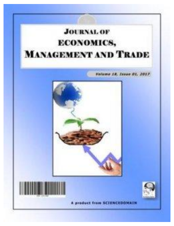

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Effect of Non-interest Income on Banks' Profitability in Nigeria

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Authors' contributions

This work was carried out in collaboration between both authors. Author AOA designed the study, performed the statistical analysis, wrote the protocol and wrote the first draft of the manuscript. Author OAA managed the analyses of the study and the literature searches. Both authors read and approved the final manuscript.

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ABSTRACT

Nigerian deposit money banks are facing diverse challenges to remain profitable through the traditional interest income stream. The study examined the effect of non-interest income on the profitability of deposit money banks' in Nigeria between 2006 and 2015. Five out of the 21 banks in the category were purposively selected based on the numerical strength of their customers, volume of transactions, geographical spread and accessibility to balanced secondary data especially on the internet. Using ex-post facto research design, secondary data were collected from the banks' published annual financial reports. Percentages and multiple regression analysis were used for data analysis. The result showed that the variations in the linear combination of total non-interest income, liquidity ratio, prime lending rate and inflation for the banks explain 61.5% of the changes in profitability. It revealed that non-interest income is a significant predictor of profitability since p- value for this coefficient is statistically significant ($p<0.001$). The study concluded that non-interest income has a positive and significant effect on deposit money banks' profitability but the growth rate has been inconsistent. Based on the findings of the study, it was

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recommended that deposit money banks should benchmark their competitors and be ready for continuous improvement of their products and services to generate more non-interest income to boost profitability.

Keywords: Non-interest income; profitability; deposit money; banks.

1. INTRODUCTION

The bank-customer relationship about a decade ago appeared to have allowed banks make arbitrary income from their customers without stiff opposition, but things have changed, and customers can no longer be charged anyhow. At that period, banks used to be sought after by the customers especially during the era of armchair banking when bankers were kings and customers; the servants. Unlike what could be taken as normal bank charges on transactions, it seems difficult nowadays for banks to make a questionable profit, perhaps due to competition, economic downturn when liability generation is tasking, enhanced socialisation, globalisation and financial education. Bankers are forced out of their comfort zone to do more than mobilise liability and book portfolio to stay afloat and satisfy their customers. It is through customer satisfaction and retention that profitability results due to good service delivery by the banks. The need then arises for banks to be creative in profit generation such that customer satisfaction is not adversely affected.

To remain in business, banks are involved in different activities such as investments, trading and money transfer through which non-interest income is earned. This has also been attributed to recent structural forces of change that have caused banking in emerging markets to experience a decline in its traditional activities and leading them to diversify into new business strategies [1].

Profitability appears to play a dominant role in enhancing the corporate image of banks since it creates a win-win situation between the banks and their stakeholders especially the investors. It may translate to huge dividends for the shareholders, investment opportunities for prospective investors and good market share for the bank [2]. High performance can enhance the possibility of offshore investment opportunities and presence. Each bank tries to remain strong in the market by finding different innovative ways of generating income aside from asset creation.

Recently, globalisation might have exposed Nigerian banks to competition beyond the confine of the country through ratings by organisations such as Moody, Standard and Poor's and Fitch, based on their overall performance [3]. Also, money appears to be scarce in circulation due to the perceived prudent and accountable stance of the central government in Nigeria. Banks are looking inward for survival through other means especially the non-interest income stream since some big-time depositors tend to keep money outside of the banks' vaults hence the importance of non-interest income to the banks.

According to Were and Wanbua [4] various types of interest rates were observed to have declined progressively since the 1990s in the commercial banks. The trend is not abating in recent years. This has brought the importance of non-interest income to deposit money banks’ profitability to the fore, more so when banks performance is important nationally and to the individual economic units because banks perform other functions in the larger economy [5]. Good as profit making is, most account holders especially the high net-worth organisations and individuals often negotiate a reduction in commission on turnover (COT) while others request for a reduction in the interest payable on loans [6]. As the economy weakens, credit collection becomes seriously hampered especially when salaries remain unpaid for months, which implies a possible escalation in loan loss provisioning for the banks. These activities are suggestive of the need for banks to find other avenues other than the traditional transactions to increase profitability.

Nigerian banks are cost bearing through the payment of competitive salaries, regular staff training and payment of taxes to the coffers of government as at when due. At times, all levels of government collect various levies from banks in addition to the social responsibility being rendered to their host communities which impact their bottom line. Similarly, while shareholders are expectant of huge dividends as well as bonus shares at the end of the accounting year irrespective of the challenges facing the banks, investors, on the other hand, are studying the performance of these banks on the stock exchange which calls for improved profitability [2]. It tends to follow that while high performing banks' share price will be rising due to the high return on investment, poor performers will be losing the market.

Besides, banks' profitability is often seen as a reflection of a nation's economic development thus international organisations tend to show special interest in the performance of banks through which they can gauge the health of the national economy. Revenue generation through non-interest sources appears to be the panacea to banks' profitability and sustainability. However, there is no consensus on the effect of non-interest income on the profitability of deposit money banks in Nigeria due to contradictory findings that abound in the literature.

1.1 Research Question

Going by the contribution of non-interest income to banks' profitability in Nigeria, the following question was answered in this study. What is the effect of non-interest income on the profitability of deposit money banks?

1.2 Objective of the Study

The objective of the study is to establish the effect of non-interest income on the profitability of deposit money banks in Nigeria.

2. LITERATURE REVIEW

2.1 Conceptual Review

Ayanda et al. [7] referred profitability as the ability of a business organisation to maintain its profit year after year. Organisational profitability contributes to the economic development of the nation, provides additional employment and tax revenue to government exchequer and contributes to income of the investors by having a higher dividend; thereby improving the standard of living of the people. Osuagwu [8] opined that bank profitability is an essential ingredient of financial development, its relevance spans through banking firms' performance to macroeconomic stability. At the firm level, a higher return to a large extent reduces bank fragility. At the macro level, increased profitability makes for a sustainable banking sector that can finance economic growth and development. This is the reason why every bank wants to be profitable at all times.

Based on the literature, profitability in the banking sector is important at the micro and macro levels of the economy regarding sustainable banking, increased dividend payout and macroeconomic stability. Profit is viewed as the essential prerequisite of a competitive banking institution and the cheapest sources of funds. However, the source of income that enables profitability has mainly been interest income. Economic recession, intense competition among banks and the high level of non-performing loans tend to make asset creation less attractive. This study defined profitability as the positive left over when cost is deducted from income and with focus on the non-interest component of banks' revenue. Profitability can be measured as return on investment (ROI), return on equity (ROE), return on assets (ROA), or profit before tax (PBT). The study adopts profit before tax as a measure of banks' profitability [9].

2.2 Empirical Review

Non-interest income appears stable, less risky and support diversification, and it is a means of revenue generation and liquidity assurance in the event of increased default rates. An increase in non-interest income improves bank earnings and seldom occurs without associated changes in interest income, variable inputs, fixed inputs, and financing structure. It was conventionally believed that expansion into products and services reduced earnings volatility via diversification effects [10]. Having products that attract a significant amount of fees contribution to the performance of a commercial bank is an added advantage.

Gu and Kim [11] contend that non-interest income can increase the total level of income of commercial banks in several ways, but it can create challenges for banks. They concluded that non-interest increases volatility of bank earnings and operating risk such that overall income can increase in the initial stage, but the marginal income of non-interest income will decrease while the rising operating costs will eventually decrease the net income. It means that excessive focus on non-interest income generation at the expense of interest income may not be highly desirable because of its minimal benefit to banks' profitability in the long run.

The development of new financial technologies such as cashless transactions and mutual funds are associated with higher levels of non-interest income in the banking system. Increases in non-interest income tend to be associated with higher profitability, higher variation in profits, and worsened risk-return tradeoffs for the average commercial bank during specific periods of times [12]. In addition, De Young and Rice [13] reported that the potential diversification benefit from the shift into non-interest income sources of bank revenue in US commercial banks has not only contributed to higher levels of bank revenue over time but also led to the belief that it can reduce the volatility of bank profit and can reduce risk.

In contrast, universal banking which has been the historic norm in many banking systems and small community banks are less prevalent. It is possible that the combination of experience, size, and expertise could allow the average bank to better exploit the diversification potential of fee-based activities to have a healthy financial stand, must generate higher amounts of non-interest income. For example, a well-managed bank will set its fees to exploit market demand and will to its core customer base. Thus, holding the product mix and banking strategy constant, the intensity of non-interest income is likely to be a forward-looking signal of a bank's financial success [14.]

De Young and Rice [15] show that cost-efficient deposit generates more non-interest income, the causal these variables. De Young [16] finds similar results for profit efficient commercial banks. According to Rogers [17], data indicate that service fees, including those charged by credit unions, are a key factor in driving customers away. This means that sometimes fee-based income is made at the expense of customer relationship and loyalty, which in the long run can be counterproductive.

Similarly, Muckian [18] reveals that banks' non-interest income either from trading income or venture capital income is related to systemic risk in the United States of America. Brunnermeier, Dong and Palia [19] investigated the impact of non-interest income on bank performance of Tanzanian banking sector using fixed effect model (FEM) from 2002 to 2012. The sample of 25 more than 90 was used. The findings suggested that relying on non-interest income activities may adversely affect bank performance. Besides the study found that interest income has a positive impact on performance. However, due to the improvement of technology, competition, the existence of interest forbidden society and deregulation, focus only on interest income activities in this modern age might not be viable. Diversification might be the best alternative because the findings confirmed the hypothesis that diversification is good for the banking sector performance in Tanzania.

Mndeme [20] showed that increased default rates make it imperative for banks to source for non-interest income to shore-up profitability. The researcher found that non-interest income is largely unaffected by economic and financial market cycles while it is usually not controlled by law or regulation in Kenya. Similarly, Brunnermeier et al. [19] found that non-interest income is good for the banking sector. Non-interest income is among the significant factors influencing bank profitability. Oniang'o [21] showed that increased default rates make it imperative for banks to source for non-interest income to show-up profitability. Saunders, et al. [22] studied with a larger sample of US banks found non-interest income to be associated with higher profitability across all banks groups. Perhaps the negative influence of non-interest income on bank performance may be explained by managerial diseconomies where transaction costs outweigh the benefit.

In summary, studies conducted in other countries other than the US, such as; Vietnam [23], Turkey [24], cross-country study [25], and Italian banks study [26] found that non-interest income positively affects bank performance. The review identified one study for German banks by Halden, Porath and Westernhagen [27] which was contradictory to many in the region arguing diversification to be associated with a reduction in bank return. Therefore, there is no consensus on the effect of non-interest income on bank profitability, thus creating a gap to be filled through research.

2.3 Theoretical Review

The study is based on the theory of diffusion of innovation. Roger [17] defined diffusion as the process by which an innovation is communicated through certain channels over time among the members of a social system. The author opined that an innovation is an idea, practice, or object perceived as new by an individual or another unit of adoption. Similarly, Richard, Florence, and Zénon [28] explained that diffusion of innovations is a theory that seeks to explain how, why, and at what rate new ideas and technology spread through cultures. It analyses how the social members adopt the new innovative ideas and how they made the decision towards it. Both mass media and the interpersonal communication channel are involved in the diffusion process. The theory heavily relies on human capital and that innovations should be widely adopted to attain development and sustainability. In real life situations, the adaptability of the culture played a very relevant role where ever the theory was applied especially in the banking system where new services are creatively introduced to satisfy customer needs. Such innovations become attractive to the consumers who will be willing to pay the price whereby the organisation makes its profit while ensuring customer satisfaction. The theory of diffusion of innovation is applicable to this study because most non-interest earnings come from innovative products and services especially with the application of technology in banking.

3. RESEARCH METHODS

The study used the ex-post facto research design of the survey type owing to its capability to address the objective of the study. The study was based on secondary data obtained from published financial statements of deposit money banks in Nigeria. Five banks out of the twenty-one deposit money banks in Nigeria were considered. The five banks were Guaranty Trust Bank, First Bank of Nigeria, Fidelity Bank, Access Bank, and Zenith Bank, all of which can be considered large banks. The banks' published consolidated reports were readily available for analysis. The annual report provided the required data for the ten years, and they were adequate for the study. The types of data collected were the five selected banks' profitability, interest income, non-interest income and the components of non-interest income respectively from 2006 to 2015. A regression model was used to determine the effect of non-interest income of the DMBs' profitability. The statistical package "Statistical Product and Service Solutions"-SPSS [29] was used.

The regression model used in this study is as follows;

PBT=f (NII)

PBT=Y=f(X) - - - - - - - - - - - (Basic Model).

PBT =Y=β+β1X1+β2X2+β3X3+β4X4 + έ ……PBT= Y= $\beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + έ$

$= \beta + \beta_1 NII + \beta_2 LR + \beta_3 PLR + \beta_4 INF + έ$

Where;

Profitability (PBT) = Profit before Tax

NII = Total noninterest income was calculated as the ratio of non-interest income to total income

LR= Liquidity Ratio was measured by current assets divided by net current liabilities

PLR = Prime Lending Rate is the national reference interest rate based on a bank landing to its creditworthy customers which is published by the Central Bank of Nigeria. It is also called the benchmark interest rate.

INF =Inflation (Yearly average rate) is estimated by calculating the inflation rate of a price index, usually the Consumer Price Index and the inflation rate is the annualised percentage change in a general price index.

3.1 Variable Description

3.1.1 Dependent variable

The dependent variable for the model is banks' profitability (Profit before tax).

3.1.2 Independent variables

The independent variables for the model are non-interest income, inflation rate, liquidity ratio and prime lending rate. Panel regression was used for data analysis.

β_0 = Regression Constant term.

β_1, β_2, β_3, β_4= Regression coefficients of the variation to determine the volatility of each variable to banks profitability in the regression model.

έ = Error term normally distributed about the mean of zero.

4. RESULTS AND DISCUSSION

All the five deposit money banks selected for the study were found to be actively involved in generating non-interest income through various means but under different nomenclatures.

A regression analysis of profitability of deposit money banks as dependent variable on the independent variables (Total Non-interest Income, Liquidity Ratio, Prime Lending Rate and Inflation) was carried out to show the combined predictive effect of the independent variables on the dependent variable and also the variability in the dependent variable contributed by each of the independent variables.

From the result, inflation rate, liquidity ratio and non-interest income are significant at 5% level of significance and are positively related to banks' profitability with a standardised coefficients of 0.11, 0.157 and 0.778 respectively. It shows that a unit increase in inflation rate leads to increase in banks' profitability by 0.11 unit, a unit increase in liquidity ratio leads to increase in banks' profitability by 0.16 unit, and a unit increase in non-interest income leads to increase in banks' profitability by 0.78 unit respectively. The result also reveals that prime rate is significant at 5% and negatively related to banks' profitability with a standardised coefficient of -0.021, which means that a unit increase in prime rate leads to decrease in banks' profitability by 0.021 unit. The relationship is low between prime rate, liquidity ratio, inflation rate and banks profitability but the relationship between non-interest income and banks profitability is high.

The multiple regression coefficients of SPSS output is presented in Table 3. Under the column marked Unstandardised Coefficients and sub-column, B is the value for the intercept (a) in the regression equation on the first row, labelled (Constant). The numbers below it in the same column are the values for the regression coefficients' total non-interest income, liquidity ratio, prime lending rate and inflation. Based on these results, the regression equation that predicts profitability based on the linear combination of total non-interest income, liquidity ratio, prime lending rate and inflation is as follows:

PBT = -37496.30 + 1.255 NII + 553.12 LR - 764.88 PLR + 1617.96 INF

This result indicates, first, that the intercept is -37496.30 when all independent variables have a value of zero. Moving through the equation; holding liquidity ratio, prime lending rate and inflation constant, the profitability increase by *1.255* for each additional increase in the total non-interest income. The p-value for this coefficient is statistically significant ($p<0.001$), meaning that non-interest income is a significant predictor of profitability. Holding other independent variables constant, liquidity ratio, prime lending rate and inflation individually increase, decrease and increase profitability by 553.12, -764.88 and 553.119 correspondingly for each additional increase in each of the predictors, but these coefficients are not statistically significant (p=0.301, 0.835, and 0.158). Liquidity ratio, prime lending rate and inflation are individually not a statistically significant predictor of the profitability.

Table 2 labelled ANOVA in the SPSS output provides the results of a test of significance for R and R square (R^2) using the F-statistic. In this analysis, the p-value is well below 0.05 ($p < .000$), and it can be concluded that R and R^2 for the multiple regression conducted, predicting profitability based on the linear combination of total non-interest income, liquidity ratio, prime lending rate and inflation is statistically significant.

Table 1. Result of regression analysis

Model		Unstandardised coefficients		Standardised coefficients	T	Sig.
		B	**Std. error**	**Beta**		
1	(Constant)	-37496.299	74543.007		-0.503	0.617
	Inflation	1617.964	1545.957	M 0.108	1.047	0.301
	Prime Rate	-764.884	3646.967	-0.021	-0.210	0.835
	Liquidity Ratio	553.119	384.983	0.157	1.437	0.158
	Non-Interest Income	1.255	0.152	0.778	8.267	0.000

Dependent Variable: Profitability
Source: Field Survey, 2017

Table 2. ANOVA[a]

Model		Sum of squares	Df	Mean square	F	Sig.
1	Regression	36919096124.297	4	9229774031.074	17.963	0.000[b]
	Residual	23121906704.023	45	513820148.978		
	Total	60041002828.320	49			

a. Dependent Variable: DMB_PBT
Predictors: (Constant), DMB_NII, inflation, Prime Rate, liquidity Ratio

Table 3. Model summary of profitability of DMBs on inflation, prime rate, liquidity ratio and non-interest income

Model	R	R square	Adjusted R square	Std. error of the estimate
1	0.784[a]	0.615	0.581	22667.6013

Dependent Variable: Profitability
b. Predictors: (Constant), DMB_NII, inflation, Prime Rate, liquidity Ratio
Source: Field Survey, 2017

Table 4. Model summary of the effect of non-interest income on profitability of DMBs

Model	R	R square	Adjusted R square	Std. error of the estimate
1	0.769[a]	0.591	0.583	22613.816

a. Predictors: (Constant), DMB_NII
Source: Field Survey, 2017

Table 5. Regression results of the effect of non-interest income on profitability of DMBs

Model		Unstandardised coefficients		Standardised coefficients	T	Sig.
		B	Std. error	Beta		
1	(Constant)	-8903.350	6590.594		-1.351	0.183
	DMB_NII	1.241	0.149	0.769	8.331	0.000

Source: Field Survey, 2017

R Square (R^2) is the measure of the proportion of variance that can be explained in the dependent variable by the variance in the linear combination of the independent variables. The values of R^2 also range from 0 to 1. As indicated in Table 3, the result showed that the linear combination of total non-interest income, liquidity ratio, prime lending rate and inflation for the banks explain 61.5 percent of the variation in profitability. The remaining 38.5 percent of the variation is explained by variable(s) alien to the model. The study showed that there is a significant relationship between non-interest income and profit before tax of DMBs.

4.1 The Effect of Non-interest Income on Profitability of Deposit Money Banks in Nigeria

The Model Summary depicted in Table 4 presents the overall effect of non-interest income on the profitability of DMBs in Nigeria. In this case, due to the small sample size, the Adjusted R Square is reported reported by Pallant [30] in place of the R square value. As shown, this tells how much of the variance in the dependent variable (profitability of DMBs) is explained by the model (which includes non-interest income). In this case, the value is 0.583. Expressed as a percentage, this means that non- interest income explains 58.3 per cent of the variance in profitability of DMBs. This effect is found to be statistically significant as shown by the significant value ($p < 0.05$). Furthermore, non-income interest contributes about 76.9% of the variation to profit before tax of DMBs, which is found to be statistically significant as shown. The coefficient of non-interest income was positive and this implies that as the non-interest income of the deposit money bank increases, their profitability also increases.

5. DISCUSSION

The research results as presented above brought about the following findings which were discussed thus. Firstly, the variance in the dependent variable (profitability of DMBs) that is explained by the model (which includes non-interest income) is shown to be the 0.583. Expressed as a percentage, this means that non-interest income explains 58.3 per cent of the variance in profitability of DMBs. The finding is in line with the findings of Stirroh [15] that non-interest income has become more correlated with net interest income. This means that an increase in non-interest income may also lead to an increase in profit before tax of DMBs in Nigeria. This is in agreement with the findings of Sheng and Wang [31] that increased non-interest income proportion in total bank income can efficiently improve the performance of commercial banks. It also supports the findings of Sanya and Wolfe [26] that studied 226 listed banks in emergent economies from 2000 to 2007 and reported that diversification decreases insolvency risks and enhances profitability. It is in consonance with the findings of Feldman and

Schmidt [10] that the profit of the bank depends mostly on noninterest income but not interest income as people generally expect. Similarly, Rogers and Sinkey [32] showed that collectively, banks with high levels of non-traditional activities tend to be safer, indicating some amount of market discipline. In contrast with the findings of this study, Sun et al. [12] found that there are a non-linear relationship and a general negative correlation between non-interest income ratio and performance of banks in China. Furthermore, Gamra and Plihon [1] show that long time focusing on non-interest income generates volatility of bank earnings, increased operating risk and requirement of higher management ability. In disagreement with the findings of this study, Stiroh and Rumble [33] show that noninterest income unfavourably affects bank performance by either reducing return or increasing income volatility and there is no significant correlation between the noninterest income and the average rate of return. Smith et al. [34] showed that the increase of noninterest income cannot totally cover the income reduction, meaning that non-interest income cannot offset income reduction. Furthermore, in disagreement to the findings of this study, Gamra and Plihon [1] found that diversification gains are more than offset by the cost of exposure to the noninterest income due to income volatility and that diversification performance's effect is found to be no linear with risk, and significantly not uniform among banks. They concluded that banks can reap diversification benefits as long as they are well studied based on the bank's specific characteristics, competencies, risk levels and choice of the right niche.

The findings support the research of Gamra and Plihon [1] and World Bank [35] that the growth of non–interest income was not uniform among banks and across business lines. Diversification will be beneficial when it is well studied based on specific characteristics, risk levels, competences and right niche. The same inconsistent growth was observed by the World Bank [35] which studied American banks between 1998 and 2014.

6. SUMMARY, CONCLUSION AND RECOMMENDATIONS

6.1 Summary

The study investigated the effect of non-interest income on deposit money banks' profitability in Nigeria from 2006 to 2015, and the growth of non-interest income over the time period. Five deposit money banks were sampled in this study. Information on their profitability and non-interest income were gathered from their annual financial reports. These data were analysed by various statistical tools such as percentages, correlation, regression analysis as well as growth and trend function analysis. The results of the correlation matrix revealed that non-interest income has a positive and significant relationship with banks profitability. Using growth function, it was revealed that most of the sampled banks experienced both increase and decrease growth in their non-interest income. Guaranty Trust Bank experienced a more stable growth in its non-interest income, while Zenith bank experienced the most unstable growth among the banks considered for this study.

6.2 Conclusion

This study has empirically revealed that non-interest income has an effect on the profitability of deposit money banks in Nigeria. The findings from this study showed that non-interest income has a positive and significant relationship with deposit money banks' profitability. The result of the regression analysis indicated that the higher the non-interest income of the deposit money banks, the higher their level of profitability. Although banks are striving to develop innovative products and services for generating non-interest income, yet interest income cannot be totally neglected as it still plays a major role in banks' profitability. Based on the findings of this study, it is recommended that deposit money banks should be actively involved in customer analysis and market research to develop those products and services that will continually satisfy majority of their customers so that high non- interest income can be generated. It is also recommended that deposit money banks should further deploy effective and efficient technology that will ease banking transactions which the consumers will be willing to pay for.

7. LIMITATION

The small sample of the study (5) out of 21 banks is a limitation. Therefore, findings may not be generalised though may be considered a motivation for more in-depth research.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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