Commercial Bank Ltd	323312	62391	237213
2014	14	Kenya Commercial Bank Ltd	376969	72165	276750
2015	14	Kenya Commercial Bank Ltd	467741	80886	347702
2006	15	National Bank of Kenya Ltd	70125	3848	28639
2007	15	National Bank of Kenya Ltd	52098	4967	34722
2008	15	National Bank of Kenya Ltd	44588	6208	34278
2009	15	National Bank of Kenya Ltd	52327	7908	41995
2010	15	National Bank of Kenya Ltd	60027	9930	47085
2011	15	National Bank of Kenya Ltd	68665	10456	56728
2012	15	National Bank of Kenya Ltd	67155	10450	55191
2013	15	National Bank of Kenya Ltd	92493	11848	77993
2014	15	National Bank of Kenya Ltd	122865	12114	104734
2015	15	National Bank of Kenya Ltd	125295	10914	110622
2006	16	National Industrial Credit Bank Ltd	29240	3035	21978
2007	16	National Industrial Credit Bank Ltd	32673	4735	24806
2008	16	National Industrial Credit Bank Ltd	43609	5529	35238
2009	16	National Industrial Credit Bank Ltd	46326	6434	36977
2010	16	National Industrial Credit Bank Ltd	54776	7896	45318
2011	16	National Industrial Credit Bank Ltd	73581	9900	62009
2012	16	National Industrial Credit Bank Ltd	101772	15065	77466
2013	16	National Industrial Credit Bank Ltd	112917	17631	84236
2014	16	National Industrial Credit Bank Ltd	137087	22618	92791
2015	16	National Industrial Credit Bank Ltd	156762	26454	105194
2006	17	Oriental Commercial Bank Ltd	2124	673	733

2007	17	Oriental Commercial Bank Ltd	2367	819	823
2008	17	Oriental Commercial Bank Ltd	2774	944	1314
2009	17	Oriental Commercial Bank Ltd	3421	982	2012
2010	17	Oriental Commercial Bank Ltd	4558	1138	3266
2011	17	Oriental Commercial Bank Ltd	5030	1290	3694
2012	17	Oriental Commercial Bank Ltd	6220	1385	4806
2013	17	Oriental Commercial Bank Ltd	7007	1524	5377
2014	17	Oriental Commercial Bank Ltd	7858	1596	6231
2015	17	Oriental Commercial Bank Ltd	8496	2240	6218
2006	18	Paramount-Universal Bank Ltd	3000	426	1745
2007	18	Paramount-Universal Bank Ltd	3371	456	1875
2008	18	Paramount-Universal Bank Ltd	3552	492	2109
2009	18	Paramount-Universal Bank Ltd	3418	527	2547
2010	18	Paramount-Universal Bank Ltd	4420	785	3562
2011	18	Paramount-Universal Bank Ltd	4727	1026	3674
2012	18	Paramount-Universal Bank Ltd	7255	1136	6084
2013	18	Paramount-Universal Bank Ltd	8029	1230	6601
2014	18	Paramount-Universal Bank Ltd	10402	1378	8048
2015	18	Paramount-Universal Bank Ltd	10526	1536	8067
2006	19	Standard Chartered Bank Ltd	114162	10039	64879
2007	19	Standard Chartered Bank Ltd	92966	10816	73841
2008	19	Standard Chartered Bank Ltd	100392	11390	76898
2009	19	Standard Chartered Bank Ltd	124806	13807	86774
2010	19	Standard Chartered Bank Ltd	142880	20210	100504
2011	19	Standard Chartered Bank Ltd	164182	20571	122323
2012	19	Standard Chartered Bank Ltd	195493	30603	140525
2013	19	Standard Chartered Bank Ltd	220524	36030	154720
2014	19	Standard Chartered Bank Ltd	222636	40450	154067
2015	19	Standard Chartered Bank Ltd	234131	40914	172036
2006	20	Transnational Bank Ltd	2820	1122	1264
2007	20	Transnational Bank Ltd	3664	1103	1800
2008	20	Transnational Bank Ltd	3710	1235	1891
2009	20	Transnational Bank Ltd	3705	1325	1857
2010	20	Transnational Bank Ltd	4762	1541	3037
2011	20	Transnational Bank Ltd	7287	1743	5283
2012	20	Transnational Bank Ltd	8801	1834	6535
2013	20	Transnational Bank Ltd	9658	1869	7181
2014	20	Transnational Bank Ltd	10240	1915	7666
2015	20	Transnational Bank Ltd	10533	2033	7593

Source: CBK; 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015

Table 4.15

Measurement Variables ii

Year	Id	Bank	Tier 1	Total capital	% of Insured	Interest Income
2006	3	African Banking Corporation Ltd	670	677	0.084298341	0
2007	3	African Banking Corporation Ltd	808	811	0.080448466	0
2008	3	African Banking Corporation Ltd	959	963	0.080521901	0
2009	3	African Banking Corporation Ltd	1135	1141	0.066037736	0
2010	3	African Banking Corporation Ltd	1338	1394	0.061055908	1055
2011	3	African Banking Corporation Ltd	1531	1599	0.061789705	1267
2012	3	African Banking Corporation Ltd	1645	1739	0.0507361	2265
2013	3	African Banking Corporation Ltd	1774	1873	0.04913804	2536
2014	3	African Banking Corporation Ltd	1928	2945	0.056261682	2731
2015	3	African Banking Corporation Ltd	2181	3012	0.054456701	2975
2006	4	Bank of Africa Ltd	746	786	0.028271059	434
2007	4	Bank of Africa Ltd	800	848	0.03385841	543
2008	4	Bank of Africa Ltd	1009	1072	0.029077118	1369
2009	4	Bank of Africa Ltd	1706	1790	0.026602177	2101
2010	4	Bank of Africa Ltd	1899	2682	0.036847958	2802
2011	4	Bank of Africa Ltd	3408	4303	0.032393896	4391
2012	4	Bank of Africa Ltd	3567	4547	0.029743971	7404
2013	4	Bank of Africa Ltd	4803	5587	0.02766094	6813
2014	4	Bank of Africa Ltd	6105	8244	0.027116802	5635
2015	4	Bank of Africa Ltd	6970	8651	0.030940245	6914
2006	5	Bank of Baroda	1263	1263	0.132573954	0
2007	5	Bank of Baroda	1466	1466	0.119229859	0
2008	5	Bank of Baroda	1688	1795	0.167095285	0
2009	5	Bank of Baroda	2081	2176	0.085757218	0
2010	5	Bank of Baroda	3319	3472	0.07015625	0
2011	5	Bank of Baroda	4464	4667	0.06456516	3925
2012	5	Bank of Baroda	5637	5875	0.057708651	5901
2013	5	Bank of Baroda	7414	7663	0.056594312	6085
2014	5	Bank of Baroda	9324	9683	0.052544009	6807
2015	5	Bank of Baroda	11181	11547	0.051351811	7591
2006	1	Barclays Bank of Kenya Ltd	12375	12375	0.159105683	10428
2007	1	Barclays Bank of Kenya Ltd	17019	18280	0.16393668	13634
2008	1	Barclays Bank of Kenya Ltd	19980	24940	0.138828239	17821
2009	1	Barclays Bank of Kenya Ltd	22186	27619	0.140908405	17517
2010	1	Barclays Bank of Kenya Ltd	28424	33311	0.13997868	17131
2011	1	Barclays Bank of Kenya Ltd	29013	33478	0.138559018	17632
2012	1	Barclays Bank of Kenya Ltd	28329	32169	0.124620237	21041

2013	1	Barclays Bank of Kenya Ltd	31798	33172	0.110546446	21297
2014	1	Barclays Bank of Kenya Ltd	37980	38419	0.092061159	22941
2015	1	Barclays Bank of Kenya Ltd	35419	41222	0.092034742	25286
2006	6	Commercial Bank of Africa Ltd	3030	3121	0.044769872	0
2007	6	Commercial Bank of Africa Ltd	3459	3622	0.044451771	0
2008	6	Commercial Bank of Africa Ltd	4295	4494	0.038834951	0
2009	6	Commercial Bank of Africa Ltd	4545	4821	0.037607571	0
2010	6	Commercial Bank of Africa Ltd	5728	6028	0.029532851	0
2011	6	Commercial Bank of Africa Ltd	7661	8038	0.028483129	6617
2012	6	Commercial Bank of Africa Ltd	9712	10063	0.02853887	10801
2013	6	Commercial Bank of Africa Ltd	10378	10927	0.050076373	11858
2014	6	Commercial Bank of Africa Ltd	13779	21705	0.064560563	14852
2015	6	Commercial Bank of Africa Ltd	17099	25201	0.035092805	0
2006	7	Consolidated Bank of Kenya Ltd	516	576	0.205362523	297
2007	7	Consolidated Bank of Kenya Ltd	543	607	0.200982112	369
2008	7	Consolidated Bank of Kenya Ltd	666	727	0.182677646	458
2009	7	Consolidated Bank of Kenya Ltd	740	811	0.143998361	636
2010	7	Consolidated Bank of Kenya Ltd	896	1082	0.098651349	887
2011	7	Consolidated Bank of Kenya Ltd	1027	1190	0.076686095	1585
2012	7	Consolidated Bank of Kenya Ltd	1171	1543	0.076248513	2636
2013	7	Consolidated Bank of Kenya Ltd	843	1217	0.112451135	2336
2014	7	Consolidated Bank of Kenya Ltd	1088	1444	0.088808989	2054
2015	7	Consolidated Bank of Kenya Ltd	1086	1312	0.092547727	0
2006	2	Cooperative Bank of Kenya Ltd	4360	4776	0.2168	4414
2007	2	Cooperative Bank of Kenya Ltd	5882	6004	0.2174	5850
2008	2	Cooperative Bank of Kenya Ltd	12613	13456	0.2443	7425
2009	2	Cooperative Bank of Kenya Ltd	14823	15319	0.1524	9348
2010	2	Cooperative Bank of Kenya Ltd	17971	18402	0.1571	12141
2011	2	Cooperative Bank of Kenya Ltd	22103	22622	0.1574	16858
2012	2	Cooperative Bank of Kenya Ltd	29414	34542	0.1619	22230
2013	2	Cooperative Bank of Kenya Ltd	32123	43195	0.1758	1904
2014	2	Cooperative Bank of Kenya Ltd	37462	55534	0.151	27210
2015	2	Cooperative Bank of Kenya Ltd	43283	63372	0.1387	33370
2006	8	Diamond Trust Bank Kenya Ltd	2531	3022	0.050635538	0
2007	8	Diamond Trust Bank Kenya Ltd	4279	4287	0.044696628	0
2008	8	Diamond Trust Bank Kenya Ltd	4457	5640	0.042001897	0
2009	8	Diamond Trust Bank Kenya Ltd	5279	6512	0.045652533	6461
2010	8	Diamond Trust Bank Kenya Ltd	6637	7973	0.044183146	7364
2011	8	Diamond Trust Bank Kenya Ltd	8229	9718	0.002593187	10039
2012	8	Diamond Trust Bank Kenya Ltd	12029	13511	0.041748776	16579
2013	8	Diamond Trust Bank Kenya Ltd	15508	18484	0.043300692	17179

2014	8	Diamond Trust Bank Kenya Ltd	22245	25065	0.039604154	20808
2015	8	Diamond Trust Bank Kenya Ltd	25421	30299	0.041310823	25825
2006	9	Equity Bank Ltd	2201	2201	0.527055324	0
2007	9	Equity Bank Ltd	13666	17627	0.775304414	0
2008	9	Equity Bank Ltd	14272	19910	0.618004369	0
2009	9	Equity Bank Ltd	16873	22488	0.447702241	0
2010	9	Equity Bank Ltd	19931	25320	0.388513088	13775
2011	9	Equity Bank Ltd	19589	27633	0.351232611	19339
2012	9	Equity Bank Ltd	29525	44741	0.351076486	30847
2013	9	Equity Bank Ltd	34759	44151	0.342798805	31889
2014	9	Equity Bank Ltd	40733	47552	0.285599329	35366
2015	9	Equity Bank Ltd	47659	52887	0.26688324	43454
2006	10	Family Bank Ltd	0	0	0	0
2007	10	Family Bank Ltd	1146	1155	0.616699867	0
2008	10	Family Bank Ltd	1409	1418	0.512560778	1317
2009	10	Family Bank Ltd	1735	1744	0.439942803	1613
2010	10	Family Bank Ltd	2986	2995	0.364312504	1896
2011	10	Family Bank Ltd	2997	3150	0.230180936	2844
2012	10	Family Bank Ltd	4619	4786	0.235441903	4775
2013	10	Family Bank Ltd	5631	5896	0.207734775	5354
2014	10	Family Bank Ltd	10184	10551	0.180438734	7121
2015	10	Family Bank Ltd	11329	13884	0.157450065	10032
2006	11	Giro Commercial Bank Ltd	446	481	0.055475061	0
2007	11	Giro Commercial Bank Ltd	484	522	0.053713123	0
2008	11	Giro Commercial Bank Ltd	564	604	0.051102009	0
2009	11	Giro Commercial Bank Ltd	808	854	0.065118627	703
2010	11	Giro Commercial Bank Ltd	1278	1340	0.05801637	857
2011	11	Giro Commercial Bank Ltd	1500	1579	0.050451882	1185
2012	11	Giro Commercial Bank Ltd	1694	1775	0.049041343	1643
2013	11	Giro Commercial Bank Ltd	2005	2087	0.046418288	1507
2014	11	Giro Commercial Bank Ltd	2330	2422	0.044399839	1582
2015	11	Giro Commercial Bank Ltd	2715	2835	0.039668905	1853
2015	13	Imperial Bank Ltd	0	0	0	0
2006	13	Imperial Bank Ltd	1249	1249	0.071648745	1649
2007	13	Imperial Bank Ltd	1455	1537	0.086399627	1989
2008	13	Imperial Bank Ltd	1724	1826	0.074034953	2412
2009	13	Imperial Bank Ltd	2042	2158	0.068785656	2677
2010	13	Imperial Bank Ltd	2230	2369	0.081590876	2788
2011	13	Imperial Bank Ltd	3000	3072	0.073577553	4406
2012	13	Imperial Bank Ltd	3648	3752	0.061345778	6906
2013	13	Imperial Bank Ltd	4663	4755	0.056813315	0

2014	13	Imperial Bank Ltd	6564	6634	0.04795715	0
2006	12	Investment & Mortgages Bank Ltd	2424	2432	0.0663	2105
2007	12	Investment & Mortgages Bank Ltd	3750	3758	0.059	2765
2008	12	Investment & Mortgages Bank Ltd	3933	4533	0.0548	3932
2009	12	Investment & Mortgages Bank Ltd	5923	6523	0.0513	5081
2010	12	Investment & Mortgages Bank Ltd	8467	8924	0.045	6611
2011	12	Investment & Mortgages Bank Ltd	10884	11584	0.0425	9031
2012	12	Investment & Mortgages Bank Ltd	11862	12109	0.0441	14007
2013	12	Investment & Mortgages Bank Ltd	14700	18547	0.0291	14479
2014	12	Investment & Mortgages Bank Ltd	19122	22863	0.0432	15748
2015	12	Investment & Mortgages Bank Ltd	23559	26544	0.0413	19663
2006	14	Kenya Commercial Bank Ltd	9169	9169	0.274212104	0
2007	14	Kenya Commercial Bank Ltd	10046	10046	0.199946286	0
2008	14	Kenya Commercial Bank Ltd	16187	16187	0.136246529	14745
2009	14	Kenya Commercial Bank Ltd	17674	17674	0.131247826	17948
2010	14	Kenya Commercial Bank Ltd	35221	35280	0.128587098	23109
2011	14	Kenya Commercial Bank Ltd	38403	39920	0.117935615	28501
2012	14	Kenya Commercial Bank Ltd	42125	44925	0.110159912	43082
2013	14	Kenya Commercial Bank Ltd	50905	61199	0.112974415	41613
2014	14	Kenya Commercial Bank Ltd	57805	71210	0.105781391	47475
2015	14	Kenya Commercial Bank Ltd	56103	61072	0.094768158	56442
2006	15	National Bank of Kenya Ltd	3368	3488	0.149531659	0
2007	15	National Bank of Kenya Ltd	4442	4615	0.143540119	0
2008	15	National Bank of Kenya Ltd	5672	5867	0.152721862	3782
2009	15	National Bank of Kenya Ltd	7099	7396	0.136206691	4485
2010	15	National Bank of Kenya Ltd	9082	9447	0.124652233	5430
2011	15	National Bank of Kenya Ltd	9576	10004	0.108288676	6457
2012	15	National Bank of Kenya Ltd	9622	10027	0.11527152	8430
2013	15	National Bank of Kenya Ltd	10312	10948	0.083864065	8165
2014	15	National Bank of Kenya Ltd	10343	11206	0.064379942	10697
2015	15	National Bank of Kenya Ltd	9784	10531	0.086619642	12248
2006	16	National Industrial Credit Bank	2700	2876	0.041939336	2365
2007	16	National Industrial Credit Bank	4058	4287	0.045996936	2799
2008	16	National Industrial Credit Bank	5070	5398	0.037090641	3747
2009	16	National Industrial Credit Bank	5382	5711	0.04002488	4425
2010	16	National Industrial Credit Bank	6874	7283	0.036961031	4943
2011	16	National Industrial Credit Bank	9073	9623	0.032221129	6831
2012	16	National Industrial Credit Bank	12569	13246	0.032207662	11467
2013	16	National Industrial Credit Bank	14108	14108	0.033808147	11642
2014	16	National Industrial Credit Bank	18826	27340	0.033446743	13711
2015	16	National Industrial Credit Bank	21529	30357	0.033270469	17014

2006	17	Oriental Commercial Bank Ltd	673	673	0.184551681	0
2007	17	Oriental Commercial Bank Ltd	819	819	0.155528554	0
2008	17	Oriental Commercial Bank Ltd	791	809	0.103500761	0
2009	17	Oriental Commercial Bank Ltd	824	850	0.072564612	192
2010	17	Oriental Commercial Bank Ltd	969	1004	0.051132884	328
2011	17	Oriental Commercial Bank Ltd	1074	1113	0.047915539	460
2012	17	Oriental Commercial Bank Ltd	1139	1188	0.05596914	835
2013	17	Oriental Commercial Bank Ltd	1316	1372	0.037195462	836
2014	17	Oriental Commercial Bank Ltd	1387	1450	0.031134649	945
2015	17	Oriental Commercial Bank Ltd	2031	2108	0.030234802	1092
2006	18	Paramount-Universal Bank Ltd	415	415	0.11382023	0
2007	18	Paramount-Universal Bank Ltd	415	415	0.094933333	0
2008	18	Paramount-Universal Bank Ltd	483	492	0.207207207	0
2009	18	Paramount-Universal Bank Ltd	512	527	0.073419709	0
2010	18	Paramount-Universal Bank Ltd	768	785	0.113138686	0
2011	18	Paramount-Universal Bank Ltd	1003	1026	0.107240065	0
2012	18	Paramount-Universal Bank Ltd	1106	1136	0.143813	678
2013	18	Paramount-Universal Bank Ltd	1175	1220	0.147985459	976
2014	18	Paramount-Universal Bank Ltd	1314	1376	0.08338519	1017
2015	18	Paramount-Universal Bank Ltd	1450	1532	0.101509758	1340
2006	19	Standard Chartered Bank Ltd	8368	8623	0.103135324	0
2007	19	Standard Chartered Bank Ltd	8967	9199	0.095123305	0
2008	19	Standard Chartered Bank Ltd	9332	9605	0.087284455	7445
2009	19	Standard Chartered Bank Ltd	10656	10915	0.085405767	9347
2010	19	Standard Chartered Bank Ltd	11394	11729	0.074016955	9777
2011	19	Standard Chartered Bank Ltd	14122	16414	0.061280381	12011
2012	19	Standard Chartered Bank Ltd	21623	23929	0.053591945	19375
2013	19	Standard Chartered Bank Ltd	25831	30721	0.050759747	21526
2014	19	Standard Chartered Bank Ltd	28944	36288	0.050567003	21742
2015	19	Standard Chartered Bank Ltd	33259	40147	0.048308514	22608
2006	20	Transnational Bank Ltd	1104	1104	0.151117405	0
2007	20	Transnational Bank Ltd	1062	1083	0.148333333	0
2008	20	Transnational Bank Ltd	1216	1235	0.139608673	0
2009	20	Transnational Bank Ltd	1305	1325	0.156165859	414
2010	20	Transnational Bank Ltd	1518	1541	0.134013829	444
2011	20	Transnational Bank Ltd	1711	1738	0.084043157	700
2012	20	Transnational Bank Ltd	1790	1825	0.07589436	985
2013	20	Transnational Bank Ltd	1807	1869	0.074177356	1092
2014	20	Transnational Bank Ltd	1814	1915	0.070113592	1263
2015	20	Transnational Bank Ltd	1928	2033	0.072473317	1445

Source: CBK; 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015,

Table 4.16

Measurement Variables iii

Year	Id	Bank	Interest Expense	Non-int. income	Net Profit
2006	3	African Banking Corporation Ltd	0	0	0
2007	3	African Banking Corporation Ltd	0	0	0
2008	3	African Banking Corporation Ltd	0	0	0
2009	3	African Banking Corporation Ltd	0	0	0
2010	3	African Banking Corporation Ltd	361	434	337
2011	3	African Banking Corporation Ltd	513	474	370
2012	3	African Banking Corporation Ltd	1354	490	381
2013	3	African Banking Corporation Ltd	1287	517	442
2014	3	African Banking Corporation Ltd	1352	533	269
2015	3	African Banking Corporation Ltd	1603	463	290
2006	4	Bank of Africa Ltd	185	130	52
2007	4	Bank of Africa Ltd	209	209	115
2008	4	Bank of Africa Ltd	611	578	218
2009	4	Bank of Africa Ltd	1016	755	293
2010	4	Bank of Africa Ltd	1294	884	463
2011	4	Bank of Africa Ltd	2265	1081	577
2012	4	Bank of Africa Ltd	4635	1235	702
2013	4	Bank of Africa Ltd	3690	1440	436
2014	4	Bank of Africa Ltd	3157	888	165
2015	4	Bank of Africa Ltd	3764	1122	-1417
2006	5	Bank of Baroda	0	0	0
2007	5	Bank of Baroda	0	0	0
2008	5	Bank of Baroda	0	0	0
2009	5	Bank of Baroda	0	0	0
2010	5	Bank of Baroda	0	0	0
2011	5	Bank of Baroda	1639	169	1363
2012	5	Bank of Baroda	3753	319	1376
2013	5	Bank of Baroda	3041	275	2039
2014	5	Bank of Baroda	3431	255	2216
2015	5	Bank of Baroda	3884	339	2026
2006	1	Barclays Bank of Kenya Ltd	1492	6187	4492
2007	1	Barclays Bank of Kenya Ltd	2253	7479	4910
2008	1	Barclays Bank of Kenya Ltd	3811	9617	5558
2009	1	Barclays Bank of Kenya Ltd	2747	8627	6091
2010	1	Barclays Bank of Kenya Ltd	1457	10351	10599
2011	1	Barclays Bank of Kenya Ltd	1296	10003	8113
2012	1	Barclays Bank of Kenya Ltd	2896	9279	8741

2013	1	Barclays Bank of Kenya Ltd	2437	9062	7623
2014	1	Barclays Bank of Kenya Ltd	3337	8684	8387
2015	1	Barclays Bank of Kenya Ltd	4875	9051	8401
2006	6	Commercial Bank of Africa Ltd	0	0	0
2007	6	Commercial Bank of Africa Ltd	0	0	0
2008	6	Commercial Bank of Africa Ltd	0	0	1353
2009	6	Commercial Bank of Africa Ltd	0	0	1410
2010	6	Commercial Bank of Africa Ltd	0	0	2073
2011	6	Commercial Bank of Africa Ltd	2475	2967	1671
2012	6	Commercial Bank of Africa Ltd	5497	3576	3123
2013	6	Commercial Bank of Africa Ltd	5486	4361	3470
2014	6	Commercial Bank of Africa Ltd	7824	5212	3384
2015	6	Commercial Bank of Africa Ltd	0	0	0
2006	7	Consolidated Bank of Kenya Ltd	37	238	16
2007	7	Consolidated Bank of Kenya Ltd	51	304	25
2008	7	Consolidated Bank of Kenya Ltd	90	333	96
2009	7	Consolidated Bank of Kenya Ltd	121	394	80
2010	7	Consolidated Bank of Kenya Ltd	266	628	172
2011	7	Consolidated Bank of Kenya Ltd	720	622	149
2012	7	Consolidated Bank of Kenya Ltd	1704	590	139
2013	7	Consolidated Bank of Kenya Ltd	1261	444	-109
2014	7	Consolidated Bank of Kenya Ltd	1141	467	-281
2015	7	Consolidated Bank of Kenya Ltd	0	0	0
2006	2	Cooperative Bank of Kenya Ltd	1079	3578	867
2007	2	Cooperative Bank of Kenya Ltd	1000	3426	1550
2008	2	Cooperative Bank of Kenya Ltd	1729	3954	2374
2009	2	Cooperative Bank of Kenya Ltd	2294	4664	2968
2010	2	Cooperative Bank of Kenya Ltd	2638	6168	4580
2011	2	Cooperative Bank of Kenya Ltd	16859	6451	5366
2012	2	Cooperative Bank of Kenya Ltd	8680	10200	7724
2013	2	Cooperative Bank of Kenya Ltd	5916	12021	9108
2014	2	Cooperative Bank of Kenya Ltd	8076	12951	8015
2015	2	Cooperative Bank of Kenya Ltd	13586	16607	11706
2006	8	Diamond Trust Bank Kenya Ltd	0	0	0
2007	8	Diamond Trust Bank Kenya Ltd	0	0	0
2008	8	Diamond Trust Bank Kenya Ltd	0	0	0
2009	8	Diamond Trust Bank Kenya Ltd	2935	1548	1354
2010	8	Diamond Trust Bank Kenya Ltd	2481	2874	2482
2011	8	Diamond Trust Bank Kenya Ltd	3212	2744	2996
2012	8	Diamond Trust Bank Kenya Ltd	7332	3074	4067
2013	8	Diamond Trust Bank Kenya Ltd	6029	3349	5230

2014	8	Diamond Trust Bank Kenya Ltd	7769	3776	5708
2015	8	Diamond Trust Bank Kenya Ltd	9897	4697	6599
2006	9	Equity Bank Ltd	0	0	0
2007	9	Equity Bank Ltd	0	0	0
2008	9	Equity Bank Ltd	0	0	0
2009	9	Equity Bank Ltd	0	0	0
2010	9	Equity Bank Ltd	2061	10438	8950
2011	9	Equity Bank Ltd	3116	12447	12679
2012	9	Equity Bank Ltd	6883	12863	17248
2013	9	Equity Bank Ltd	5399	15370	19150
2014	9	Equity Bank Ltd	6192	18474	21300
2015	9	Equity Bank Ltd	9330	21939	23957
2006	10	Family Bank Ltd	0	0	0
2007	10	Family Bank Ltd	0	0	0
2008	10	Family Bank Ltd	142	776	366
2009	10	Family Bank Ltd	199	777	220
2010	10	Family Bank Ltd	225	1448	364
2011	10	Family Bank Ltd	490	1411	364
2012	10	Family Bank Ltd	1484	1438	561
2013	10	Family Bank Ltd	903	1852	1245
2014	10	Family Bank Ltd	1748	8012	1809
2015	10	Family Bank Ltd	3632	9376	1982
2006	11	Giro Commercial Bank Ltd	0	0	0
2007	11	Giro Commercial Bank Ltd	0	0	0
2008	11	Giro Commercial Bank Ltd	0	0	0
2009	11	Giro Commercial Bank Ltd	340	159	148
2010	11	Giro Commercial Bank Ltd	449	635	513
2011	11	Giro Commercial Bank Ltd	631	150	301
2012	11	Giro Commercial Bank Ltd	1159	127	226
2013	11	Giro Commercial Bank Ltd	800	111	378
2014	11	Giro Commercial Bank Ltd	863	187	395
2015	11	Giro Commercial Bank Ltd	1020	137	452
2015	13	Imperial Bank Ltd	0	0	0
2006	13	Imperial Bank Ltd	0	279	272
2007	13	Imperial Bank Ltd	0	482	376
2008	13	Imperial Bank Ltd	0	467	465
2009	13	Imperial Bank Ltd	0	522	555
2010	13	Imperial Bank Ltd	922	860	0
2011	13	Imperial Bank Ltd	1784	890	1112
2012	13	Imperial Bank Ltd	3841	1145	1342
2013	13	Imperial Bank Ltd	0	0	0

2014	13	Imperial Bank Ltd	0	0	0
2006	12	Investment & Mortgages Bank Ltd	864	482	936
2007	12	Investment & Mortgages Bank Ltd	1057	648	1294
2008	12	Investment & Mortgages Bank Ltd	3932	1830	936
2009	12	Investment & Mortgages Bank Ltd	2608	1010	1247
2010	12	Investment & Mortgages Bank Ltd	2779	2146	2524
2011	12	Investment & Mortgages Bank Ltd	3468	2396	3472
2012	12	Investment & Mortgages Bank Ltd	7447	3352	4119
2013	12	Investment & Mortgages Bank Ltd	5595	3437	4981
2014	12	Investment & Mortgages Bank Ltd	6653	2996	5234
2015	12	Investment & Mortgages Bank Ltd	8645	3449	6032
2006	14	Kenya Commercial Bank Ltd	0	0	0
2007	14	Kenya Commercial Bank Ltd	0	0	0
2008	14	Kenya Commercial Bank Ltd	2970	7652	4190
2009	14	Kenya Commercial Bank Ltd	3499	8125	4088
2010	14	Kenya Commercial Bank Ltd	3464	11016	7177
2011	14	Kenya Commercial Bank Ltd	4616	16022	0
2012	14	Kenya Commercial Bank Ltd	12445	15620	12203
2013	14	Kenya Commercial Bank Ltd	8629	14878	14341
2014	14	Kenya Commercial Bank Ltd	11527	22001	16848
2015	14	Kenya Commercial Bank Ltd	17147	22267	19623
2006	15	National Bank of Kenya Ltd	0	0	0
2007	15	National Bank of Kenya Ltd	0	0	0
2008	15	National Bank of Kenya Ltd	821	2101	1240
2009	15	National Bank of Kenya Ltd	1152	2404	1462
2010	15	National Bank of Kenya Ltd	1064	2733	2021
2011	15	National Bank of Kenya Ltd	1376	2714	1546
2012	15	National Bank of Kenya Ltd	3655	2835	729
2013	15	National Bank of Kenya Ltd	2527	2857	1112
2014	15	National Bank of Kenya Ltd	3899	3136	870
2015	15	National Bank of Kenya Ltd	5850	3157	-1153
2006	16	National Industrial Credit Bank Ltd	911	515	457
2007	16	National Industrial Credit Bank Ltd	1159	736	745
2008	16	National Industrial Credit Bank Ltd	1732	1149	1037
2009	16	National Industrial Credit Bank Ltd	2011	1427	1085
2010	16	National Industrial Credit Bank Ltd	1543	1814	1863
2011	16	National Industrial Credit Bank Ltd	2552	2323	2707
2012	16	National Industrial Credit Bank Ltd	5983	2832	3036
2013	16	National Industrial Credit Bank Ltd	4374	3155	3237
2014	16	National Industrial Credit Bank Ltd	5712	3508	4116
2015	16	National Industrial Credit Bank Ltd	7271	3955	4485

2006	17	Oriental Commercial Bank Ltd	0	0	0
2007	17	Oriental Commercial Bank Ltd	0	0	0
2008	17	Oriental Commercial Bank Ltd	0	0	0
2009	17	Oriental Commercial Bank Ltd	98	10	38
2010	17	Oriental Commercial Bank Ltd	192	173	156
2011	17	Oriental Commercial Bank Ltd	265	151	152
2012	17	Oriental Commercial Bank Ltd	573	93	94
2013	17	Oriental Commercial Bank Ltd	433	79	140
2014	17	Oriental Commercial Bank Ltd	556	85	72
2015	17	Oriental Commercial Bank Ltd	673	84	43
2006	18	Paramount-Universal Bank Ltd	0	0	0
2007	18	Paramount-Universal Bank Ltd	0	0	0
2008	18	Paramount-Universal Bank Ltd	0	0	0
2009	18	Paramount-Universal Bank Ltd	0	0	0
2010	18	Paramount-Universal Bank Ltd	0	0	0
2011	18	Paramount-Universal Bank Ltd	0	0	0
2012	18	Paramount-Universal Bank Ltd	556	193	110
2013	18	Paramount-Universal Bank Ltd	666	38	95
2014	18	Paramount-Universal Bank Ltd	681	121	148
2015	18	Paramount-Universal Bank Ltd	784	-44	158
2006	19	Standard Chartered Bank Ltd	0	0	2634
2007	19	Standard Chartered Bank Ltd	0	0	3469
2008	19	Standard Chartered Bank Ltd	1568	4232	3250
2009	19	Standard Chartered Bank Ltd	2010	4909	4732
2010	19	Standard Chartered Bank Ltd	1662	5787	5376
2011	19	Standard Chartered Bank Ltd	2159	6062	5836
2012	19	Standard Chartered Bank Ltd	5633	6929	8069
2013	19	Standard Chartered Bank Ltd	5125	7016	9262
2014	19	Standard Chartered Bank Ltd	4441	8286	10436
2015	19	Standard Chartered Bank Ltd	5007	7212	6342
2006	20	Transnational Bank Ltd	0	0	0
2007	20	Transnational Bank Ltd	0	0	0
2008	20	Transnational Bank Ltd	0	0	0
2009	20	Transnational Bank Ltd	80	149	90
2010	20	Transnational Bank Ltd	97	310	142
2011	20	Transnational Bank Ltd	168	309	203
2012	20	Transnational Bank Ltd	433	415	213
2013	20	Transnational Bank Ltd	394	215	158
2014	20	Transnational Bank Ltd	485	185	128
2015	20	Transnational Bank Ltd	584	225	168

Source: CBK; 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015,

Table 4.17

Measurement Variables.iv

Year	Id	Bank	Loans	Debt	Npl	Staff	Over heads
2006	3	African Banking Corporation Ltd	0	0	0	**0**	0
2007	3	African Banking Corporation Ltd	0	0	0	**0**	0
2008	3	African Banking Corporation Ltd	0	0	0	**0**	0
2009	3	African Banking Corporation Ltd	0	0	0	**0**	0
2010	3	African Banking Corporation Ltd	8028	8644	40	286	601
2011	3	African Banking Corporation Ltd	0	10793	12	350	714
2012	3	African Banking Corporation Ltd	10134	17338	31	466	844
2013	3	African Banking Corporation Ltd	11491	17857	49	608	1125
2014	3	African Banking Corporation Ltd	13680	19225	162	716	1414
2015	3	African Banking Corporation Ltd	15292	19587	88	685	1358
2006	4	Bank of Africa Ltd	3773	5509	0	154	357
2007	4	Bank of Africa Ltd	4579	6394	11	183	416
2008	4	Bank of Africa Ltd	10235	16536	50	481	1042
2009	4	Bank of Africa Ltd	13730	22290	45	677	1405
2010	4	Bank of Africa Ltd	19557	32783	107	792	1732
2011	4	Bank of Africa Ltd	29982	47196	172	1049	2290
2012	4	Bank of Africa Ltd	29986	47227	76	1310	2905
2013	4	Bank of Africa Ltd	37938	58982	131	1587	3383
2014	4	Bank of Africa Ltd	38465	54298	561	1170	2639
2015	4	Bank of Africa Ltd	37799	60784	2778	1295	2911
2006	5	Bank of Baroda	0	0	0	0	0
2007	5	Bank of Baroda	0	0	0	0	0
2008	5	Bank of Baroda	0	0	0	0	0
2009	5	Bank of Baroda	0	0	0	0	0
2010	5	Bank of Baroda	0	0	0	0	0
2011	5	Bank of Baroda	19144	31764	199	284	579
2012	5	Bank of Baroda	21922	40379	8	384	792
2013	5	Bank of Baroda	23578	44452	71	378	743
2014	5	Bank of Baroda	28388	52077	85	412	851
2015	5	Bank of Baroda	31018	56904	601	473	960
2006	1	Barclays Bank of Kenya Ltd	78412	102860	881	3081	7767
2007	1	Barclays Bank of Kenya Ltd	108670	140092	687	4562	11095
2008	1	Barclays Bank of Kenya Ltd	109368	148017	1282	7101	14329
2009	1	Barclays Bank of Kenya Ltd	94056	140666	513	7223	13882
2010	1	Barclays Bank of Kenya Ltd	88347	140950	1200	8398	14049
2011	1	Barclays Bank of Kenya Ltd	102448	137806	729	7347	13539
2012	1	Barclays Bank of Kenya Ltd	106973	155239	144	7814	14260

2013	1	Barclays Bank of Kenya Ltd	121504	174367	1223	8114	15565
2014	1	Barclays Bank of Kenya Ltd	128991	187486	1405	8100	14590
2015	1	Barclays Bank of Kenya Ltd	149834	201161	1766	9305	15622
2006	6	Commercial Bank of Africa Ltd	0	0	0	0	0
2007	6	Commercial Bank of Africa Ltd	0	0	0	0	0
2008	6	Commercial Bank of Africa Ltd	29290	0	272	0	0
2009	6	Commercial Bank of Africa Ltd	34478	0	263	0	0
2010	6	Commercial Bank of Africa Ltd	38642	0	798	0	0
2011	6	Commercial Bank of Africa Ltd	47364	84087	310	1793	3916
2012	6	Commercial Bank of Africa Ltd	53120	105426	173	2144	4485
2013	6	Commercial Bank of Africa Ltd	68640	130659	488	2510	6071
2014	6	Commercial Bank of Africa Ltd	99674	178963	1728	2702	8504
2015	6	Commercial Bank of Africa Ltd	0	0	0	0	0
2006	7	Consolidated Bank of Kenya Ltd	1642	2714	52	168	429
2007	7	Consolidated Bank of Kenya Ltd	2245	3360	99	204	497
2008	7	Consolidated Bank of Kenya Ltd	2750	3811	63	186	552
2009	7	Consolidated Bank of Kenya Ltd	3868	5972	102	318	689
2010	7	Consolidated Bank of Kenya Ltd	6047	9001	117	400	873
2011	7	Consolidated Bank of Kenya Ltd	9197	13883	81	576	1159
2012	7	Consolidated Bank of Kenya Ltd	10077	16426	167	599	1179
2013	7	Consolidated Bank of Kenya Ltd	10855	15536	406	635	1254
2014	7	Consolidated Bank of Kenya Ltd	9212	13509	447	644	1207
2015	7	Consolidated Bank of Kenya Ltd	0	0	0	0	0
2006	2	Cooperative Bank of Kenya Ltd	44692	52854	16655	1910	4236
2007	2	Cooperative Bank of Kenya Ltd	45412	58864	7367	2417	5257
2008	2	Cooperative Bank of Kenya Ltd	60418	69877	7509	2939	5888
2009	2	Cooperative Bank of Kenya Ltd	66620	94386	4346	3844	7354
2010	2	Cooperative Bank of Kenya Ltd	90965	133744	4346	4493	9231
2011	2	Cooperative Bank of Kenya Ltd	114101	147360	4692	5511	11417
2012	2	Cooperative Bank of Kenya Ltd	123824	171221	4736	6096	13171
2013	2	Cooperative Bank of Kenya Ltd	141608	194631	4521	8013	16605
2014	2	Cooperative Bank of Kenya Ltd	183942	242519	4456	9780	20265
2015	2	Cooperative Bank of Kenya Ltd	215745	293197	7173	8927	19372
2006	8	Diamond Trust Bank Kenya Ltd	0	0	58	0	0
2007	8	Diamond Trust Bank Kenya Ltd	0	0	66	0	0
2008	8	Diamond Trust Bank Kenya Ltd	0	0	190	0	0
2009	8	Diamond Trust Bank Kenya Ltd	41518	58590	295	1324	2762
2010	8	Diamond Trust Bank Kenya Ltd	51260	73340	557	1769	3671
2011	8	Diamond Trust Bank Kenya Ltd	71297	94510	588	365	4583
2012	8	Diamond Trust Bank Kenya Ltd	87707	116834	984	420	5188
2013	8	Diamond Trust Bank Kenya Ltd	110945	142776	898	2715	6222

2014	8	Diamond Trust Bank Kenya Ltd	137654	179275	851	2941	7196
2015	8	Diamond Trust Bank Kenya Ltd	177544	233303	2150	3350	8171
2006	9	Equity Bank Ltd	0	0	0	0	0
2007	9	Equity Bank Ltd	0	0	0	0	0
2008	9	Equity Bank Ltd	0	0	0	0	0
2009	9	Equity Bank Ltd	0	0	0	0	0
2010	9	Equity Bank Ltd	78301	115814	1904	5236	13201
2011	9	Equity Bank Ltd	113823	162008	1629	5988	15990
2012	9	Equity Bank Ltd	135692	200254	1608	7145	19578
2013	9	Equity Bank Ltd	171363	226173	2401	9024	22710
2014	9	Equity Bank Ltd	214170	280795	5214	10775	26348
2015	9	Equity Bank Ltd	269892	355926	5199	10291	32104
2006	10	Family Bank Ltd	0	0	0	0	0
2007	10	Family Bank Ltd	0	0	0	0	0
2008	10	Family Bank Ltd	5889	9056	95	661	706
2009	10	Family Bank Ltd	7675	11600	71	756	819
2010	10	Family Bank Ltd	10298	17082	325	888	2275
2011	10	Family Bank Ltd	16332	22678	337	1112	2906
2012	10	Family Bank Ltd	17868	26108	645	1357	3215
2013	10	Family Bank Ltd	27943	37505	321	1761	4196
2014	10	Family Bank Ltd	37925	51144	389	2303	4957
2015	10	Family Bank Ltd	55853	69239	211	2640	6207
2006	11	Giro Commercial Bank Ltd	0	0	0	0	0
2007	11	Giro Commercial Bank Ltd	0	0	0	0	0
2008	11	Giro Commercial Bank Ltd	0	0	0	0	0
2009	11	Giro Commercial Bank Ltd	3682	6057	13	174	322
2010	11	Giro Commercial Bank Ltd	4933	8894	28	197	380
2011	11	Giro Commercial Bank Ltd	6360	10267	18	205	392
2012	11	Giro Commercial Bank Ltd	5519	10504	812	215	406
2013	11	Giro Commercial Bank Ltd	6908	11536	7	240	442
2014	11	Giro Commercial Bank Ltd	7716	12659	17	252	451
2015	11	Giro Commercial Bank Ltd	9327	12975	18	267	473
2015	13	Imperial Bank Ltd	0	0	0	0	0
2006	13	Imperial Bank Ltd	5920	8052	49	0	613
2007	13	Imperial Bank Ltd	7721	10143	46	0	834
2008	13	Imperial Bank Ltd	9020	11520	44	404	910
2009	13	Imperial Bank Ltd	10399	13111	58	521	1027
2010	13	Imperial Bank Ltd	11152	16357	126	0	0
2011	13	Imperial Bank Ltd	15659	23444	103	820	0
2012	13	Imperial Bank Ltd	21292	33283	156	952	0
2013	13	Imperial Bank Ltd	0	0	0	0	0

2014	13	Imperial Bank Ltd	0	0	0	0	0
2006	12	Investment & Mortgages Bank Ltd	14702	19553	77	344	788
2007	12	Investment & Mortgages Bank Ltd	19214	25553	125	453	1062
2008	12	Investment & Mortgages Bank Ltd	29775	37679	166	707	1447
2009	12	Investment & Mortgages Bank Ltd	30480	46971	106	897	1581
2010	12	Investment & Mortgages Bank Ltd	50257	73031	300	1196	2152
2011	12	Investment & Mortgages Bank Ltd	66365	36592	249	1484	2755
2012	12	Investment & Mortgages Bank Ltd	87835	50066	60	2147	4120
2013	12	Investment & Mortgages Bank Ltd	91882	117508	472	2436	4663
2014	12	Investment & Mortgages Bank Ltd	101610	131738	787	2071	3960
2015	12	Investment & Mortgages Bank Ltd	114927	138006	695	2463	5023
2006	14	Kenya Commercial Bank Ltd	0	0	0	0	0
2007	14	Kenya Commercial Bank Ltd	0	0	0	0	0
2008	14	Kenya Commercial Bank Ltd	93522	170174	1408	5973	12006
2009	14	Kenya Commercial Bank Ltd	120467	172207	717	7144	15575
2010	14	Kenya Commercial Bank Ltd	148113	212226	2144	0	20863
2011	14	Kenya Commercial Bank Ltd	198724	286351	1896	10883	24778
2012	14	Kenya Commercial Bank Ltd	211664	314039	3756	11861	29048
2013	14	Kenya Commercial Bank Ltd	227721	327496	2905	13469	29986
2014	14	Kenya Commercial Bank Ltd	283732	414704	5058	13993	34162
2015	14	Kenya Commercial Bank Ltd	345968	476840	4713	15310	35024
2006	15	National Bank of Kenya Ltd	0	0	0	0	0
2007	15	National Bank of Kenya Ltd	0	0	0	0	0
2008	15	National Bank of Kenya Ltd	8950	36487	361	1693	2904
2009	15	National Bank of Kenya Ltd	13156	43496	143	1986	3433
2010	15	National Bank of Kenya Ltd	20844	50097	362	2266	4039
2011	15	National Bank of Kenya Ltd	28068	58208	692	2635	4658
2012	15	National Bank of Kenya Ltd	28346	56704	725	3110	5737
2013	15	National Bank of Kenya Ltd	39566	80667	287	3570	6395
2014	15	National Bank of Kenya Ltd	65641	110867	525	3673	6977
2015	15	National Bank of Kenya Ltd	67803	114386	3719	3561	7473
2006	16	National Industrial Credit Bank Ltd	16570	23026	133	0	1159
2007	16	National Industrial Credit Bank Ltd	22209	26543	100	661	1226
2008	16	National Industrial Credit Bank Ltd	29954	37053	194	813	1485
2009	16	National Industrial Credit Bank Ltd	32511	40765	463	1030	1850
2010	16	National Industrial Credit Bank Ltd	40754	50660	316	1262	2288
2011	16	National Industrial Credit Bank Ltd	56624	68461	297	1598	2739
2012	16	National Industrial Credit Bank Ltd	71540	92866	258	1978	3500
2013	16	National Industrial Credit Bank Ltd	83493	103493	1092	2367	4320
2014	16	National Industrial Credit Bank Ltd	100575	122429	329	2560	4946
2015	16	National Industrial Credit Bank Ltd	114657	139442	1652	3063	5648

2006	17	Oriental Commercial Bank Ltd	0	0	0	0	0
2007	17	Oriental Commercial Bank Ltd	0	0	0	0	0
2008	17	Oriental Commercial Bank Ltd	0	0	0	0	0
2009	17	Oriental Commercial Bank Ltd	1518	2070	9	70	157
2010	17	Oriental Commercial Bank Ltd	2450	3420	50	88	226
2011	17	Oriental Commercial Bank Ltd	2798	3740	45	99	244
2012	17	Oriental Commercial Bank Ltd	3452	4835	3	113	241
2013	17	Oriental Commercial Bank Ltd	4035	5482	14	134	304
2014	17	Oriental Commercial Bank Ltd	4627	6261	58	156	390
2015	17	Oriental Commercial Bank Ltd	5245	6256	87	167	461
2006	18	Paramount-Universal Bank Ltd	0	0	0	0	0
2007	18	Paramount-Universal Bank Ltd	0	0	0	0	0
2008	18	Paramount-Universal Bank Ltd	0	0	0	0	0
2009	18	Paramount-Universal Bank Ltd	0	0	0	0	0
2010	18	Paramount-Universal Bank Ltd	0	0	0	0	0
2011	18	Paramount-Universal Bank Ltd	0	0	0	0	0
2012	18	Paramount-Universal Bank Ltd	2739	6118	8	69	217
2013	18	Paramount-Universal Bank Ltd	3272	6798	13	74	228
2014	18	Paramount-Universal Bank Ltd	4447	9024	10	97	286
2015	18	Paramount-Universal Bank Ltd	5871	8989	12	122	331
2006	19	Standard Chartered Bank Ltd	37415	70884	502	0	3617
2007	19	Standard Chartered Bank Ltd	41025	80205	206	0	4433
2008	19	Standard Chartered Bank Ltd	44857	87520	365	2998	5024
2009	19	Standard Chartered Bank Ltd	58016	109861	474	2840	5043
2010	19	Standard Chartered Bank Ltd	61599	122415	332	3394	5888
2011	19	Standard Chartered Bank Ltd	97417	143352	412	3736	7245
2012	19	Standard Chartered Bank Ltd	114534	164599	716	4649	8398
2013	19	Standard Chartered Bank Ltd	131965	184184	783	5094	9279
2014	19	Standard Chartered Bank Ltd	126275	181837	1047	5767	10193
2015	19	Standard Chartered Bank Ltd	123409	192713	4591	6218	11062
2006	20	Transnational Bank Ltd	0	0	0	0	0
2007	20	Transnational Bank Ltd	0	0	0	0	0
2008	20	Transnational Bank Ltd	0	0	0	0	0
2009	20	Transnational Bank Ltd	1939	2039	33	202	362
2010	20	Transnational Bank Ltd	2138	3221	61	225	438
2011	20	Transnational Bank Ltd	3308	5543	64	262	482
2012	20	Transnational Bank Ltd	4238	6967	51	309	593
2013	20	Transnational Bank Ltd	5144	7788	87	331	681
2014	20	Transnational Bank Ltd	6009	8325	91	351	680
2015	20	Transnational Bank Ltd	6649	8419	77	367	758

Source: CBK; 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015,

Table 4.18

Measurement Variables.v

Year	Id	Bank	Cash+Securities	Agent	Mobile	CRB
2006	3	African Banking Corporation Ltd	0	0	0	0
2007	3	African Banking Corporation Ltd	0	0	0	0
2008	3	African Banking Corporation Ltd	0	0	0	0
2009	3	African Banking Corporation Ltd	0	0	0	0
2010	3	African Banking Corporation Ltd	3919	0	1	0
2011	3	African Banking Corporation Ltd	3954	0	1	0
2012	3	African Banking Corporation Ltd	8104	0	1	1
2013	3	African Banking Corporation Ltd	7581	1	1	1
2014	3	African Banking Corporation Ltd	6633	1	1	1
2015	3	African Banking Corporation Ltd	5734	1	1	1
2006	4	Bank of Africa Ltd	987	0	0	0
2007	4	Bank of Africa Ltd	1228	0	0	0
2008	4	Bank of Africa Ltd	5262	0	0	0
2009	4	Bank of Africa Ltd	7136	0	0	0
2010	4	Bank of Africa Ltd	13441	0	0	0
2011	4	Bank of Africa Ltd	15292	0	1	0
2012	4	Bank of Africa Ltd	9362	0	1	1
2013	4	Bank of Africa Ltd	12565	0	1	1
2014	4	Bank of Africa Ltd	12823	0	1	1
2015	4	Bank of Africa Ltd	19796	0	1	1
2006	5	Bank of Baroda	0	0	0	0
2007	5	Bank of Baroda	0	0	0	0
2008	5	Bank of Baroda	0	0	0	0
2009	5	Bank of Baroda	0	0	0	0
2010	5	Bank of Baroda	0	0	0	0
2011	5	Bank of Baroda	15867	0	0	0
2012	5	Bank of Baroda	22948	0	0	1
2013	5	Bank of Baroda	26649	0	0	1
2014	5	Bank of Baroda	31502	0	0	1
2015	5	Bank of Baroda	35453	0	1	1
2006	1	Barclays Bank of Kenya Ltd	37353	0	0	0
2007	1	Barclays Bank of Kenya Ltd	36495	0	0	0
2008	1	Barclays Bank of Kenya Ltd	42002	0	0	0
2009	1	Barclays Bank of Kenya Ltd	53612	0	1	0
2010	1	Barclays Bank of Kenya Ltd	69127	0	1	0
2011	1	Barclays Bank of Kenya Ltd	49811	0	1	0
2012	1	Barclays Bank of Kenya Ltd	64022	0	1	1

2013	1	Barclays Bank of Kenya Ltd	64467	0	1	1
2014	1	Barclays Bank of Kenya Ltd	81686	0	1	1
2015	1	Barclays Bank of Kenya Ltd	66147	1	1	1
2006	6	Commercial Bank of Africa Ltd	0	0	0	0
2007	6	Commercial Bank of Africa Ltd	0	0	0	0
2008	6	Commercial Bank of Africa Ltd	0	0	0	0
2009	6	Commercial Bank of Africa Ltd	0	0	0	0
2010	6	Commercial Bank of Africa Ltd	0	0	0	0
2011	6	Commercial Bank of Africa Ltd	23474	0	0	0
2012	6	Commercial Bank of Africa Ltd	41413	0	1	1
2013	6	Commercial Bank of Africa Ltd	12806	0	1	1
2014	6	Commercial Bank of Africa Ltd	13619	0	1	1
2015	6	Commercial Bank of Africa Ltd	0	0	1	1
2006	7	Consolidated Bank of Kenya Ltd	976	0	0	0
2007	7	Consolidated Bank of Kenya Ltd	1039	0	0	0
2008	7	Consolidated Bank of Kenya Ltd	1014	0	0	0
2009	7	Consolidated Bank of Kenya Ltd	2213	0	0	0
2010	7	Consolidated Bank of Kenya Ltd	2996	0	0	0
2011	7	Consolidated Bank of Kenya Ltd	4603	1	0	0
2012	7	Consolidated Bank of Kenya Ltd	6474	1	0	1
2013	7	Consolidated Bank of Kenya Ltd	4405	1	0	1
2014	7	Consolidated Bank of Kenya Ltd	4391	1	0	1
2015	7	Consolidated Bank of Kenya Ltd	0	1	0	1
2006	2	Cooperative Bank of Kenya Ltd	24153	0	0	0
2007	2	Cooperative Bank of Kenya Ltd	22085	0	0	0
2008	2	Cooperative Bank of Kenya Ltd	24627	0	0	0
2009	2	Cooperative Bank of Kenya Ltd	39692	0	0	0
2010	2	Cooperative Bank of Kenya Ltd	55166	1	1	0
2011	2	Cooperative Bank of Kenya Ltd	43853	1	1	0
2012	2	Cooperative Bank of Kenya Ltd	64491	1	1	1
2013	2	Cooperative Bank of Kenya Ltd	71809	1	1	1
2014	2	Cooperative Bank of Kenya Ltd	84868	1	1	1
2015	2	Cooperative Bank of Kenya Ltd	110627	1	1	1
2006	8	Diamond Trust Bank Kenya Ltd	0	0	0	0
2007	8	Diamond Trust Bank Kenya Ltd	0	0	0	0
2008	8	Diamond Trust Bank Kenya Ltd	0	0	0	0
2009	8	Diamond Trust Bank Kenya Ltd	21188	0	0	0
2010	8	Diamond Trust Bank Kenya Ltd	27874	0	1	0
2011	8	Diamond Trust Bank Kenya Ltd	32155	0	1	0
2012	8	Diamond Trust Bank Kenya Ltd	41976	1	1	1
2013	8	Diamond Trust Bank Kenya Ltd	46940	1	1	1

2014	8	Diamond Trust Bank Kenya Ltd	64712	1	1	1
2015	8	Diamond Trust Bank Kenya Ltd	83306	1	1	1
2006	9	Equity Bank Ltd	0	0	0	0
2007	9	Equity Bank Ltd	0	0	0	0
2008	9	Equity Bank Ltd	0	0	0	0
2009	9	Equity Bank Ltd	0	0	0	0
2010	9	Equity Bank Ltd	21935	0	0	0
2011	9	Equity Bank Ltd	38349	0	0	0
2012	9	Equity Bank Ltd	30224	0	0	0
2013	9	Equity Bank Ltd	24775	0	0	0
2014	9	Equity Bank Ltd	28022	0	0	0
2015	9	Equity Bank Ltd	49164	0	0	0
2006	10	Family Bank Ltd	0	0	0	0
2007	10	Family Bank Ltd	0	0	0	0
2008	10	Family Bank Ltd	3252	0	0	0
2009	10	Family Bank Ltd	3553	0	1	0
2010	10	Family Bank Ltd	7197	0	1	0
2011	10	Family Bank Ltd	6408	1	1	0
2012	10	Family Bank Ltd	9331	1	1	1
2013	10	Family Bank Ltd	12190	1	1	1
2014	10	Family Bank Ltd	18961	1	1	1
2015	10	Family Bank Ltd	18749	1	1	1
2006	11	Giro Commercial Bank Ltd	0	0	0	0
2007	11	Giro Commercial Bank Ltd	0	0	0	0
2008	11	Giro Commercial Bank Ltd	0	0	0	0
2009	11	Giro Commercial Bank Ltd	3057	0	0	0
2010	11	Giro Commercial Bank Ltd	5075	0	0	0
2011	11	Giro Commercial Bank Ltd	5131	0	0	0
2012	11	Giro Commercial Bank Ltd	6357	0	0	1
2013	11	Giro Commercial Bank Ltd	6321	0	0	1
2014	11	Giro Commercial Bank Ltd	7029	0	0	1
2015	11	Giro Commercial Bank Ltd	6168	0	0	1
2015	13	Imperial Bank Ltd	0	0	0	1
2006	13	Imperial Bank Ltd	3497	0	0	0
2007	13	Imperial Bank Ltd	4165	0	0	0
2008	13	Imperial Bank Ltd	4630	0	0	0
2009	13	Imperial Bank Ltd	5238	0	0	0
2010	13	Imperial Bank Ltd	7806	0	0	0
2011	13	Imperial Bank Ltd	10435	0	0	0
2012	13	Imperial Bank Ltd	15250	0	0	1
2013	13	Imperial Bank Ltd	0	0	0	1

2014	13	Imperial Bank Ltd	0	0	0	1
2006	12	Investment & Mortgages Bank Ltd	5248	0	0	0
2007	12	Investment & Mortgages Bank Ltd	6783	0	0	0
2008	12	Investment & Mortgages Bank Ltd	6949	0	0	0
2009	12	Investment & Mortgages Bank Ltd	20466	0	0	0
2010	12	Investment & Mortgages Bank Ltd	32362	0	1	0
2011	12	Investment & Mortgages Bank Ltd	16907	0	1	0
2012	12	Investment & Mortgages Bank Ltd	20537	0	1	1
2013	12	Investment & Mortgages Bank Ltd	35106	0	1	1
2014	12	Investment & Mortgages Bank Ltd	45667	0	1	1
2015	12	Investment & Mortgages Bank Ltd	41987	1	1	1
2006	14	Kenya Commercial Bank Ltd	0	0	0	0
2007	14	Kenya Commercial Bank Ltd	0	0	0	0
2008	14	Kenya Commercial Bank Ltd	63303	0	0	0
2009	14	Kenya Commercial Bank Ltd	32076	0	1	0
2010	14	Kenya Commercial Bank Ltd	0	1	1	0
2011	14	Kenya Commercial Bank Ltd	57276	1	1	0
2012	14	Kenya Commercial Bank Ltd	77459	1	1	1
2013	14	Kenya Commercial Bank Ltd	89804	1	1	1
2014	14	Kenya Commercial Bank Ltd	0	1	1	1
2015	14	Kenya Commercial Bank Ltd	0	1	1	1
2006	15	National Bank of Kenya Ltd	0	0	0	0
2007	15	National Bank of Kenya Ltd	0	0	0	0
2008	15	National Bank of Kenya Ltd	29831	0	0	0
2009	15	National Bank of Kenya Ltd	35652	1	0	0
2010	15	National Bank of Kenya Ltd	35863	1	0	0
2011	15	National Bank of Kenya Ltd	35631	1	1	0
2012	15	National Bank of Kenya Ltd	33306	1	1	1
2013	15	National Bank of Kenya Ltd	45184	1	1	1
2014	15	National Bank of Kenya Ltd	49319	1	1	1
2015	15	National Bank of Kenya Ltd	47778	1	1	1
2006	16	National Industrial Credit Bank Ltd	0	0	0	0
2007	16	National Industrial Credit Bank Ltd	8068	0	0	0
2008	16	National Industrial Credit Bank Ltd	11317	0	0	0
2009	16	National Industrial Credit Bank Ltd	13220	0	0	0
2010	16	National Industrial Credit Bank Ltd	16443	1	0	0
2011	16	National Industrial Credit Bank Ltd	19113	1	1	0
2012	16	National Industrial Credit Bank Ltd	33147	1	1	1
2013	16	National Industrial Credit Bank Ltd	33000	1	1	1
2014	16	National Industrial Credit Bank Ltd	39037	1	1	1
2015	16	National Industrial Credit Bank Ltd	44376	1	1	1

2006	17	Oriental Commercial Bank Ltd	0	0	0	0
2007	17	Oriental Commercial Bank Ltd	0	0	0	0
2008	17	Oriental Commercial Bank Ltd	0	0	0	0
2009	17	Oriental Commercial Bank Ltd	615	0	0	0
2010	17	Oriental Commercial Bank Ltd	799	0	0	0
2011	17	Oriental Commercial Bank Ltd	750	1	1	0
2012	17	Oriental Commercial Bank Ltd	1165	1	1	1
2013	17	Oriental Commercial Bank Ltd	1314	1	1	1
2014	17	Oriental Commercial Bank Ltd	1030	1	1	1
2015	17	Oriental Commercial Bank Ltd	1315	1	1	1
2006	18	Paramount-Universal Bank Ltd	0	0	0	0
2007	18	Paramount-Universal Bank Ltd	0	0	0	0
2008	18	Paramount-Universal Bank Ltd	0	0	0	0
2009	18	Paramount-Universal Bank Ltd	0	0	0	0
2010	18	Paramount-Universal Bank Ltd	0	0	0	0
2011	18	Paramount-Universal Bank Ltd	0	0	0	0
2012	18	Paramount-Universal Bank Ltd	4060	0	0	1
2013	18	Paramount-Universal Bank Ltd	4301	1	1	1
2014	18	Paramount-Universal Bank Ltd	5538	1	1	1
2015	18	Paramount-Universal Bank Ltd	4310	1	1	1
2006	19	Standard Chartered Bank Ltd	0	0	0	0
2007	19	Standard Chartered Bank Ltd	0	0	0	0
2008	19	Standard Chartered Bank Ltd	8995	0	0	0
2009	19	Standard Chartered Bank Ltd	10055	0	0	0
2010	19	Standard Chartered Bank Ltd	11482	0	1	0
2011	19	Standard Chartered Bank Ltd	12046	0	1	0
2012	19	Standard Chartered Bank Ltd	16490	0	1	1
2013	19	Standard Chartered Bank Ltd	16524	0	1	1
2014	19	Standard Chartered Bank Ltd	18459	0	1	1
2015	19	Standard Chartered Bank Ltd	19950	0	1	1
2006	20	Transnational Bank Ltd	0	0	0	0
2007	20	Transnational Bank Ltd	0	0	0	0
2008	20	Transnational Bank Ltd	0	0	0	0
2009	20	Transnational Bank Ltd	1391	0	0	0
2010	20	Transnational Bank Ltd	1280	0	0	0
2011	20	Transnational Bank Ltd	3686	0	0	0
2012	20	Transnational Bank Ltd	4255	0	0	1
2013	20	Transnational Bank Ltd	3947	0	0	1
2014	20	Transnational Bank Ltd	3569	0	0	1
2015	20	Transnational Bank Ltd	3210	0	0	1

Source: CBK; 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015,

APPENDIX X

Letter of Authorization to carry out Research

SCHOOL OF BUSINESS & ECONOMICS

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25th October, 2016

To Whom It May Concern:

Dear Sir/Madam,

RE: ISAAC KIPRONO KIPROP – GMB/NE/0986/09/14

This is to confirm that the above named is a bonafide student of Kabarak University pursuing a Master of Business Administration (Finance Option).

Isaac has completed his coursework and currently carrying out a study on "***Effect of Selected Bank Delivery Channels and Support Infrastructure on Profitability of Commercial Banks in Kenya.***"

Your assistance will be highly appreciated.

Thank you.

Yours faithfully,

KABARAK UNIVERSITY
DEAN,
BUSINESS SCHOOL
25 OCT 2016
P.O. PRIVATE BAG 20157, KABARAK

Dr. John Gathii
Ag.Dean

Kabarak University Moral Code
AS members of Kabarak University family, we purpose at all times and all places, to set apart in one's heart, Jesus as Lord.
(1 Peter 3:15)