

THE RELATIONSHIP BETWEEN NON INTEREST INCOME AND FINANCIAL  
PERFORMANCE OF COMMERCIAL BANKS IN KENYA

BY

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## DECLARATION

This research project is my original work and has not been submitted for examination in any other University.

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This research project has been submitted for examination with my approval as a university supervisor.

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## **DEDICATION**

This work is dedicated to management of the financial institution, both current and future.

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## **ABSTRACT**

Commercial banks' lending and deposit-taking business has declined in recent years. Deregulation and new technology have eroded banks' comparative advantages and made it easier for nonbank competitors to enter these markets. In response, banks have shifted their sales mix toward noninterest income — by selling 'nonbank' fee-based financial services such as mutual funds; by charging explicit fees for services that used to be 'bundled' together with deposit or loan products; and by adopting securitized lending practices which generate loan origination and servicing fees and reduce the need for deposit financing by moving loans off the books. This study seeks to examine the relationship between non interest income and financial performance of commercial Banks in Kenya.

The study used a descriptive research design. The population of this study comprised all the commercial banks. In this study secondary data was used to investigate the relationship between independent and dependent variables. The data was analysed using descriptive analysis, correlation analysis and regression analysis.

The study show that that there is no significant increase in profit as the bank invest and diversify to non- interest income. The F statistic was also significant suggesting that the model was fit to explain the relationship. The study concludes that noninterest income has partial significant positive impact on financial performance. The study recommends that in order for the financial performance of commercial bank to improve, the management should not highly depend on non interest income but diversify to other income generating activities.

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## **ABBREVIATION**

**CBK** - Central Bank of Kenya Ltd

**ECB** - Earning on Commercial Bank

**BHC** - Bank Holding Companies

**EU** - European Union

**ROE** - Return on Equity

**ROA** - Return on Asset

**OSI**- Other Source Income

**GI**- Gross Income

**Non II**- Non Interest Income

**LN** = Fees and Commissions Income on Loans & Advances

**FX** = Foreign Exchange Trading Income

**DIV** = Dividend Income

**DEP** = Deposit and Transaction Fees and Other Account Fees



# CHAPTER ONE

## INTRODUCTION

### 1.1 Background of the Study

Commercial banks in Kenya derive its income from interest, Non interest and other income, but heavily relying on interest income. They have experienced significant new competition and have lost valuable regulatory protection. The implication of this is reduction in profit margins and deposit intermediation. Thygerson (1995), argues that regulations that for instance facilitated banks to earn interest rate on loan at market rate, while on the other hand paying depository at rate below the market rate, while on the other hand paying depositors at a rate below the market rate to some extent guarantee positive net interest margins with introduction of financial sector liberalization coupled with heavy capital equipments by the regulator, banks have been exposed to intense competition, even from non banking institutions leading to downward pressure on intermediation profit margin.

#### 1.1.1. Non Interest Income

This is defined as revenue that banks earn from areas outside their lending operation or any income that bank earns from activities other than their core intermediation business (taking deposit and making loans) or fro investment. It's also refers as "fee income" since fees constitute of majority of non-interest income.

Examples of non-interest income include deposit and transaction fees, insufficient funds (NSF) fees, annual fees, monthly account service charges, inactivity fees, check and deposit slip fees, etc. Institutions charge fees that provide non-interest income as a way of generating revenue and ensuring liquidity in the event of increased default rates. Fee income covers most

income which is neither interest income nor bank charges. This includes a wide range of sources of income including fund management fees, loan arrangement fees, fees for advice, trust and custody fees, and commission on sales of third party financial products such as insurance.

According to Ritter Silber and Udell (1996), this sources of revenue has become more important in recent times as banks have shifted from traditional interest income to more non traditional sources of revenue, known as non- interest or fee income. These sources of income have a great growth significant in non -interest income. They are various sources of non-interest income that have been discussed according to Thygerson (1995), suggest that noninterest income is generated as a result of three information function of intermediation namely origination services and portfolio management.

Origination sources comprise of loan origination fees security underwriting and loan syndicate fees. According to Young and Roland (1999) suggested that bank's have responded to this phenomenon by shifting their product mix toward noninterest income by selling mutual funds and investment in money market / financial market or government securities.

According to Nairobi stock and market report (2007) commercial bank recorded a decrease in interest income by about 49% in the same period previous year. This long-term downward pressure on net interest margins have forced commercial bank to think of alternative sources of revenue that will ensure earning stability and also mitigate risk exposure (Thygerson, 1995). It is generally believed that diversification by a firm reduces risk, just as diversification of investments by an individual does. In both cases, however, whether the desired risk reduction effect is achieved does of course depend on the correlation between the different activities or lines of business and on the correlation between the prices of the

different investments, hence there is need for bank to focus on other sources of revenue through value adding activities such as service charges, fees, commissions and foreign exchange dealing. According to Ritter Silber and Udell (1996), this sources of revenue has became more important in recent times as banks have shifted from traditional interest income to more non traditional sources of revenue, known as non- interest or fee income. These sources of income have a great growth significant in non -interest income.

In recent years, though, the distinction between types of banks has become blurred, partly by takeovers and partly by traditional retail banks going into fee-earning activities. The profitability of traditional banking activities such as business lending and raising deposits has diminished in recent years, the central bank directive to reduce the interest rate and also reduction in treasury bills. As a result, banks have increasingly turned to new, non-traditional financial activities as a way of maintaining their position as financial intermediaries. The changes are of importance for financial stability. The reason is straightforward. The more unstable is a bank's (or any other firm's) earnings stream, the more risky the firm is. A paper by Hoggarth, Milne and Wood (1998) drew attention to an example of this, comparing banking sector profitability in Britain and Germany. It was observed that banking profitability in Germany was lower than in Britain, but also less variable, suggesting that the systems had pursued alternative routes to stability.

Analysing of income and expense data of commercial banks shows that the dominant sources of revenue is loan interest and discount, Fieldman and Schmidt (1999) found that over 20years non- interest income has transformed for supportive role into a major contributor of banks revenue. In Kenya, interest income has been steadily declining as the relative importance of non -interest income has grown tremendously.

According to the CBK (1999), the total assets in the banking system stood at kshs.4] 8billion in 1999, down by 4% from previous years. Loans and advances accounted for 55% of total assets whereas holding government security accounting for 16%. The proportion of advances to total asset has declined from high of 62% in 1991 to 55% by 1999, and the trend is expected to continue according to central Bank of Kenya prediction, (CBK, 1999)

The Central Bank of Kenya (2002) has also documented that interest rates in Kenya have reduced significantly. As a result of the debate among the political and business fraternities on the negative effects of high interest rates to the growth of the economy, interest rates have reduced from 20 % in 2001 to 18 % in December 2002.

According to Omuodo (2003), as pressure mounts on the banking industry's profitability resulting from over reliance on interest income by banks, it is strategically imperative that banks focus on other revenue streams. National Industrial Credit Bank, NIC, has introduced new products to diversify revenue and to keep its head above the water. Omoudo adds that part of NIC Bank's strategy has been to diversify revenues, by expanding the scope of its activities in addition to its predominant asset finance focus and offering more general commercial banking facilities and other products. Premium financing and provision of custodial services have reduced over reliance on interest income.

Is there valid reason why commercial bank should rely on non- interest and other income other than the traditional interest income? What are the connotations of these sources of income on the bank risk report? This paper seeks to investigate the trends in revenue and risk profile of commercial banks in Kenya and whether they have achieved any risk diversification (focusing on financial performance in terms of profit).

### **1.1.2. Financial Performance**

Sound financial health of a bank is guarantee not only to its depositor but equally significant for shareholders, employees and the whole community as well. Hence effort has been made from time to time to measure the financial position of each bank and manage it efficiently and effectively. The financial position and performance is affected by the operation decision when assets are used effectively to increase profit. Operation decision indicates the effectiveness of the company management in making profit from assets. Therefore operational efficiency can be achieved by dividing sales or revenue with total assets (Sari, 2007). Noninterest income is a part of income that a company can invest in to increase revenue hence increasing the value of equity. The value of equity can be useful to compare profitability between companies in the same industries in this case commercial banks in Kenya.

### **1.1.3 Relationship between Noninterest Income and Financial Performance**

The consequences of noninterest income for the financial performance of commercial banks are not well understood. All else equal, an increase in noninterest income will improve earnings - but an increase in noninterest income seldom occurs without concomitant changes in interest income, variable inputs, fixed inputs, and/or financing structure.

As noninterest income trended up during the 1990s, it was generally believed that shifting banks' income away from intermediation-based activities (in which bank income was subject to credit risk and interest rate risk), and toward fee-based financial products and services, would reduce banks' income volatility. Moreover, it was conventionally believed that expansion into new fee-based products and services reduced earnings volatility via diversification effects. But recent empirical studies indicate that neither of these beliefs holds on average. (Jin and Young-Jae 2009)

## **1.2 Research Problem**

Commercial Bank income depends on interest and non interest income, but interest incomes have declined markedly due lending and deposit taking business declining this is mainly due to CBK publication that directed commercial bank reduce interest lending rate, decrease of treasury bond and bills to as low as 2% leading to revenue declining at a higher rate. According study carried out by Fieldsman and Schmidt (1996), indicated that deregulation and new technology have eroded bank comparative advantage and made it easier for non bank competitor to enter these market, hence their need to evaluate other form of portfolio other than depended on the deposit portfolio and loan interest. In case of Kenyan market the introduction of M-pesa Services has seen many bank transfer services as well as deposit services affected

The sharply drop in interest income have necessitated that bank should increase non interest and other income to compliment the interest income, these will enable banks to maintain earning stability and as well as increase profit flow. Young and Roland (1999) suggested that bank's have responded to this phenomenon by shifting their product mix toward noninterest income by selling mutual funds and investment in money market / financial market or government securities.

Banks rely mainly on non interest income sources so that they can achieve risk diversification, Thygerson (1995), argued that noninterest income is less susceptible to economic recession which may lead to loan delinquencies and losses, its then to offset loss brought by interest income. Roland (1997) observes that there are abnormal returns in the short run for fee based activities.

Gardner Mill and Cooperman (2002), stated that one measure of depository and institution risk exposure is their earnings volatility as depicted by volatility of their net interest Margin, return on assets and return on equity as measured by their standard deviation over time. In general, studies conducted find that combining banking and non banking activities has the potential to reduce earnings instability of commercial bank.

This study seeks to investigate the extent to which commercial banks in Kenya have adopted revenue diversification into non-interest sources and effect of diversification has lead to earning stability. Does the diversification to non interest income increase the performance on commercial banks?

### **1.3 Objective of the Study**

To determine the relationship between noninterest income and financial performance of commercial banks in Kenya

### **1.4 Value of the Study**

This study was significant to a number of parties as indicated below:-

#### **Individual commercial bank**

The study will enable individual bank to evaluate interest and noninterest income and the significant to its operation. To identify other forms of non interest income organization may venture into to enable the organization increase profitability and income stability.

### **Academic community**

The research will contribute to body of knowledge by documenting the contribution and relationship of interest and non interest income to the whole organization and the profitability in financial institution and enhance further research on the same.

### **Shareholders and investor**

The information will enable shareholder to know that their investment are yielding return and also encourage investor to invest in the commercial banks that are diversifying portfolio. How the diversification will provide banks future profitability

### **Bank managers**

Bank manager's income and professional reputations are clearly linked to bank earnings and hence high instability or volatility of earning will fare poorly on their performance on the extreme it will lead to insolvency.

### **Bank regulator**

Bank regulators are vested with the responsibility of protecting the payment systems and also protection of the customer from bank failure this necessitate bank to lay down mechanism of measuring banks stability through its earning. This occurs when there is unstable earning.



## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.1 Introduction**

This chapter present a review of literature related to purpose of the study. The chapter is organised according to specific objectives in order to ensure relevance of research problem. The review has been undertaken in order to eliminate duplication of what has been done and provide a clear understanding of existing knowledge based on the problem area. The review is based on authoritative, recent and original sources such as journals, books theses and dissertations.

#### **2.2 Theoretical Review**

##### **2.2.1 Portfolio Theory and Risk Diversification**

The portfolio theory provides a normative approach to the investor's decision to invest in asset or securities under risk. It is based on assumption that investor s are risk averse. This implies that investor hold well diversified portfolio instead of investing their entire wealth on single asset or security. Portfolio is a combination of individual assets or securities. If investor holds a well diversified portfolio then his concern should be the expected return and risk of the portfolio rather than individual asset or securities. The second assumption is that the return of securities is normal distributed meaning the mean and variance analysis is the foundation of the portfolio decision.

### **2.2.2 The Capital Asset Pricing Model Theory**

The capital asset pricing model (CAPM) of William Sharpe (1964) and John Lintner (1965) marks the birth of asset pricing theory (resulting in a Nobel Prize for Sharpe in 1990). Before their breakthrough, there were no asset pricing models built from first principles about the nature of tastes and investment opportunities and with clear testable predictions about risk and return. Four decades later, the CAPM is still widely used in applications, such as estimating the cost of equity capital for firms and evaluating the performance of managed portfolios.

The attraction of the CAPM is its powerfully simple logic and intuitively pleasing predictions about how to measure risk and about the relation between expected return and risk. Unfortunately, perhaps because of its simplicity, the empirical record of the model is poor - poor enough to invalidate the way it is used in applications. The model's empirical problems may reflect true failings. But they may also be due to shortcomings of the empirical tests, most notably, poor proxies for the market portfolio of invested wealth, which plays a central role in the model's predictions. For perspective on the CAPM's predictions about risk and expected return,

### **2.2.3 Return and Risk of Income Sources**

It appears to be the conventional wisdom that non-interest income is more stable than interest income and that fee-based activities reduce bank risk via diversification. The combination of banking, insurance and securities activities may lead to a more stable profit stream, since the

revenues stemming from different products in a conglomerate organisation are usually imperfectly correlated. While banks' net interest margins are highly dependent on interest-rate movements and economic cycles, fee income provides diversification and greater stability for bank profits. If that is correct, it then follows that mixing interest and non-interest income will reduce the volatility of earnings. For example, the Chairman of Firststar Corporation, Roger Fitzsimmons, observed that "... there is a stability to [fee] income" and Richard Bone, a banking analyst, observed that "banks that have strong fee-based business and that do not have major commitment to the loan sector can weather the storm much better than those banks that are building a loan portfolio".

## **2.2. 4 Return, Risk and Correlation of Income Sources**

Banks have, for many years, earned some non-interest income; trustee business, for example, is a traditional banking activity. But non-interest income provided only a small part of their earnings, and may well, as is certainly the case for trustee business, have been largely unaffected by the economic cycle.

As fee-based activity of banks has increased, this conventional wisdom may no longer be justified. De Young and Roland (1999), in a paper correlating product mix with earnings volatility at commercial banks, consider three fundamental observations each of which suggests that fee-based income need not be more stable than income from traditional banking activities.

Revenue from a bank's traditional lending activities is likely to be relatively stable overtime, because switching and information costs make it costly for either borrower or lender to walk away from a lending relationship, while revenue from fee-based activities may fluctuate from period to period because it may be easier to switch from bank to bank for many of the new

fee-based activities than it is for traditional banking. Second, expanding fee-based services can require substantial additions to fixed costs, which increase the operational leverage of the bank.

Once a lending relationship is established the only cost of an additional loan is the interest expense while the same does not apply for non-interest income where additional staff may be required. Finally, capital is not required for many fee-based activities. This suggests a higher degree of financial leverage; hence earnings volatility may increase.

In addition to these *a priori* reasons for doubting the conventional wisdom there is a growing body of evidence which casts doubt on it. Much of this evidence is for the United States, but there is also some from elsewhere (extensive analysis of the literature review is provided by De Young and Roland (1999)). Johnson and Meinster (1974), and Wall and Eisenbeis (1984) compared the earnings stream of the banking industry with that of other financial industries (example securities, insurance, real estate, leasing). Banking earnings were more volatile than those of some industries but less than those of others, while the correlation of bank earnings was negative with the earnings of some financial industries and positive with others.

### **2.2.5 Interest and Non-Interest Income and Profitability**

According to the ECB survey (2000), drawing on a survey among EU supervisory authorities, net interest income as a percentage of total assets (the interest margin) continuously declined, as an EU average, over the period 1989-98. By contrast, during the same period, an increasing trend can be observed for the non-interest income to assets ratio (from 0.94% to 1.15% in the period 1995-98). Within Europe a wide range of non-interest variation was observed. They also noted that non-interest income is less volatile in Europe than in the United States. With regard to the most recent years, there has been a noteworthy increase

from 32% in 1995 to 41% in 1998 in the relative importance of non-interest income (as a percentage of total operating income) in the EU.

The growth of non-interest income seems to have a positive effect on bank profitability. The positive impact on profitability has, however, been limited by the increased operating costs associated with the development of activities generating non-interest income.

### **2.2.6 Earning on Commercial Bank**

Commercial bank main earnings can be classified as interest and non interest income. Couto (2002) provide a framework for the analysis of bank earnings. He classifies determinants of earnings in structural and secondary categories. Structural categories include net interest income, fee income operating expenses. Secondary determinants include provisions of loan losses, incomes after secondary charges, profit/ loss form banking activities and non-banking subsidiaries. Moreover, they identify that the sensitivity of earnings to changes in interest rates, spreads, loan volumes, delinquency and other factors is an important questions in the analysis of earnings.

### **2.2.7 Why Bank Invest in Non -Interest Income**

Several studies have been advanced as to why the bank invest in noninterest income these include;-

#### **2.2.7.1 New Technology**

New technological developments have resulted to very high competition.

According study carried out by Fieldsman and Schmidt (1996), indicated that deregulation and new technology have eroded bank comparative advantage and made it easier for non

bank competitor to enter these market, hence their need to evaluate other form of portfolio other than depended on the deposit portfolio and loan interest. In case of Kenyan market the introduction of M-pesa Services has seen many bank transfer services as well as deposit services affected

#### **2.2.7.2 Risk Reduction**

Bank that increase non- interest could reduce risk, and it's increase could lead to more diversification

DeYoung and Roland (1999) criticize the conventional wisdom in the banking industry that earnings from fee-based products are more stable than loan-based earnings and that fee-based activities reduce bank risk via diversification. They show that as the average bank tilts its product mix toward fee-based activities and away from traditional lending activities its earnings volatility increases. Saunders and Walters (1994) found that the expansion of banks' activities reduces risk, with the main risk-reduction gains arising from insurance rather than securities activities.

#### **2.2.7J Pressure on Net Interest Margin**

Gardner Mill and Cooperman (2002) stated that one measure of depository and institution risk exposure is their earnings volatility as depicted by volatility of their net interest Margin, return on assets and return on equity as measured by their standard deviation over time.

The interest income has been experiencing reduction due to downward trend interest rate on loan and deposit. Interest rate on other interest income have been greatly affected the Libor rate and interest on risk free rate hence reducing drastically the interest income.

Pressure by central bank to reduce interest rate on loans to customers has seen the decline of interest income.

Hence there is need for banks to increase diversification to non interest to counteract the pressure on interest income. This long-term downward pressure on net interest margins have forced commercial bank to think of alternative sources of revenue that will ensure earning stability and also mitigate risk exposure (Thygerson, 1995)

#### **2.2.7.4 Less Subject to Business Cycle**

Interest income is known to be affected by economic condition prevailing in a country example the financial crisis lead to downward trend in interest rate hence leading to decreased interest income. Whereas non-interest income is not highly affected by economic recession according to Thygerson (1995), he argued that noninterest income is less susceptible to economic recession which may lead to loan delinquencies and losses, its then to offset loss brought by interest income.

### **2.3. Empirical Review**

Several empirical studies have indicated substantial benefits from diversification into non-bank activities, Eisemann (1976), Brewer (1989) and others. More recently, Gallo, Apilado and Kolari (1996) found that a high proportion of mutual fund assets managed relative to total assets of bank holding companies over the period 1987-94 was associated with substantially increased profitability for bank holding companies (Bank holding companies ) and also with risk reduction. Canals (1993) concluded that the increased revenues obtained from new business units have significantly contributed to improving bank performance in recent years.

There are also studies which find that fee-based income stabilises profitability. Saunders and Walters (1994) found that the expansion of banks' activities reduces risk, with the main risk-reduction gains arising from insurance rather than securities activities. Proponents of this view point out that those studies which found risk-reduction benefits from asset diversification generally report their findings in terms of potential, not actual realisations. Heggstad (1972) examined the riskiness of various industries between 1953 and 1967. He measured riskiness by the coefficient of variation of return on equity for 13 different industries. In addition, Heggstad correlated industry earnings with returns in banking. He discovered that commercial banking was one of the least risky activities but also found that industries such as leasing, insurance, or real estate offer risk-reducing diversification potential given their negative correlation with banking.

Also, interestingly, most of these authors tend to suggest that a modest amount of fee-earning activity captures all the potential for risk reduction. For example, Boyd, Hanweck and Pithyachariyakul (1980) measured the correlation between accounting rates of return of bank and non-bank affiliates of Bank holding companies between 1971 and 1977 and concluded that the potential for risk reduction was exhausted at relatively low levels of non-bank activities.

Mester (1992) found that mixing traditional banking activities of originating and monitoring loans with non-traditional activities of loan selling and buying products leads to diseconomies of scope and some economies of scale. This conventional wisdom may however be rooted in the past behaviour of non-interest income.

Several studies have calculated the effects of hypothetical mergers between banks and other types of financial firms. An interesting example is that by Boyd, Graham and Hewitt (1993).



That study, by simulating mergers between bank holding companies and non banking financial firms between 1971 and 1987, and using both accounting and market data, found that risk was reduced by merging with life insurance or property/casualty firms but increased by merging with securities or real estate firms. Wall, Reichert and Mohanty (1993) constructed synthetic portfolios based on the accounting rates of return earned by banks and non-bank financial firms. Their results suggest that, had banks been able to diversify into small amounts of insurance, mutual fund, securities brokerage, or real estate activities, they could have experienced higher returns and lower risk between 1981 and 1989.

More recent US studies have started to disaggregate the data to a lower stage that is firm level than the industry level examined in the previously mentioned papers. A number of approaches were tried and again, suggesting a lack of reliable diversification effects, a variety of results emerged.

According to Boyd and Graham (1986), expansion by Bank holding companies into non-bank activities tended to increase the risk of failure. Their results indicate, however, that when Bank holding companies are more stringently regulated, the positive association between non-bank activity and risk may disappear. Sinkey and Nash (1993) found that credit card lending specialisation (that activity is often securitised in the United States and thus generates fee income) gives higher and more volatile returns than those achieved by banks with 'conventional' product mixes. Demsetz and Strahan (1995) found that, although Bank holding companies tend to become more diversified as they grow larger, this diversification does not necessarily translate into risk reduction because these firms also tend to shift into riskier activities and hold less equity. In other words, the risk-reducing potential of diversification at large Bank holding companies is offset by their lower capital ratios, larger commercial and industrial loan portfolios, and greater use of derivatives. Indicating that it is

easier for 'fee-based customers' to move, Roland (1997) found that high returns from fee-based activities were less persistent than those from lending and deposit-taking. Most recently, De Young and Roland (1999) found that as banks move towards fee-earning activities, revenue volatility increases, as do both total leverage and earnings.

Thygeson (1995), also argued that noninterest income is less susceptible to economic recession which may lead to loan delinquencies and losses, its then to offset loss brought by interest income.

Kwan (1997) studied the implications of securities activities on bank safety and soundness. He examined the returns on securities activities conducted by Section 20 subsidiaries - subsidiaries that were authorised by the Federal Reserve Bank to conduct bank-ineligible securities activities - and their relationship with the returns on banking activities. He found that securities subsidiaries tend to be riskier but not necessary more profitable than their bank affiliates. For securities subsidiaries that are primary dealers of government securities, their higher riskiness partially comes from their higher leverage, whereas for those that are not primary dealers, despite having lower leverage, they tend to be riskier than their bank affiliates because of their aggressive trading behaviour. Nevertheless, in this study, securities subsidiaries appear to provide diversification benefits to bank holding companies. Kwast (1989) found that both the mean and standard deviation of securities activities' returns are greater than those of non-securities activities. Some potential for diversification gains is found, although this appears to be quite limited.

A related study is that of Eisenbeis, Harris and Lakonishok (1984), which examined the effects of one-bank holding company formations on bank stock returns. They found significant positive abnormal returns to the stock of banking firms announcing the formation

of one-Bank holding companies between 1968 and 1970, a brief period during which one-Bank holding companies were permitted to engage in a wide variety of non-banking activities. The authors found no abnormal returns to announcements of one-BHC formations after 1970, when regulation limited the scope of these activities.

In summary, the main conclusion of the US studies is that the picture is much more complex than the conventional wisdom suggests. Whether diversification in fee-based activities actually increases or decreases risk seems to be an empirical question, with the answer varying from case to case and study to study. Theory alone does not answer this question or strongly support either side of the argument. Now, these findings prompt numerous questions and hypotheses, but before turning to these we set out some detailed findings on the behaviour of non-interest income in several major banking industries.

A publication by Aggeler and Feldman (1998) show that while net interest income of the US banks rose by 12% over the period 1992-97, the biggest gain in bank earnings came from non-interest income. Non-interest income grew by 34% in that period - nearly three times as fast as interest income. Also, the most important difference in profitability between large banks (banks with \$1 billion or more in total assets) and small banks concerns the source of income. Non-interest income made up an average of 27% of total income in the large banks between 1992 and 1997, compared with 12% for smaller banks. Since 1992, non-interest income as a per cent of assets increased by 83% in the largest banks but was essentially flat in smaller banks.

Analysis with Fitch-IBCA data using income statement data for the period from 1992 to 1999 reveals that net interest margins have continued to decline in the majority of EU countries. With the prominent exception of Germany profitability before provisions increased in the

period 1996-99 compared with the period 1992-95, as the fall of net interest income was more than offset by lower costs and higher non-interest income. Germany also diverges somewhat from the overall European trend. In the German case there has been little increase in non-interest income as a share of bank assets.

Saunders and Walter (1994), for example, review 18 studies that examine whether nonbank activities reduce bank holding company risk, and conclude that six answer yes, six answer no, and three provide mixed results. This section quickly summarizes the existing literature and contrasts the approach used in the current study. Beginning with the counter actual exercises, Boyd and Graham (1988) and Boyd, Graham, and Hewitt (1993) simulate mergers between bank holding companies and nonbank financial firms and conclude that mergers between bank holding companies and life insurance firms would likely reduce the risk of bankruptcy. Rose (1989) compares financial and nonfinancial firms from 1966 to 1985 and finds that the observed cash-flow correlation between banking and financial service lines was small and positive, implying some diversification benefits. Saunders and Walter (1994) perform a simulation exercise and conclude that there are potential gains in the reduction of risk from bank expansion into new activities. They find that property and casualty insurance is a particularly attractive area for money center bank expansion. More recently, Lown et al. (2000) conclude that life insurance companies are the merger candidates with the biggest potential to reduce risk.

The second approach examines actual return and volatility data related to a wide range of banking activities. Rosen et al. (1989) focus on 319 banks involved in real estate activities from 1980 to 1985 and conclude that shifts toward high levels of real estate investment will likely increase risk. Templeton and Severiens (1992) examine market data for 54 bank holding companies from 1979 to 1986 and conclude that diversification (measured as the

share of market value not attributed to bank assets) is associated with lower variance of shareholder returns. This suggests some diversification benefits, although their measure of diversification is a rough proxy at best. Kwast (1989) finds limited diversification benefits from expanded bank

Similarly, Kwan (1998) reports that bank Section 20 subsidiaries typically posted more volatile accounting returns, although not necessarily higher returns. DeYoung and Roland (2001) examines the link between bank profitability, volatility, and different revenue shares for 472 large commercial banks from 1988 to 1995. They conclude that increased fee-based activities (revenue from all sources except loans, investment, deposit, and trading activities) increase the volatility of bank revenue and bank earnings, and are also positively linked with the degree of total leverage taken together, there is little evidence of large diversification benefits from these papers.

Acharya, Hasan, and Saunders (2002) use bank-level data for Italian banks from 1993 to 1999 and conclude that diversification of bank assets (within the loan portfolio) does not typically improve performance or reduce risk. The final set of papers uses market data to evaluate potential diversification benefits; some examine actual returns and others use simulation methods to estimate the implied volatility of potential bank expansion. Santomero and Chung (1992) use option-pricing techniques to simulate the volatility of asset returns from combinations of 123 bank holding companies and 62 nonbank financial firms and conclude that bank expansion into nonbanking businesses reduces risk in general. In particular, bank holding company mergers with securities and/or life insurance firms generally reduce the volatility of bank returns, while mergers with property/casualty insurance increase the risk but increase the returns even more, so that the risk of failure is not increased significantly.

Similarly, Saunders and Walter (1994) compare the market returns of banks and other financial firms and build portfolio returns from various combinations. They conclude that life and property insurance combinations offer the biggest potential to reduce systematic risk for money centre banks. Houston and Ryngaert (1994) examine the market returns for a set of 153 bank mergers from 1985 to 1991 and find little evidence of excess returns as negative gains to bidders cancel out positive gains to targets. While this is not a test of diversification directly, it does provide some indirect evidence, as the institutions are unlikely to operate in the same product or geographic markets. In fact, they find that in-market mergers are better received by the market, as this offers the highest cost-saving potential.

Finally, DeLong (2001) uses a similar approach to examine the diversification question more directly. Bank mergers are decomposed into those that either diversify or focus along either geographic or activity dimensions, and the results show the largest gains for those mergers that increase focus both in terms of geographic location and activity. In particular, the primary conclusion is that "diversifying mergers do not create value." Again, this is not a direct test of the market's reaction to increases in non traditional activities, but it does suggest that diversification gains are not expected for typical bank expansions via mergers.

From the above literature review reveal that the non interest income will diversify income generating activities hence reduce risk and increase income stability.

## **2.5. Summary**

Despite the various literature review carried they is no clear cut relationship to the impact of non interest income with the financial performance of commercial bank, the empirical review carried out show conflicting result in such in different country similar research has been

carried out. This research will add to the existing literature and try to relate this with other countries

## RESEARCH METHODOLOGY

### 3.0. Introduction

This chapter covers the research design and methodology that was used in this study. It discusses the population from which the sample studied was obtained and how data was collected and how analysis was carried out.

### 3.1. Research Design

In this study was employed a correlation design. This design enables researchers to assess the nature of relationship that exist between two or more variables by showing a cause and effect relationship and show predictions of a future event or outcome from a variable (Kombo and Trompeter, 2006).

The application of this design for the current is that coefficient of variation (c.v) was used to measure the level of the magnitude of the deviation relative to the mean, standard deviation and standard deviation across the five years for the industry aggregation experiments of all commercial banks. Coefficient of variation was used to measure relative variability across groups of data since it is considered to be the most appropriate statistical indicator and not influenced by the problem of scaling data.

### 3.2. Population

This study sought to establish the relationship between non-interest income and financial soundness of commercial banks in Kenya, hence the population of interest includes 44

## **CHAPTER THREE**

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commercial banks, Which include 43 commercial bank and one mortgage finance bank. We will also get the industry aggregate from central bank report on bank supervision.

The period of study covered five (5) years from 2007 to 2011 both years inclusive. The choice of five years was taken to be reasonable because of average ratios shift over time (Altman 1968) and also the availability of necessary data. The research employs secondary data from Nairobi Security Exchange and Bank Supervision Reports

We excluded banks that do not provide data for all years in the period 2007-2011 in the aggregate if any and any births and deaths during that period if any.

### **3.4. Data Collection**

Secondary data was used in this study. This was obtained from CBK's database on banks' financial reports such as: non-interest income include deposit and transaction fees, insufficient funds (NSF) fees, annual fees, monthly account service charges, inactivity fees, check and deposit slip fees, fees and commissions income on loans and advances, foreign exchange trading income, dividend income among others for the five year period (2008 - 2011). The data was supplemented with data from various government publication such as central bank publication (annual bank supervision reports) and central bank bureau of statistic data (Economic Surveys).

### **3.6 Data Analysis**

This study used multiple linear regression technique in data analysis. Regression is used when a researcher is interested in finding out whether an independent variable predicts a given dependent variable. In this study, the non-interest income was analysed against

financial performance of the commercial banks. This was taken as the fraction of the total earnings proportionate to the ratio of mortgage loans advanced versus total loans.

### 3.6.1 Analytical Model

The regression model used in this study was as follows

$$ROA = p_0 + p_1 * LN + p_2 * FX + p_3 * DIV + p_4 * DEP + t$$

ROA = Dependent Variable; Return on Assets

Po = Constant term

P1 and P2 = Regression constants

LN = Fees and Commissions Income on Loans & Advances

FX = Foreign Exchange Trading Income

DIV = Dividend Income

DEP = Deposit and Transaction Fees and Other Account Fees

t = Error term (95% confidence level).

The study quantifies the contribution of the non-interest income to the overall financial performance of the bank. The analysis of quantitative data was carried out using SPSS Version 17 and presented in tables, linear graphs and charts. T-tests was used to determine whether there is a significant difference in financial performance when the non-interest income is high vis a vis interest income are high and when they are low.

## CHAPTER FOUR: DATA ANALYSIS, RESULTS AND DISCUSSION

### 4.1 Introduction

This chapter presents the data findings on the relationship between noninterest income and financial performance of commercial banks. Although the commercial banks registered by CBK are 43 in number, only 41 were taken as they had been registered consistently within the period under study, therefore, had complete data.

### 4.2 Descriptive Statistics of Data

#### 4.2.1: Non-interest Income Impact on Bank Return on Asset

Table 4.1 above shows the descriptive statistics and the distribution of the dataset from the commercial banks' reports on the: dividend income; foreign exchange trading income; fees and commissions income on loans and advances; deposit and transaction and other account fees. The data is in thousands.

**Table 4.1: Descriptive Statistics and Distribution of Variables**

<b>Commercial Banks</b>	<b>Fees Income on Loans'000'</b>	<b>Deposit and Transaction Fees'000'</b>	<b>Forex Trading Income '000'</b>	<b>Dividend Income '000'</b>	<b>Return on Assets</b>
ABC Bank	50123.4	121804.2	54073.6	181.6	2.368
Bank of Africa	42603.6	124518.8	115802.4	32827.4	1.392
Bank of Baroda	3389.6	80581.8	30294	192.4	3.408
Bank of India	35863	47223.4	24469.6	0	2.924
Barclays Bank	1195140	4377440	1832630	0	3.975
Commercial Bank of Africa	106283	454961	718167.6	6000	2.481
CFC Stanbic	224360.2	663188.6	733441.4	0	1.575
Chase Bank	100877.6	83921	87607.8	0	1.764

Citibank N.A	17336	615021.8	999151	0	3.276
Consolidated Bank	74198.6	123970.8	16069.2	0	1.404
Co-Operative Bank	527210.8	2348042	397735.6	2743.4	2.837
Credit Bank	12675.8	24854.6	17667.6	91.8	1.598
Development Bank	21240.8	12629.8	8917.4	7705.4	1.849
Diamond Trust Bank	172160.2	312396.2	325530.6	5558.6	2.407
Dubai bank	13995.6	39816.8	21301.2	0	0.387
Ecobank	80121.2	149383	35719	702	-0.507
Equitorial bank	24152.4	28779.6	23840.4	339.6	0.401
Equity Bank	1527239	2812671	304483.1	3436.2	4.551
Family Bank	350445.6	405501.8	8809.6	0	2.171
Fidelity Bank	30148.2	6506.8	21186.6	707.2	1.373
Fina Bank	59015	151742.4	57080.6	0	0.717
First Community	1361.4	36365.2	5059.6	0	-2.394
Giro Bank	31606.2	26996.2	17077.6	247	2.157
Guardian Bank	17578	29892.6	31643.4	0	0.866
Gulf African Bank	3990	51732.6	28696	0	-4.969
Habib Bank	5251.6	15785.8	13642.6	0	2.440
Habib AG Zurich	8868	35881.4	22823.6	0	2.262
Housing Finance	67906.2	52397.4	0	4000	1.152
I&M Bank	166323.8	332424.4	194290.8	0	2.765
Imperial Bank	87554.2	243466.6	125121	106	3.796
KCB Bank	2328004	2087747	1160766	387413.6	2.825
K-Rep	79630	199153.8	6319.2	0	-2.669
Middle East Bank	24033.4	281	17973.2	0	1.386
National Bank	144264.2	936206	228809	0	3.186
NIC Bank	205581.4	275934.6	326569.2	0	2.529
Oriental Bank	46494.4	17537.2	7625.8	69.8	3.326
Paramount Bank	4258.2	17179.8	9841.4	0	2.130
Prime Bank	51059	135860.2	51765.4	26384.8	1.750
Standard Chartered Bank	462839.8	1487100	1374872	179.4	3.695
Transnational Bank	71272.8	12259.8	33664.4	4157.8	3.438
Victoria Bank	12263.2	27997.2	15064.4	0	2.980
<b>Minimum</b>	<b>1,361.4</b>	<b>281</b>	<b>0</b>	<b>0</b>	<b>-4.969</b>
<b>Maximum</b>	<b>2,328,004</b>	<b>4,377,440</b>	<b>1,832,630</b>	<b>387,413.6</b>	<b>4.551</b>
<b>Mean</b>	<b>207,041.9</b>	<b>463,589.1</b>	<b>231,844</b>	<b>11,781.56</b>	<b>1.829</b>
<b>STDEV</b>	<b>455,092</b>	<b>907,388.3</b>	<b>419,920.1</b>	<b>60,488.07</b>	<b>1.843</b>

Source: Research Findings

Return on Assets (ROA) had a mean of 1.829 and standard deviation (STDEV) of 1.843. The most performing commercial bank had an average ROA of 4.551 while the least performing

bank had a value of -4.969. Overall, four commercial banks made losses on average within the five year period. Most of these commercial banks were either restructuring (Ecobank Limited) or new in the market (First Community Bank and Gulf African Bank).

Fees and commissions income on loans and advances had a mean of 207,041,900 and a standard variance of 455,092,000. The maximum value on the same was 2,328,004,000 while the minimum value was 1,361,400. Deposit, transaction and other account fees had an average value of 463,589,100, maximum value of 4,377,440,000 and minimum of 281,000. Foreign exchange trading income had a mean of 231,844,000 while mean dividend income value was 11,781,560. The dataset also reveals that some banks did not trade in dividend within the 5-year period.

### **4.3 Inferential Analysis**

The study conducted inferential analysis using Pearson correlation coefficient, ANOVA and regression analysis. ANOVA was used to test the hypothesis that the means among independent (factors) and dependent variables (financial performance) are equal, therefore shows the significance of the association between the two. Correlation coefficient was used to test linear dependence (association) between financial performance and the individual independent variables.

Regression analysis was used to measure the relationship between individual independent variables and the dependent variable when they act together.

#### **4.3.1 Correlation Analyses**

**Table 4.2: Linearity between Non-Interest Income and Performance**

	2007	2008	2009	2010	2011
Observations	41	41	41	41	41
R (Correlation Coefficient)	.627 <sup>"</sup>	.631 <sup>a</sup>	.404 <sup>a</sup>	.345 <sup>"</sup>	.395 <sup>"</sup>
R <sup>2</sup> (Determination Coefficient)	.393	.399	.163	.119	.156
Adjusted R <sup>2</sup>	.326	.332	.070	.021	.063
Std. Error of the Estimate	2.057	1.912	1.874	1.714	2.575
Durbin-Watson (DW) Statistic	2.020	1.769	1.794	2.092	2.004

Source: Research Findings

a. Predictors: (Constant), Dividend Income, Fees and Commissions Income on Loans & Advances, Foreign Exchange Trading Income, Deposit and Transaction Fees and Other Account Fees

b. Dependent Variable: Return On Asset

Table 4.2 illustrates that the strength of the relationship between financial performance and independent variables (dividend income; fees and commissions on loans and advances; foreign exchange trading income; deposit and transaction and other account fees). From the determination coefficients, it can be denoted that there are moderate to strong linear relationship between dependent and independent variables in the 2007-2011 datasets since the R values between 0.345 to 0.631. Coefficient relationship as it had the highest value of 0.399 which portends a moderate relationship between the two. That is, at its best, non-interest income accounts for about 39.9% of the variations in financial performance of commercial banks as represented in the return of asset.

The study also used Durbin Watson (DW) test to check that the residuals of the models were not autocorrelated since independence of the residuals is one of the basic hypotheses of

regression analysis. Being that the DW statistics were close to the prescribed value of 2.0 for residual independence, it can be concluded that there was no autocorrelation.

**Table 4J: Regression Analysis - 2007**

	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	-3.182	1.191		-2.671	.011
Fees Income on Loans & Advances	.447	.167	.427	2.676	.011
Transaction and Account Fees	.367	.161	.371	2.286	.028
Foreign Exchange Trading Income	-.081	.173	-.078	-.466	.644
Dividend Income	-.063	.109	-.078	-.582	.564

Source: Research Findings

a. Dependent Variable: Return On Asset

The established regression equation for year 2007:

$$\text{ROA} = -3.182 + 0.447*\text{LN} + 0.167*\text{DEP} - 0.081*\text{FX} - 0.063*\text{DIV} \quad p = 0.001$$

From the finding in the above table the study, holding Dividend Income, Fees and Commissions on Loans, Foreign Exchange Trading Income, Deposit, Transaction and Other Account Fees constant ROA value was -3.182. This depicts that the company would go at a loss.

The regression results shows that holding other factors (Dividend Income, Foreign Exchange Trading Income, Deposit, Transaction and Other Account Fees) constant, unit increase in fees

and commissions on Loans and advances of the commercial bank will cause a 0.447 increase in ROA. Holding Dividend Income, Fees and Commissions on Loans, Foreign Exchange Trading Income constant, unit increase in deposit, transaction and other account fees will lead to a 0.367 increase in ROA.

Besides, the findings reveal that holding Dividend Income, Fees and Commissions on Loans, Deposit, Transaction and Other Account Fees constant, a unit increase in Foreign Exchange Trading Income value will lead to a 0.081 decrease in ROA while unit increase in Dividend Income would lead to a 0.063 decrease in ROA.

**Table 4.4: Analysis of Variance - 2007**

	<b>Sum of Squares</b>	<b>Df</b>	<b>Mean Square</b>	<b>F</b>	<b>Sig.</b>
Regression	98.583	4	24.646	5.826	.001a
Residual	152.278	36	4.230		
Total	250.862	40			

Source: Research Findings

a. Predictors: (Constant), Dividend Income, Fees and Commissions Income on Loans & Advances, Foreign Exchange Trading Income, Deposit and Transaction Fees and Other Account Fees

b. Dependent Variable: Return On Asset

Analysis of Variance (ANOVA) was used to provide information about levels of variability within a regression model so as to form basis for tests of significance; that is, how the regression equation accounts for variability in the response variable. ANOVA presented in Table 4.4 shows that regression models for 2007 was significant as it had a p value less than



0.05 (p = **0.001**). This indicates that the models had a probability of **1%** of giving false prediction.

**Table 4.5: Regression Analysis - 2008**

	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	-5.606	1.697		-3.303	.002
Fees and Commissions on Loans	.618	.176	.488	3.509	.001
Transaction and Other Account Fees	.098	.161	.081	.610	.546
Foreign Exchange Trading Income	.257	.147	.245	1.742	.090
Dividend Income	-.050	.114	-.058	-.440	.663

Source: Research Findings

a. Dependent Variable: Return On Asset

The established regression equation for year 2007:

$$\text{ROA} = -5.606 + 0.618*\text{LN} + 0.098*\text{DEP} + 0.257*\text{FX} - 0.050*\text{DIV} \quad p = 0.001$$

From the finding in the above table the study found that holding Dividend Income, Fees and Commissions on Loans, Foreign Exchange Trading Income, Deposit, Transaction and Other Account Fees at zero ROA was -5.606. This also portends that in the absence of the independent variables the commercial banks would perform at a loss.

The study found that, holding other factors (Dividend Income, Fees and Commissions on Loans, Foreign Exchange Trading Income, Deposit, Transaction and Other Account Fees) constant a unit increase in Fees and Commissions on Loans and advances will lead to an decrease in ROA by 0.618. Holding Dividend Income, Fees and Commissions on Loans, Foreign Exchange Trading Income and Fees and Commissions on Loans constant, a unit increase in Deposit, Transaction and Other Account Fees would result to a 0.098 increase in

ROA. Furthermore, holding the rest of the factors constant while increasing Foreign Exchange Trading Income by a unit, increase ROA by 0.257. A unit increase in Dividend Income while holding other factors constant causes a 0.050 decrease in ROA.

**Table 4.6: Analysis of Variance - 2008**

	<b>Sum of Squares</b>	<b>Df</b>	<b>Mean Square</b>	<b>F</b>	<b>Sig.</b>
Regression	87.260	4	21.815	5.967	.001a
Residual	131.614	36	3.656		
Total	218.874	40			

Source: Research Findings

a. Predictors: (Constant), Dividend Income, Fees and Commissions Income on Loans & Advances, Foreign Exchange Trading Income, Deposit and Transaction Fees and Other Account Fees

b. Dependent Variable: Return On Asset

**Table 4.7: Regression Analysis - 2009**

	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	-2.714	2.138		-1.270	.212
Fees and Commissions on Loans	.202	.139	.227	1.454	.155
Transaction and Other Account Fees	.101	.213	.076	.475	.638
Foreign Exchange Trading Income	.233	.218	.172	1.069	.292
Dividend Income	.106	.097	.170	1.086	.285

Source: Research Findings

a. Dependent Variable: Return On Asset

The established regression equation:

$$\text{ROA} = -2.714 + 0.202 \cdot \text{LN} + 0.101 \cdot \text{DEP} + 0.233 \cdot \text{FX} + 0.106 \cdot \text{DIV} \quad p = 0.160$$

From the finding in the above table, the study found that holding Dividend Income, Fees and Commissions on Loans, Foreign Exchange Trading Income, Deposit, Transaction and Other Account Fees at zero ROA value would be -2.714. As depicted by the earlier analyses, in the absence of the non-interest income, the commercial banks would go at a loss. The study found that holding dividend income, foreign exchange trading income, deposit, transaction and other account fees constant, a unit increase in fees and commissions on loans value would result in a 0.202 increase in ROA. Table 4.7 further indicates that holding other factor constant, a unit increase in Deposit, Transaction and Other Account Fees will lead to a decrease in ROA by 0.101. Holding Dividend Income, Fees and Commissions on Loans, Deposit, Transaction and Other Account Fees constant, a unit increase in Foreign Exchange Trading Income will lead to an increase in ROA by a factor of 0.233. On the other hand.

holding other factors constant, a unit increase dividend income will lead to an increase in ROA by a factor of 0.106.

**Table 4.8: Analysis of Variance - 2009**

	Sum of Squares	Df	Mean Square	F	Sig.
Regression	24.630	4	6.158	1.753	.160a
Residual	126.471	36	3.513		
Total	151.101	40			

Source: Research Findings

a. Predictors: (Constant), Dividend Income, Fees and Commissions Income on Loans & Advances, Foreign Exchange Trading Income, Deposit and Transaction Fees and Other Account Fees

b. Dependent Variable: Return On Asset

**Table 4.9: Regression Analysis - 2010**

	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	-.036	1.844		-.020	.984
Fees and Commissions on Loans	.092	.148	.098	.619	.540
Transaction and Other Account Fees	-.051	.189	-.044	-.269	.789
Foreign Exchange Trading Income	.308	.152	.334	2.021	.051
Dividend Income	-.011	.084	-.021	-.130	.897

Source: Research Findings

a. Dependent Variable: Return On Asset

The established regression equation for year 2010:

$$\text{ROA} = -0.036 + 0.092*\text{LN} - 0.051*\text{DEP} + 0.308*\text{FX} - 0.011*\text{DIV} \quad p = 0.321$$

From the finding in the above table the study, holding Dividend Income, Fees and Commissions on Loans, Foreign Exchange Trading Income, Deposit, Transaction and Other Account Fees constant ROA value was -0.036. This depicts that the commercial banks would go at a loss.

The regression results shows that holding other factors (Dividend Income, Foreign Exchange Trading Income, Deposit, Transaction and Other Account Fees) constant, unit increase in Fees and Commissions on Loans of the commercial bank will cause a 0.092 increase in ROA. Holding other factors constant, unit increase in Deposit, Transaction and Other Account Fees will lead to a 0.051 decrease in ROA. Besides, the findings reveal that holding other factors constant, a unit increase in Foreign Exchange Trading Income value will lead to a 0.308 increase in ROA while unit increase in dividend income would lead to a 0.011 decrease in ROA.

**Table 4.10: Analysis of Variance - 2010**

	<b>Sum of Squares</b>	<b>Df</b>	<b>Mean Square</b>	<b>F</b>	<b>Sig.</b>
Regression	14.282	4	3.570	1.215	,321a
Residual	105.769	36	2.938		
Total	120.051	40			

Source: Research Findings

a. Predictors: (Constant), Dividend Income, Fees and Commissions Income on Loans & Advances, Foreign Exchange Trading Income, Deposit and Transaction Fees and Other Account Fees

b. Dependent Variable: Return On Asset

**Table 4.11: Regression Analysis - 2011**

	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	-5.293	3.846		-1.376	.177
Fees and Commissions on Loans	.480	.262	.311	1.832	.075
Transaction and Other Account Fees	.396	.658	.120	.601	.551
Foreign Exchange Trading Income	.064	.281	.042	.228	.821
Dividend Income	.125	.199	.097	.626	.535

Source: Research Findings

a. Dependent Variable: Return On Asset

The established regression equation for the year 2011:

$$\text{ROA} = -5.293 + 0.480 \cdot \text{LN} + 0.396 \cdot \text{DEP} + 0.064 \cdot \text{FX} + 0.125 \cdot \text{DIV} \quad p = 0.179$$

From the finding in the above table the study found that holding Dividend Income, Foreign Exchange Trading Income, Deposit, Transaction and Other Account Fees at zero ROA was - 5.293. This also depicts that in the absence of the independent variables the commercial banks would perform at a loss.

The regression results shows that, holding Dividend Income, Foreign Exchange Trading Income, Deposit, Transaction and Other Account Fees constant, a unit increase in Fees and Commissions on Loans will lead to a 0.480 increase in ROA. Holding Dividend Income, Foreign Exchange Trading Income and Fees and Commissions on Loans constant, a unit increase in Deposit, Transaction and Other Account Fees would result to a 0.396 increase in ROA. Furthermore, holding the rest of the factors constant while increasing Foreign Exchange Trading Income by a unit, ROA would increase by 0.064. Holding Foreign

Exchange Trading Income, Deposit, Transaction and Other Account Fees constant, a unit increase in Dividend Income causes a 0.125 increase in ROA.

**Table 4.12: Analysis of Variance - 2011**

	<b>Sum of Squares</b>	<b>df</b>	<b>Mean Square</b>	<b>F</b>	<b>Sig.</b>
Regression	44.242	4	11.060	1.668	.179a
Residual	238.681	36	6.630		
Total	282.922	40			

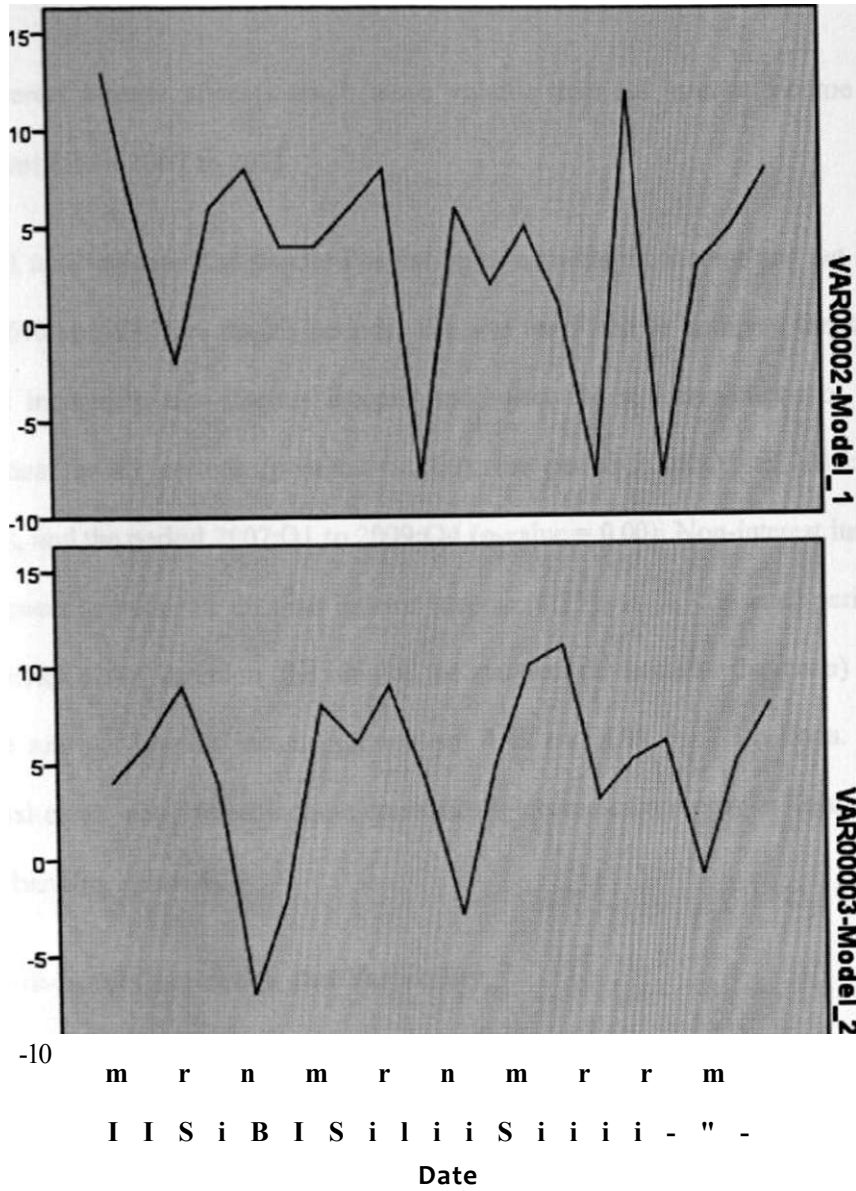
Source: Research Findings

a. Predictors: (Constant), Dividend Income, Fees and Commissions Income on Loans & Advances, Foreign Exchange Trading Income, Deposit and Transaction Fees and Other Account Fees

b. Dependent Variable: Return On Asset

#### **4.4: Aggregate Volatility and Cyclicity of Bank Revenue**

This section examines the aggregate volatility and cyclicity of bank profits in Kenya over the period 2007 to 2011. Figure 1 shows the quarterly variations of net interest income (above) and non-interest income (below) growth rates



- Observed

Source: Research Findings



Non-interest income appears much more volatile than net interest income in past years, particularly from 2007 to 2011

Figure 1 also indicates the standard deviation of non-interest income and net interest income is 30.36% and 13.71% for all periods. We use the F-test to compare the volatility of net interest income to non-interest income and reject the null hypothesis of equal standard deviations for all periods (p-value = 0.00), the period 2008:Q2 to 2010:Q4 (p-value = 0.0033), and the period 2007:Q1 to 2009:Q4 (p-value = 0.00). Non-interest income also has a higher mean growth rate than net interest income (6.75% vs. 2.75% in all periods). However, the coefficients of variation (the ratio of the standard deviation to the mean) for non-interest income and net interest income growth are 4.49 and 4.98 for all periods. Because of the financial crash, net interest income dramatically decreased not only in Kenya but also in the global banking industry.

#### **4.2 Bank-Level Correlation and Variability**

This section examines the aggregate data, or the role of non-interest income in determining the profitability and risk of individual banks. There are two ways to help us determine the correlation of each asset in the portfolio and examine the diversification effect of an asset portfolio. We set up the "cross-sectional correlation" and the "bank-specific correlation" to examine the correlation between net interest income and non-interest income. First, the "cross-sectional correlation" measures the correlation between net interest income growth and non-interest income growth across banks at a point in time. Second, the "bank-specific correlation" measures the correlation between net interest income growth and non-interest

income growth across time for each bank. The cross-sectional correlation has one observation for each year, and the bank-specific correlation has one observation for each bank.

#### 4.5: Cross-Sectional Correlation

According to Stiroh (2004), the cross-sectional correlation across banks in each year  $t$  is defined as:

$$P_t = \text{corr}(d \ln \text{NET}_U, d \ln \text{NON}_{M,X})$$

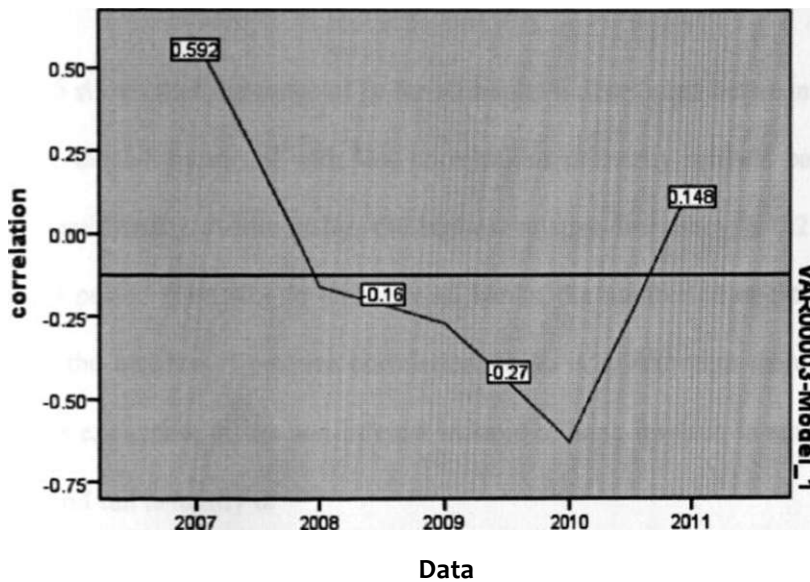
Where  $d \ln \text{NET}_U$  is net interest income and  $d \ln \text{NON}_{M,X}$  is non-interest income for bank  $i$  in year  $t$ .  $\bar{d \ln \text{NET}_U}$  and  $\bar{d \ln \text{NON}_{M,X}}$  are the average growth rates across all  $i$  banks in year  $t$ .

The cross-sectional correlation describes the degree of variation between net interest income and non-interest income across banks in a particular year. There is contrary variation when positive shocks to one revenue source are offset by negative shocks to the other. When non-interest income has high diversification benefits on bank revenue, the correlation is expected to be negative. On the other hand, a higher correlation means lower diversification benefits from the non-interest income of bank revenue.

Figure 2 plots the time series of cross-sectional correlations for the total banks. For all banks, the number of the negative correlations year is 4, and the number of the positive correlation's year is 3. The  $P_t$  gradually decrease from 0.592 in 2007 to 0.148 in 2011. The average  $P_t$  across all years is -0.058. The mean of  $P_t$  is -0.013 between 2007 and 2011. These results

imply that non-interest income has evident diversification benefits in Kenyan banking industry.

**Figure 2: Cross-Sectional Correlation between Noninterest Income Growth and Net Interest Income Growth**



Source: Research Findings

The bank-specific correlation across time for each bank is defined as

The bank-specific correlation describes the degree of correlation between net interest income and non-interest income moving together over time. Besides, it is a traditional method to measure the correlation, which has directly indicated whether the non-interest income has diversification benefits. When there is a negative correlation, it implies strong potential diversification benefits on bank revenue. Similarly, when there is a positive correlation, it implies a weak potential diversification benefits on bank revenue.

We analyze  $\rho$  with annual data for all banks with growth rates of both net interest income and non-interest income from 1993 to 2009. For all banks, the average  $\rho$  is -0.200, with a median of -0.184 and a standard deviation of 0.227. For large banks, the average  $\rho$  is -0.234, with a median of -0.216 and a standard deviation of 0.171. For small banks, the average  $\rho$  is -0.181, with a median of -0.182 and a standard deviation of 0.259. According to these calculations, these data indicate that non-interest income has significant diversification benefits in Taiwan's banking industry.

Figure 6 shows that the range of  $\rho$  for all banks is distributed between -0.602 and 0.181. The mass in the left-hand tail with low correlations primarily reflects banks with a potentially diversified benefit. Additionally, the highest relative frequency is 0.21, which is distributed over the period from -0.1 to -0.2. For all banks, the number of negative correlation banks is 15, and the number of positive correlation banks is 4. Although there is little diversification from the expansion of the non-interest income of bank revenue in small banks, the bit of the right-hand tail is nearly 0.

#### **4.6. Interpretation of the Findings**

It seems that the relative performance of banks is not important in explaining non-interest income in Kenya. Thus, commercial banks in Kenya generate less non-interest income per ratio of assets. Banks in Kenya have not been able to take advantage of the close relationships with depositors to encourage them to undertake additional fee-based services and/or pay higher fees for these services given that customers' demand is inelastic. The proxy for personalized service is significant and positively related to non-interest income, indicating that customers are willing to pay fees to banks that provide higher levels of personalized services. All else equal, an increase in noninterest income will improve earnings - but an

increase in noninterest income seldom occurs without concomitant changes in interest income, variable inputs, fixed inputs, and/or financing structure

The evidence suggests that non-interest income is a less significant determinant of bank profitability, as measured by the return on assets, such that an increase in the level of non-interest income is associated with a less considerable rise in return on assets, therefore, it can be inferred that raising the level of non-interest income per ratio of assets would not automatically lead to higher variability in earnings. These findings are in line with recent studies undertaken for the United States Stiroh (2007). Furthermore, increases in non-interest income are linked to higher earnings volatility

Increased non-interest income was expected that it will improve bank earnings but will also change its' output mix, variable and fixed inputs as well as financing structure. Moreover, it was thought that shifting the source of bank income from relatively volatile intermediation-based activities with its attendant credit and interest rate risks to relatively less volatile fee-based income with no such credit and interest rate risks would reduce overall income volatility. But the study finding suggest otherwise.

The researcher argues that fee income may not necessarily have stabilizing effects relative to interest income and in fact may increase the volatility of bank earnings. First, most bank loans are relationship based and consequently have high switching costs, while the majority of fee-based activities are not relationship based. Hence, despite credit and interest rate risks, banks revenue from loan interest may be less volatile than bank non-interest income from fee based activities. Second, within the context of an ongoing lending relationship, the main input needed to produce fee-based products is fixed or quasi-fixed labor owing to the low switching and information costs of customers. This is contrary to a variable input (interest

expense) for loans. Thus, fee-based activities employ greater operating leverage than lending activities, making operating income more sensitive to revenue volatility. Third, most non-interest activities like trust services, mutual fund sales and cash management require the bank to hold little or no fixed assets; so unlike interest-based products like portfolio lending they require little or no regulatory capital. Therefore, fee-based activities are likely to employ more leverage than lending activities, which makes the level of bank earnings more volatile as a result of the increasing riskiness of banks stemming from higher leverage.

Besides, DeYoung and Roland (2001), recent work by Stiroh (2007) and others have shown that diversification into non-banking activities increases the overall riskiness of banks. For banks in Europe, Smith, Staikoura and Wood (2003) also found that non-interest income tends to be more volatile but both income streams are negatively related, suggesting that non-interest income may reduce the variability of bank net earnings by stabilizing bank's operating income. In sum, the evidence above shows that the expansion into non-bank activities and its effect on the income stability of banks are still controversial, and appears data specific.

The results show that greater reliance on noninterest income has been associated with higher volatility of bank income, but not with higher returns. This suggests that the move toward noninterest income may actually be worsening the risk/return trade-off for the typical bank and not generating large diversification benefits. These results raise fundamental doubts about the belief that noninterest income will stabilize revenue and profitability and thereby reduce risk. Net interest income and noninterest income growth are positively correlated for the commercial banks, and the correlation seems to be rising for the commercial banks.

The study suggests three reasons why noninterest income may increase the volatility of bank earnings. First, most bank loans are relationship based and as a result have high switching costs, while most fee-based activities are not relationship based. Thus, despite credit risk and fluctuations in interest rates, interest income from loans may be less volatile than noninterest income from fee-based activities. Second, within the context of an ongoing lending relationship, the main input needed to produce more loans is variable (interest expense); in contrast, the main input needed to produce more fee-based products is typically fixed or quasi fixed (labor expense). Thus, fee-based activities may require greater operating leverage than lending activities, which makes bank earnings more vulnerable to declines in bank revenues. Finally, a marginal increase in noninterest income is associated with significantly lower risk-adjusted ROE. Hence, noninterest income increases returns to shareholders, but not by enough to offset the additional risk to which this exposes shareholders. These findings are consistent with the literature by Omoudo (2003) who found that noninterest income is more volatile than generally thought.

## CHAPTER FIVE

### SUMMARY, CONCLUSION AND RECOMMENDATIONS

#### 5.1 Introduction

This chapter presents discussions of the key findings presented in chapter four, conclusions drawn based on such findings and recommendations there-to. This chapter is, thus, structured into discussions, conclusions, recommendations and areas for further research.

#### 5.2 Summary

First, the researcher investigated the potential impacts of rising non-interest income shares on bank profitability. We find that while banks with higher non-interest income shares tend to exhibit contemporaneously higher ROA and equity-asset ratios. Non-interest income expansion of commercial banks raises profit variability

Third, it is interesting to note that there exists a unilateral, causal relationship from bank ROA to non-interest income ratio. Namely, while more profitable banks tend to exhibit higher non-interest income ratios, banks with higher non-interest income ratios do not necessarily show subsequently higher profitability.

This finding may result from the fact that expanding fee-based services often requires substantial fixed costs such as investment in information technology, staff, and distribution channels. Profitable banks may be able to conduct those investments relatively cheaply. Moreover, accumulation of sufficient profit and equity capital may be required for banks to expand capital market-related businesses such as securities trading, financial derivatives, and principal investments. Expansions toward these non-interest income businesses may not



necessarily lead to higher profits. The study finds a positive significant relationship between noninterest income and financial performance of commercial banks in Kenya

At the aggregate level, Kenyan banking industry shows that non-interest income appears much more volatile than net interest income. Exchange gains and other income are the most volatile components. According to these analyses of aggregate volatility and cyclicity, we conclude that banks in Kenyan changes their operating toward non-traditional banking activities will not smooth the impact of fluctuations in the macroeconomic on bank revenue. Furthermore, the covariance between net interest income and non-interest income has changed from positive to negative in Kenya. This indicates that increasing non-interest income may bring diversification benefits in Kenyan banking industry.

At the bank level, this study explores how there are diversification benefits from increasing non-interest income. Sufficient evidence exists to prove that the correlation will increase as non-interest income enlarges. In terms of bank return, rising fee and commission income share and investment revenue share will diminish ROE and enlarge its volatility. That is, the continued expansion in the banks may lower profitability per unit of risk, even after standardizing the dependent variables.

These results deny the belief that increasing non-interest income shares will improve profitability. However, it does not mean that no banks are able to successfully manage their non-traditional activity for this effect. Compared to the extant literature, our contribution shows that there is a negative proof for stakeholders to conduct their investing opinion in Kenyan banking industry. That is, if you want to have diversification benefits, shifting toward non-interest income does not seem to play an important role.

### **5.3. Conclusions**

The data analysis confirms a non-linear relation between the non interest income and financial performance hence recommends that non-interest income should not always be increased to make a company stable through sound financial performance.

As noninterest income trended up, it was generally believed that shifting banks' income away from intermediation-based activities (in which bank income was subject to credit risk and interest rate risk), and toward fee-based financial products and services, would reduce banks' income volatility. Moreover, it was conventionally believed that expansion into new fee-based products and services reduced earnings volatility via diversification effects. But this study concludes that neither of these beliefs holds in Kenya commercial banks.

### **5.4. Recommendations for Policy**

The study finds a positive non-significant relationship between noninterest income and financial performance of commercial banks in Kenya and further recommends that there is no need to reign in the noninterest income tendencies

The study recommends that in order for the financial performance of commercial banks Kenya to improve, there is need for the management to initiate measures that will increase non interest income.

The study recommends that there is also need for the finance manager of commercial banks to note that there is some evidence to suggest that higher noninterest income may lead to improve financial performance. This may be attributed to stability of income flow in the financial institution.

## **5.5: Limitation of the Study**

The study does not distinguish between firms that have acquired subsidiaries and those that have grown noninterest components organically. Our study does not consider whether financial institutions develop non-bank services internally through growth or externally through acquisition is beyond the scope of this study. Finally, our approach to noninterest income is very broad. We attempt to evaluate the effect of noninterest income in several Different areas of a bank's operations. A much higher degree of focus and attention could be given to each topic; something that we hope will encourage future research

The time limit available for this type of study was not adequate but all efforts were made to come up with a comprehensive study. Financial resources were limiting factor as it would have been prudent to employ a number of assistants in analysing data. The study was further be limited by the theoretical frame work that the researcher used.

## **5.6 Suggestions for further study**

The study recommends that future researchers should carry a similar analysis should be carried out on microfinance institutions to compare and contrast the study findings.

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## **APPENDIX**

### **LIST OF COMMERCIAL BANK**

#### Commercial Banks

- ABC Bank
- Bank of Africa
- Bank of Baroda
- Bank of India
- Barclays Bank
- Commercial Bank of Africa
- CFC Stanbic
- Chase Bank
- Citibank N.A
- Consolidated Bank
- Co-Operative Bank
- Credit Bank
- Development Bank
- Diamond Trust Bank
- Dubai bank
- Ecobank
- Equitorial bank
- Equity Bank
- Family Bank
- Fidelity Bank
- Fina Bank
- First Community



- Giro Bank
- Guardian Bank
- Gulf African Bank
- Habib Bank
- Habib AG Zurich
- Housing Finance
- I&M Bank
- Imperial Bank
- KCB Bank
- K-Rep
- Middle East Bank
- National Bank
- NIC Bank
- Oriental Bank
- Paramount Bank
- Prime Bank
- Standard Chartered Bank
- Transnational Bank
- Victoria Bank