EFFECTS OF NON-INTEREST INCOME ON THE AVERSION OF SYSTEMIC RISKS OF COMMERCIAL BANKS IN KENYA

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ABSTRACT

Banks operate in an environment of considerate risks and uncertainty. Systemic risk has always been a vicinity of concern not only to bankers but to all in the business world because the risks of a trading partner not fulfilling his obligations in full on due date can seriously jeopardize the affaires of the other partner. The purpose of this study was to establish the effect of non-interest income on the risk averseness of commercial banks in Kenya. The objectives of the study were to: establish the effect of foreign exchange trading income on the systemic risk, assess the effect of dividend income on the systemic risk of commercial banks in Kenya, establish the effect of deposit and transaction fees and other account fees on the systemic risk and determine the effect of fees and commissions income on loans and advances on the systemic risk. The study adopted descriptive research design, the population for the study. The target population for the study comprised of 42 commercial banks in Kenya. Census sampling procedure was used to sample all the 42 commercial banks in Kenya. Secondary data was collected using documentary information from Banks annual accounts for the period 2010 to 2014. Data collected was analyzed using inferential statistics and presentations made inform of tables. Data was analyzed using a multiple linear regression model. Results revealed that a strong relationship exist between foreign exchange trading income, divided income, deposit and transaction fee and fees and commissions on systemic risk of commercial banks. The study found a positive relationship between foreign exchange trading income, divided income and fees and commissions on systemic risk of commercial banks. A 1% increase in foreign exchange trading to a 54% change in systemic risk, while a 1% increase in divided income leads to a 33.9% increase in return on equity and a 1% increase in fees and commissions leads to a 50.3% increase in return on equity. On the other hand, the study found a negative relationship between deposit and transaction fee and return on assets. This means that a 1% increase in deposit and transaction fee leads to a 20.2% decrease in return on asset of a firm. The study concluded that firms should lean towards deposit and transaction fee to manage the systemic risks. To realize increased systemic risk by commercial banks in Rwanda, they should practice corporate diversification in order to boost their income and grow their businesses. Corporate diversification acts as an extra source of income that the bank can harness and invest in capital projects. This helps commercial banks to mitigate risks since it has many sources of income.

Key words: Foreign exchange trading, Dividend income, Deposit and transaction fee, fees and commission income on loans, systemic risk, Non-interest income

1.0 Background.

The profitability of traditional banking activities such as business lending and raising deposits has diminished in recent years. As a result, banks have increasingly turned to new, non-traditional financial activities as a way of maintaining their position as financial intermediaries (Dong, 2012). Non-interest income includes activities such as income from trading and securitization, investment banking and advisory fees, brokerage commissions, venture capital, and fiduciary income, and gains on non-hedging derivatives. These activities are different from the traditional deposit taking and lending functions of banks. In these activities banks are competing with other capital market intermediaries such as hedge funds, mutual funds, investment banks, insurance companies and private equity funds which is important for financial stability (Brunnermeier, Dong & Palia, 2012).

The more unstable earnings stream of a bank is, the riskier it becomes. 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 organization 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 hold, it then follows that mixing interest and non-interest income will reduce the volatility of earnings (DeYoung & Rice, 2014).

Over the last years, numerous banks around the world have broadened their portfolio to offer non-traditional services. Off-balance sheet (OBS) activities such as loan origination, securitization, standby letters of credit and derivative securities among others are expanding in a rapid pace. As a result, the share of fee-based and other non-interest income to total income has increased dramatically (Lozano-Vivas & Pasiouras, 2010).

With the financial deregulation that took place in the seventies and in the eighties, western banking systems faced major changes in the form of increased competition, concentration and restructuring. Banks have since then reacted to the new environment by adopting a proactive strategy widening the range of products they offer to their clients. These changes mainly implied an increasing share of non-interest income in profits (Stiroh, 2014). The decline in interest margins was induced by higher competition brought by banks that opted to charge higher fees on existing or new services (cash withdrawal, bank count management and data processing). As a result, the structure of bank income experienced a dramatic change in both the U.S. and Europe. In the eighties, non-interest income represented 19 percent of U.S. commercial banks' total income. This share had grown to 63 percent of total income in 2010 (Stiroh, 2014).

Lepetit, Nys, Rous and Tarazi (2013) on analyzing the variability of interest and non-interest income and their correlation, for the banking systems of 15 European Union countries during the 2004–2012 period. For each country, Lepetit, Nys, Rous and Tarazi (2013) consider commercial, savings, cooperative, and mortgage banks on the one hand and large and small banks on the other, and study the correlation of income sources. They find that in the majority of the cases, the increased reliance on activities that generate non-interest income has stabilized profits.

Bank of Africa Bank (BOA) Tanzania is a subsidiary of BOA Group that began its operations in 1982 in Bamako, Mali where it has its headquarters, and has over the years expanded, initially in West Africa and recently in East Africa. The bank is well established in 16 countries namely: Benin, Burkina Faso, Burundi, Democratic Republic of Congo, Djibouti, France, Ghana, Ivory Coast, Kenya, Madagascar, Mali, Niger, Senegal, Tanzania, Togo and Uganda with further plans of expanding (Economy, 2014).

The BOA in Tanzania announced a six per cent net profit increase, attributed to non-interest income. The statement issued by BOA shows that the bank posted a net profit increase of shillings 5.75bn in 2014 versus shillings 5.42bn of 2013. The profit increase, is attributed to mainly noninterest income that generated an increase of shillings 16.48bn from shillings 13.75bn. The non-interest income increase was boosted by almost two third by fees and commissions that contributed shillings 11.28bn compared to foreign exchange profit of shillings 4.37bn and others shillings 828m (Economy, 2014).

The Economy (2014) added that the net interest income contribution to the profit declined slightly to shillings 21.33bn from shillings 21.91bn. The net interest's revenue was the result of increased loan portfolio that went up to 273.30bn in 2014 from shillings 232.43bn of 2013. The increase of net interest income leads to ballooning of gross loans and advances to deposits to 88.5 per cent from 79.6 per cent. This indicated that non-interest income has played a key role in stabilizing the profits of the bank in the region.

According to Nairobi stock and market report (2009) 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. 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 Beck, Cull, Fuchs, Getenga, Gatere, Randa and Trandafir (2013), this sources of revenue has become more important in recent times as banks have shifted from traditional interest income to more nontraditional sources of revenue, known as non- interest or fee income. These sources of income have a great growth significant in non –interest income that has helped in mitigating financial risks in commercial banks.

According to the CBK (2009), the total assets in the banking system stood at kshs.418 billion 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 2001 to 55% by 2009, and the trend is expected to continue according to central Bank of Kenya prediction.

According to Waweru and Kalani (2009) 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. They add 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.

1.2 Problem Statement

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 Central bank of Kenya 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 (Brownbridge, 2012). Deregulation and newly developed technology has adversely affected the competitive advantage of banks in Kenya as being the sole providers of financial services. This has since been witnessed by of M-Pesa joining the financial market carrying on money transfer services that was initially at the preserve of banks (Mas & Radcliffe, 2010).

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. Commercial banks have responded to by shifting their product mix toward noninterest income by selling mutual funds and investment in money market / financial market or government securities to achieve risk diversification because it is less susceptible to economic recessions and therefore off-set the losses brought about by interest incomes.

Various studies have been conducted in Kenya in the commercial sector: Ng'endo (2012) on the Relationship between Non-Interest Income and Financial Performance of Commercial Banks in Kenya; Kithinji (2010) on credit risk management and profitability of commercial banks in Kenya and Ngugi, (2001) an empirical analysis of interest rate spread in Kenya. Though some of these studies have been carried out in non- interest income none has been carried out to show the effects of non-interest income on the aversion of systemic risks of commercial banks in Kenya. This study therefore aim at studying establishing the effects of non-interest income on the aversion of systemic risks of commercial banks in Kenya

1.3 Research objectives

1.3.1 General objective
The general objective of the study was to establish the effect of non-interest income on the risk averseness of commercial banks in Kenya

1.3.2 Specific objectives
The study was guided by the following specific objectives:
1. To establish the effect of Foreign Exchange Trading Income on the systemic risk of commercial banks in Kenya.
2. To assess the effect of Dividend Income on the systemic risk of commercial banks in Kenya.
3. To establish the effect of Deposit and Transaction Fees and Other Account Fees on the systemic risk of commercial banks in Kenya.
4. To find out the effect of Fees and Commissions Income on Loans and Advances on the systemic risk of commercial banks in Kenya.

2.0 Literature Review

2.1 Empirical review

2.3.1 Foreign Exchange Trading Income

Luca (2007) noted that in the turbulent world of currency trading, where daily trading volumes exceed $5 trillion, tight trading spreads are the norm for deals between banks in the interbank market, with only a few separating the bid and ask prices for a currency. Exchange rates quoted by banks to their large corporate, institutional and government clients are also very competitive, with narrow spreads. But it is an entirely different story as far as retail clients are concerned. The spread between the bid and ask price for a currency in the retail market is usually quite large, and may also vary significantly from one foreign exchange dealer to the next (Luca, 2007).

Burnside et al (2006) argues that the bid-ask spread is simply the difference between the price at which a dealer will buy a currency and the price at which the dealer will sell a currency. In other words, the bid price is the price that the dealer is willing to pay or bid for a currency, while the ask-price is the price that the dealer wants for a currency. Local banks like KCB and Equity, foreign exchange bureaus are making a killing by charging price spreads of up to four shillings per dollar above the daily mean exchange rate. The trend, which has caught up in earnest in the last few months, is aggravating further the impact of the weakening shilling against major world currencies with dire consequences to the economy (Warutere, 2005).

A direct currency quote, also known as a "price quotation," is one that expresses the price of a unit of foreign currency in terms of the domestic currency. An indirect currency quote, also known as a "volume quotation," is the reciprocal of a direct quote, and expresses the amount of foreign currency per unit of domestic currency (Larue, et al 2010).

Chen et al (2012) PostulateS that since the US dollar is the dominant currency in foreign exchange markets, most currencies are quoted in direct quote form, as for example USD/JPY and USD/CAD, which refers to the amount of Japanese yen and Canadian dollars per one US dollar respectively. Note that the currency to the left of the slash is called the base currency, and the currency to the right of the slash is called the counter currency or quoted currency. Commonwealth currencies such as the British pound and Australian dollar – as well as the euro – are generally quoted in indirect form, as for example GBP/USD and EUR/USD, which refers to the amount of US dollars per one British pound and euro respectively.

Offer (2013) noted that Kenyan banks foreign exchange departments have been insisting on buying currency at the lowest possible value and selling to the highest possible bidder. Revelations of speculation on the current volatility comes at a time when CBK recently moved to curb the operations of foreign exchange bureaus in a bid to tame speculation in the foreign exchange market. CBK has spelt out measures that include an increase in the level of capitalization of the outfits and an additional requirement of a daily minimum amount below which it will be illegal for a foreign exchange bureau to operate (Ndung'u, Machuki & Murerwa, (2014).

2.3.2 Dividend Income

Baker (2009) observes that many organizations invest in dividend-paying stocks to take advantage of the steady payments and the opportunity to reinvest the dividends to purchase additional shares of stock. Since many dividend-paying stocks represent companies that are considered financially stable and mature, the stock prices of these companies may steadily increase over time while shareholders enjoy periodic dividend

payments. In addition, these well-established companies often raise dividends over time. For example, a company may offer a 2.5% dividend one year, and the next year pay a 3% dividend. It's certainly not guaranteed; however, once a company has the reputation of delivering reliable dividends that increase over time, it is going to work hard not to disappoint its investors.

A company that pays consistent, rising dividends is likely to be a financially healthy firm that generates consistent cash flow (this cash, after all, is where the dividends come from). These companies are often stable, and their stock prices tend to be less volatile than the market in general. As such, they may be lower risk than companies that do not pay dividends and that have more volatile price movements (Gatchev, Pulvino & Tarhan, 2010).

Many banks have reported to have invested in companies that have steady incomes with an aim of not only financing the operations of such companies but also partaking on the annual incomes of those companies because it is reported that steady companies make high annual profits. Because many dividend-paying stocks are lower risk, the stocks are an appealing investment for banks looking for a way to generate income over the long haul (Brandeis, 2009).

James (2002) argues that dividends often provide banks with the opportunity to take advantage of the power of compounding. Compounding happens when we generate earnings and reinvest the earnings, eventually generating earnings from the earnings. Dividend compounding occurs when dividends are reinvested to purchase additional shares of stock, thereby resulting in greater dividends.

To illustrate the power of compounding Malkiel (2003), let's assume that someone asks you if you would rather be given $1,000,000 today, or be given one penny that would double in value every day for 30 days. At first thought, it seems logical that the $1,000,000 would be a better choice. After some number crunching, however, we determine that it would be better to take the penny and watch it grow for 30 days.

2.3.3 Deposit and Transaction Fees and Other Account Fees

Collins (2012) observes that a new survey of 50 of the nation's largest banks finds that basic banking costs jumped in just about every category in 2012. That includes the minimum amount required to open an account which jumped to $408.76 on average up from $391.41. The higher this minimum becomes, the poorer customers may be forced to go un-banked, the survey notes.

Lall (2012) noted that monthly service fees also increased to $12.08 from $11.28 last year. Broken down by bank size larger banks with more than $25 billion in deposits charge more with the average monthly maintenance fee $13.88 while it was only $9.87 at small banks (those with less than $5 billion in deposits).Overdraft fees increased incrementally to an average of $29.83, up from $29.23. Previous surveys have tended to show more of a mixed bag, with some fees rising and others falling. But the latest survey shows a comprehensive trend toward checking accounts becoming more expensive, the survey notes.

Local banks in Kenya offer Salaries, pension and other remittances like agricultural proceeding services like through Equity Bank accounts are affordable cost of Kshs.100. However, remittances of agricultural proceeds may be charged Kshs.50 or Kshs.100 depending on the area (Coetzee, Kabbucho & Mnjama, 2002).

2.3.4 Fees and Commissions Income on Loans and Advances

King (2012) notes that the latest data doesn't bode well for banks who are struggling to keep customers happy last year Bank of America announced it would start charging customers a \$5 monthly debit card usage fee and it faced heavy criticism. It eventually back-tracked though.

King (2012) survey shows that banks haven't stopped looking for other ways to charge customers additional fees. Well, for one thing banks are for-profit institutions whose obligations, for the most part, are to their shareholders. But more specifically, there were new regulations made last year that affected banks' revenue stream. The so-called Durbin Amendment put a cap on the fees bank could charge retailers like Wal-Mart and target each time a customer used their debit card there.

Geisst (2010) observed that if a customer used their debit card for a \$50 transaction at a shopping joint then the debit-card issuing bank would take a small percentage of that total from the shop joint. Retailers, with the help of Senator Dick Durbin, fought back on those so-called swipe fees and won. Now banks are limited to charging retailers roughly 23 cents per swipe. That's now translating in higher fees by banks looking for ways to make up for that lost money.

When Bank of America said it would start charging \$5 a month Senator Durbin urged the banks customers to leave the bank. Presumably he was telling them to bank elsewhere where such fees don't exist. Unfortunately, there's new data showing the number of institutions offering free checking accounts is shrinking a bit (King, 2012). Only 45% of banks offer free checking in Bank rate's 2011 checking account survey, and that number is likely to drop. At credit unions, the number is higher with 72% offering free checking but that's down 4% from last year's study (Geisst, 2010).

In Kenya it is reported that Payment of school fees is easily and conveniently with Equity Bank, a customer can buy a Banker's cheque at only Ksh 100. Deposit at any Equity Bank branch or Equity Agent for free if the School, College or University has an account with Equity Bank. This service is available to customers and non-customers. the bank is doing this in its quest to expand its revenue base (Coetzee, Kabbucho & Mnjama, 2002).

2.4 Conceptual Framework

Conceptual framework is a schematic presentation which identifies the variables that when put together explains the issue of concern (Peters, Elmendorf, Kandola & Chellaraj, 2000). It is a set of broad ideas used to explain the relationship between the independent variables (factors) and the dependent variables (outcome) (Coulthard, 2004). In this study the dependent variable is systemic risk while the independent variables are effects of non-interest income on the aversion of systemic risks of commercial banks. The variables and their relationship are shown in the Figure 2.1 below:
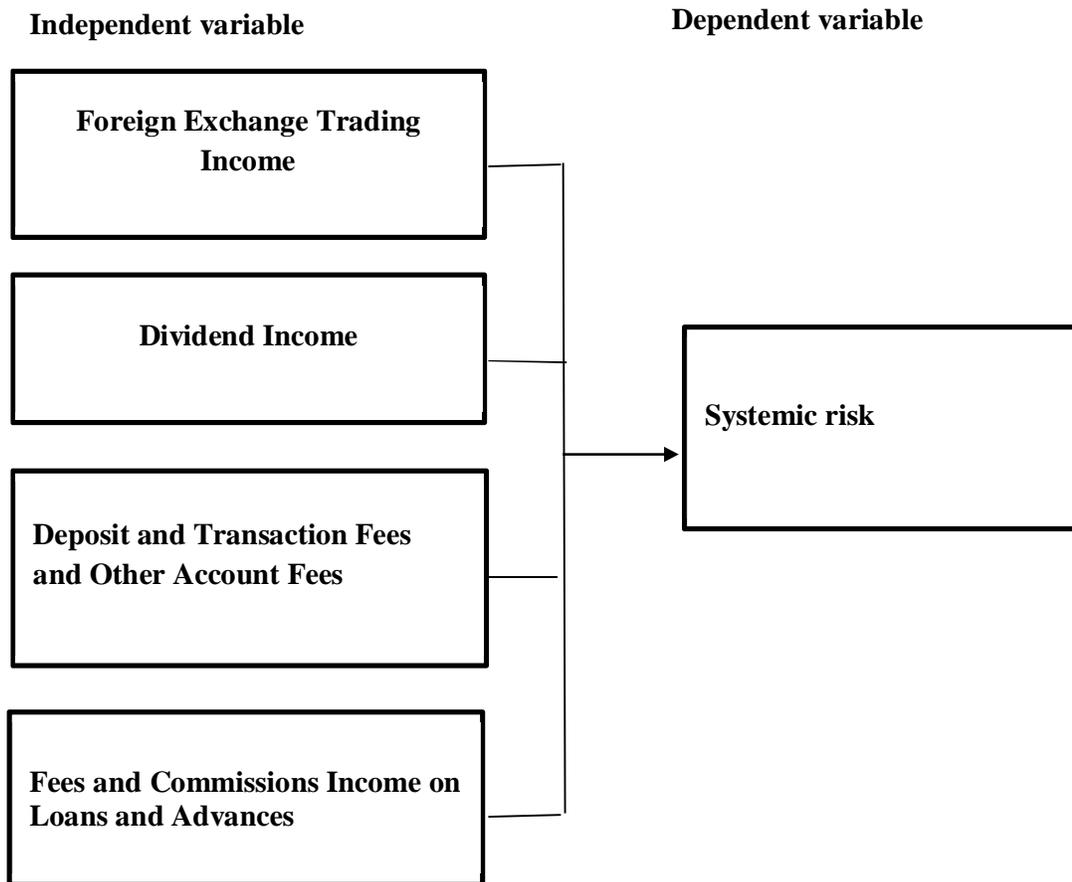
Independent variable   **Dependent variable**

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┌─────────────────────────────┐
│  Foreign Exchange Trading   │
│           Income            │
└─────────────────────────────┘

┌─────────────────────────────┐              ┌──────────────────────────┐
│      Dividend Income        │              │                          │
│                             │  ──────▶     │     Systemic risk        │
└─────────────────────────────┘              │                          │
                                             └──────────────────────────┘
┌─────────────────────────────┐
│  Deposit and Transaction Fees│
│    and Other Account Fees   │
└─────────────────────────────┘

┌─────────────────────────────┐
│ Fees and Commissions Income on│
│     Loans and Advances      │
└─────────────────────────────┘
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Figure 2.12: Conceptual framework

3.0 Research design

Research design is the overall plan used in collecting information useful in fulfilling research objectives (Hakim, 2000). According to the author, research design acts as a blueprint since it illustrates all the major parts of the research project and how the goals are achieved. The descriptive research design will be employed in this study. Descriptive research, according to Kothari (2004), is the statistical study that identifies and explains trends in the study population about the study topic. This is a design that illustrates the characteristics of a variable in the study population. Descriptive research is used in this study since it tends to answer "what is the relationship" question. It also intensely uses descriptions as a method of data analysis which are typically grouped into patterns for analysis. Descriptive research method may be successfully used to identify the relationship between two variables, revealing summary statistics and always help in recognizing alteration needed (Richey & Klein, 2002). Appropriately, Ndichu (2014) and Ngigi (2009) successfully used descriptive research in their projects and so its applicability in this study.

3.3. Target Population

Kothari (2004) defines study population as the sum total of elements about which inferences are to be made. Thus, the group made up of all possible observations of a characteristic of interest is the population, while a collection of observations presenting only a portion of that population. The populations in this study are all the 42 commercial banks in Kenya as at December 2014.

3.4. Sample size and sampling procedure

The study sought to establish the effect of non- interest income on the risk averseness of commercial banks in Kenya. The population of interest included 42 commercial banks. Also, an industry aggregate was got from central bank report on bank supervision (Appendix II shows all the commercial banks in Kenya).

The period of study covered five (5) years from 2010 to 2014 both years inclusive. The choice of five years was taken to be reasonable because of average ratios shift over time and also the availability of necessary data. The research employs secondary data from Nairobi Security Exchange and Bank Supervision Reports. Banks that do not provide data for all years in the period 2009-2013 in the aggregate if any and any births and deaths during that period if any were excluded.

4.0 RESEARCH FINDINGS AND DISCUSSIONS

4.1 Descriptive Statistics

Descriptive statistics has been used to show quantitative relationship between the study variables. The table below shows the mean, median, minimum, and maximum and standard deviation values.

The findings are as presented in the Table 4.1 below;

Table 4.13: Descriptive statistics

	N	Minimum	Maximum	Mean	Std. Dev
ROA	210	-10	6.10	2.4079	2.04195
Non-interest Income	210	-69	1.19	.5019	.25629
Foreign exchange trading	210	00	18.63	14.4679	2.54085
Dividend income	210	00	1.01	.1818	.15226
Deposit and transaction fee	210	00	10.09	.7558	1.43420
Fees and commission	210	00	87.93	45.4756	19.50241
Valid N (list wise)	210				

Source: Research Findings

From the above findings, the mean value of the return on (ROA) assets is 2.41%, the standard deviation is 2.042. The noninterest income is 0.5% this means that most commercial banks in Kenya diversify their businesses into other lines that are not part of their core activities. The mean foreign exchange trading of commercial banks in Kenya is 14.5%, this is a strong indication that most commercial banks have adequate resources and capacity drawn from their large customer base and a branch network to effectively diversify into other lines of business. The results revealed that dividend income of commercial banks is 0.18% and its standard deviation is .15%. This implied that most commercial banks promoted stability and efficiency of their financial system.

Further the findings revealed that the deposit and transaction fees of commercial banks was 7.6% which is slightly below the conventional rule of 2:1 and 1:1 for liquidity ratio. This was an indication that only a few

commercial banks that were not able to meet their financial obligations on time. Further, the results observed that the fees and commissions of commercial banks was 45.5% which implies that commercial banks were efficient in their operations this contributed to increased aversion of the systemic risks.

4.4 Correlation Analysis

The relationship between both the direction (positive or negative) and strength of the relationship between the variables was investigated using Pearson product-moment correlation coefficient. This was important in order to assess whether any relationship exists between the variables before carrying out further analysis. The classification employed is strong (0.7 and over), moderate (0.4 and less than 0.7) and weak (0 to less than 0.4). Correlation analysis was also used to determine the existence of multicollinearity between the independent variables. Multicollinearity exists when independent variables are highly correlated ($r \geq 0.9$) and tends to lead to a poor regression model.

Table 4.14: Correlation Analysis

	ROA	Noninterest income	Foreign exchange trading	Dividend income	Deposit and transaction fee	Fees and commission
ROA	1					
Non-interest Income	.465	1				
Foreign exchange trading	.156	.088	1			
Dividend income	.756	.705	.119	1		
Deposit and transaction fee	.-315	-.173	.062	-.267	1	
Fees and commission	.004	.370	-.172	.105	-.022	1

Source: Research Findings

As shown in table 4.3, there is a moderately positive correlation between Noninterest income and systemic risks of commercial banks as follows r=0.465. The results observed that there was no correlation between foreign exchange trading and fees and commissions with systemic risk of commercial banks in Kenya the results were as follows: r=0.156 and r=0.004. The study further revealed that there was a strong positive relationship between dividend income and systemic risk of commercial banks in Kenya, the results are as follow r=0.756. It was also observed that there was a moderate negative relationship between the level of deposit and transaction fee and systemic risks of commercial bank in Kenya. The results were as follows r= -0.315.

4.5 Regression Analysis and Hypothesis Testing

Regression analysis is a statistical process that is concerned with establishing the relationship between variables in a study. The study predicted a positive relationship between non-interest income and systemic risks of commercial banks in Rwanda. The findings are presented in the Table 4.4 below.

Table 15.4: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.462a	.546	.642	1.83418

a. Predictors: (Constant), Foreign exchange trading, Dividend income, deposit and transaction fee, Fees and commissions
Source: Research Findings

From the above findings, R represents multiple correlation its show a moderately strong correlation between the variables as follows R=.462. The coefficient of determination which is represented by R^2 is 64.2%. It shows the proportion of variance in the dependent variable (Systemic risks of commercial banks) that is explained by the independent variables. With regard to the findings the independent variables explain 35.8% of the variability of the dependent variable.

4.5.1 Analysis of Variance

Analysis of variance was used to test whether the overall regression model used in this study was a good fit for the data. The findings are presented in table 4.5 below.

Table 4.16:ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
	Regression	177.085	5	35.417	10.528	.000b
1	Residual	652.657	194	3.364		
	Total	829.741	199			

a. Dependent Variable: ROA
b. Predictors: (Constant), Constant), Foreign exchange trading, Dividend income, deposit and transaction fee, Fees and commissions
Source: Research Findings

The above results show that the independent variables statistically significantly predict the dependent variable, F (5, 199) =10.528, p<0.05 which implies that the b regression model is a good fit of the data. These findings are consistent with the hypothesis of this study which predicted a positive relationship between noninterest and systemic risk of commercial banks in Rwanda.

4.5.2 Model of Coefficients

The study did the tests of coefficient to find out the direction of the relationship between non-interest income and profitability of commercial banks in Rwanda. The results obtained are provided in the Table 4.6 below.

Table 4.17:Model of Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	-.636	.929		-.685	.494
Non-interest Income	2.401.	.562	.301	4.270	.000
Foreign exchange trading	139	.052	.173	2.677	.008
Dividend income	.554	.987	.041	.561	.575
Deposit and transaction fee	-.458	.093	-.321	-4.913	.000
Fees and commission	.001	.007	.014	.212	.832

a. Dependent Variable: ROA

Source: Research Findings

From the above results the following regression equation was obtained from the unstandardized beta coefficients as shown below:

ROA= -.636+2.401X1+.139X2 +.554X3 +.001 X4 + e

From the regression model obtained above, holding all the other factors constant, a unit increases in noninterest income results to a corresponding increase in ROA by 2.401. A unit increase in foreign exchange trading, dividend income fees and commission of commercial banks results into a corresponding increase in ROA by 0.554, 0.139 and 0.001 respectively. This implies that holding all the factors constant a unit increase in one of the independent variables results into a corresponding increase in the dependent variable which is return on assets.

Deposit and transaction fee whose beta of the coefficient was found to be -0.458 was excluded from the regression model since it depicted a negative relationship with systemic risk of commercial banks. The results observed that the p-values of noninterest income, dividend income and fees and commission were found to be statistically significant since their p-values were less than 5% as follows: p=0.000, p=0.008 and p=0.000. Dividend and income and fees and commission were found to be statistically insignificant since their p-values were more than 5% as follows; p=.575 and p=.832.

4.6 Discussion and Findings

The findings concluded that most commercial banks have diversified their businesses into other lines of businesses that are part of their core activities. The findings concluded that most commercial banks were efficient and hence able to meet their financial obligations. The findings show that there was a moderately positive correlation between noninterest income and systemic risk of commercial banks. This correlation was found to be 0.465. The findings further revealed that there was no correlation between the foreign exchange trading and efficiency in relation to commercial bank's systemic risk. The findings also revealed

that dividend income was positively related to systemic risk of commercial banks. Further, the regression results above have concluded that the p-values of noninterest income, foreign exchange trading and deposit and transaction fee were found to be statistically significant since their p-values were less than 5%. Dividend income and Fees and commission were found to be statistically insignificant since their p-values were more than 5% as follows; p=.575 and p=.832.

5.0. Conclusions

The study concludes that noninterest income is positively related to profitability of commercial banks in Rwanda. This means that most commercial banks should practice diversification in order to boost their income and expand their business. This will enable commercial banks to minimize their risks since they have diverse sources of income.

5.4. Recommendations

To realize increased systemic risk by commercial banks in Rwanda, they should practice corporate diversification in order to boost their income and grow their businesses.

Corporate diversification acts as an extra source of income that the bank can harness and invest in capital projects. This helps commercial banks to mitigate risks since it has many sources of income.

1. The study recommends that commercial banks should work towards minimizing their operational expenses to boost profitability. This suggests that there is possibility for the commercial banks to increase their profits by putting more effort on proper costs control and operating efficiency. This can be achieved by finding ways of optimal utilization of bank resources during production of banking products and services.

2. The study suggests that government policies in Kenya should encourage commercial banks to raise their assets and capital base. Commercial banks need to invest on efficient management and in technologies that reduce costs of operations in order to enhance their performance. These results are very important to the commercial banks in Rwanda, if they have to survive and grow.

3. The study further recommends that commercial banks should increase their foreign exchange trading by increasing the volume of foreign exchange transactions and ensuring that positive trade flows are maintained.

4. The study also recommends that commercial banks should look for more alternative sources of income other than their core activities an example is investing on government securities to earn more commission from treasury bonds and Treasury Bills.

5.5. Areas for further research

A comparative study can be carried out to establish whether on interest income impacts positively on profitability in another sector other than commercial banks.

Investment companies could be a probable area of interest in order to provide a rich base for comparison this might assist in drawing plausible conclusions based in concrete facts upon which reliable conclusions can be made. Areas of commonalities or unique factors can then be established. Future researchers should consider investigating the effect diversification on growth of commercial banks. The findings might be useful is guiding commercial banks to invest in diversification as a way of growing and expanding their business in a competitive market.

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