

Foreign exchange fluctuations and commercial banks profitability in Nigeria

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Abstract

The importance of examining the effect currency fluctuation has on commercial banks profitability cannot be over emphasized, particularly, given this era of Global financial integration. Most commercial banks are said to suffer from erosion of their profit arising from their exposure to fluctuations in international currencies, especially, when proper hedging strategies are not adopted. This study used the balanced panel methodology and data obtained from 12 largest banks in Nigeria to examine the relative effect of currency fluctuation on commercial banks profitability. In other to get the independent effect of currency fluctuation on commercial banks profitability the study also introduced four bank characteristic variables (bank size, bank divestment, non-performing loans and capital adequacy ratio) into the model. The initial result without the bank characteristic variables revealed that the dollar and pounds exerted a 6 percent and 11 percent negative effect on commercial banks profitability respectively. Introduction of the bank specific variables into the model saw the magnitude of the currency fluctuation reduced by 1 percent and 5 percent for the dollar and pounds respectively. More specifically, bank characteristic variables, banks size and capital adequacy exerted positive significant effect on commercial banks profitability while non-performing loans and bank divestment exerted a negative effect on commercial banks profitability. The study therefore recommended that banks should increase their divestment options as well as switch their trading options to the less volatile currency (as a measure of hedging against currency risk) in periods of severe currency fluctuations.

Key words. Banks profitability, capital adequacy ratio, currency fluctuation, exchange rate risk.

Introduction

Globalization is said to have enhanced the trading relationship between and amongst countries, particularly, with the introduction of the electronic payment system. The foreign exchange market portends to be the largest financial market in the world; more so, large banks are the greatest players in this market. The greatest volume of currency is traded in the interbank market. This is where banks of all sizes trade currency with each other and through electronic networks. Large banks account for a larger percentage of total currency traded in the international financial markets. Banks facilitate foreign exchange transactions for clients and conduct speculative trades from their own trading desks. When banks act as dealers for clients, the bid-ask spread represents the bank's profit. Speculative currency trades are executed to profit on currency fluctuations. The current global trend of large banks establishing corporate branches outside their country of domain has further heightened their degree of exposure to exchange rate risk management. The profitability of such large banks might be significantly affected by fluctuations in exchange rate.

Exchange rate risk relates to the effect of unexpected exchange rate changes on the value of the firm (Madura, 1989). It can also be regarded as the possible direct loss (as a result of an unhedged exposure) or indirect loss in the firm's cash flows, assets and liabilities, net profit and, in turn, its stock market value from an exchange rate movement. Foreign exchange exposure is the risk associated with transactions at such financial markets. Essentially, it is the risk that a foreign currency may move in a direction which is financially detrimental to the global and domestic firms, particularly, the commercial banks. While it is observed that there are three types of exchange rate exposure (transaction, economic and translation), notably, economic and transaction exposure is seen to affect the commercial banks more adversely.

Dohring (2008) discussed exchange rate exposure in terms of transaction risk (the risk of variations of the value of committed future cash flows), translation risk (the risk of variations of the value of assets and liabilities denominated in foreign currency) and broader economic risk (which takes into account the impact of exchange rate variations on competitiveness). The paper argues that domestic-currency invoicing and hedging with exchange rate derivatives allow a fairly straightforward management of transaction and translation risk and discusses under which circumstances their use is optimal. The major novelty of this paper is a survey of actual hedging strategies and techniques of large corporations from a euro-area perspective. The paper finds that euro-area exporters have instruments at hand to limit the adverse impact of euro appreciation and that they make ample use of them.

Wong, Wong and Leung (2008) stated that “foreign exchange movement could be an important source of risk for banking institutions. While mild cases could result to erosion of banks profit; large foreign exchange fluctuation could also result to bank failure. Due to the serious implication what foreign exchange movement could cause to risk management, commercial banks and central banks had placed large interest on measuring banks’ foreign exchange exposure. The authors examined the effect foreign exchange exposure had on banks profitability using equity data from 14 listed companies in China. Their result suggested that there exist a positive relationship between bank size and foreign-exchange exposure, which may reflect larger foreign-exchange operations and trading positions of larger Chinese banks, and their significant indirect foreign-exchange exposure arising from impacts of the renminbi exchange-rate movements on their customers.

In a similar empirical study, He, Fayman and Casey (2014) examined the impact foreign currency fluctuations have on banks profitability using 22 large U.S commercial banks. Their result also observed that large U.S. banks were exposed to foreign exchange risk and that specific bank performance was related to the value of the dollar relative to market baskets of other currencies. The significance of this result lies in the fact that the increasing global business environment does not isolate U.S banks from the prevailing levels of global economic activities.

Chamberlain, Howe and Popper (1996) used both daily and monthly data to examine the exchange rate sensitivity of U.S bank holding companies and of the Japanese bank. Their study also investigated U.S. banking firms. Their study also investigate the degree to which U.S exchange rate sensitivity can be explained by accounting measures of foreign activities. The result of the daily data observed that the stock returns of one-third of the thirty large banks sampled appeared to be sensitive to exchange rate movement. In contrast to the result obtained for the U.S banks, the result of the Japanese banks showed that only a few banks were sensitive to exchange rate movement. The authors believed that the significant variation in the result obtained for the Japanese banks was due to differences in the structure of ownership, in securities and derivatives laws, in supervision, in the extent of foreign ownership, or in hedging policies.

Otuori (2013) sought to investigate the determinant factors of exchange rates and their effects on the performance of commercial banks in Kenya using primary source of data with descriptive design. The results of this study revealed that interest rate and external debt had positive and significant effects on performance while inflation rate and external debt had negative and significant effects on performance. Among the recommendations made from this study is that Government should address the issue of burgeoning external debt as higher external debts hurt the performance of commercial banks in Kenya. The study further recommended that the Government should put up more measures to increase the country’s exports as this will go a long way in improving the performance of commercial banks in Kenya.

Similarly, Ahmed (2015) investigated the effect of foreign exchange exposure on commercial bank performance in Kenya using descriptive data and primary sources of investigation. The study found that (1) interest rates had an insignificant positive effect on commercial bank performance (2) foreign exchange exposure has negative effect on the performance of listed commercial banks in Kenya and (3) inflation had negative effect on bank performance. The study recommended that regulators who include Central Bank of Kenya should manage the interest rates in the country in such a manner that the country would realize a stable exchange rate and reduce banks’ exposure to the vagaries of exchange rate exposure.

Taiwo and Adesola (2013) investigated the relationship between foreign exchange fluctuation and banks profitability. The authors captured profitability in two respects, firstly as, the ratio of total loan loss to total advances, and secondly as, the ratio of bank capital to deposit. Their result was significant in two respects, (a) the tendency of banks to accumulate excessive bad loans by reason of fluctuation in exchange rate (b) bank capital level might be seriously undermined due to deteriorating exchange rate. From the opinion of the authors it could be reasoned that, banks are bound to experience decline in profit given uncontained fluctuations in exchange rate.

Ngerebo, TA (2012) sought empirically to investigate the foreign exchange fluctuations on the intermediation of banks in Nigeria using data from 1970 to 2004. The study observed that commercial bank intermediation index (CBII) had a positive relationship with foreign exchange fluctuation. The analysis from the study revealed a R^2 of 27.8 percent suggesting that the explanatory variable used in the model was not sufficient enough to explain deviations on foreign exchange fluctuations. The study had the weakness of using only commercial bank intermediation index to explain deviation in foreign exchange fluctuation.

The discourse on the effect foreign exchange exposure has on banks profitability cannot be more relevant to Nigeria than now. It on record that the later period of 2015 in Nigeria notice a wide swing and variation between the country's domestic currency and other international currencies. For instance, between October and December 2015, the country's currency (Naira) was observed to be weakened in the face of the dollar, exchanging at a record high of N260 to \$1. This situation threw the central bank and other economist into chaos, while trying to seek appropriate policy to reverse the falling trend of the Naira.

Following the report of Fitch rating of September 2015, the renowned credit rating company observed that Nigerian banks may be heading into financial and operational distress following the banks high exposure to the international financial markets. The report noted that the slump in oil prices in 2015 resulted to temporary fuel shortages that caused industrial and manufacturing output to contract and the fall in non-oil growth from 5.6 percent to 3.5 percent as noticed in the First quarter 2015 (1Q2015) led to reduction in government spending and contraction of foreign exchange. According to the agency, the above economic situation had negative impact on capital planning and adequacy, asset quality as well as the profitability of the banks.

Prior to the Fitch report, the National Bureau for Statistics (NBS) had preempted the fears raised by Fitch agency by acknowledging that the country might be facing grievous problem after considering the Second Quarter (2Q15) economic report. NBS acknowledge that "the prevailing economic uncertainty in the country reduced the amount of capital importation into the economy from US\$2.67159bn in 2Q14 to US\$2.66636bn in 2Q15" (NBS, 2015).

In line with the Fitch report, Isaac (2015) attempted to examine the effect of exchange rate risk on banks profitability in Nigeria using data from 1997 -2014. The author studied what appears to look like the impact of macroeconomic variables on bank profitability, besides, the author used only one bank (First Bank Nig Plc) to draw inference for his study. The author had concluded that exchange rate changes had a significant impact on banks performance. It should be stated here that using only one bank to draw such a hasty conclusion is too restrictive and misleading. It would have been more appropriate if the author had studied a cross section of banks in Nigeria to ascertain their level of risk exposure to currency crisis. This is a big gap in the authors' in this research intends to fill.

Methodology

The study will employ the pooled cross sectional panel data analysis to examine the effect of exchange rate movement on the profitability of selected 12 large banks in Nigeria. Eight of the banks selected are national banks while four of the banks included among the banks selected are assumed to be international banks since they are capitalized enough to have operational branches outside Nigeria. The study assumes that national banks have less exposure to international currency risk than international banks. The choice of the foreign currencies chosen for the study was made after a correlation analysis was performed. Like observed by He, Fayman and Casey (2014), British Dollar had a high correlation of 89 per cent with the Euro. This might result to multicollinearity and thus the Euro was dropped from amongst the currencies used in the study. The study adopted the methodology used by He, Fayman and Casey (2014) although with some modifications.

The study begins by assuming that all the banks trade without international currency and hence are not exposed to currency risk. This assumption is to give room for analyzing the specific effect of operational control variables on banks profitability. The estimated model shall be of the form

$$\text{Bankprof}_t = \alpha + \gamma_{\text{con}} \text{-----} (1)$$

Where γ_{con} are the control variables not correlated with currency fluctuation. These variables include asset quality (Caaq), bank size (size), bank divstment (Divst) and contributions of non-performing loans (Contn).

However, it noted that all banks are involved in one form of external transactions or the other, and hence are therefore exposed to currency risk exposure. Model (1) is therefore modified to include selected international currencies such as dollars, pounds and the yen.

$$\text{Bankprof}_t = \alpha + \gamma_{\text{con}} + \lambda_{\text{exp}} \text{-----} (2)$$

Where λ_{exp} are the vectors of the selected international currencies (Dollars, Pounds and Yen).

Using the cross sectional analysis the following model will be estimated,

$$\text{Prof}_t = \alpha + \beta_1 Y_{c(\text{dollar,pounds,yen})} + \delta_2 \lambda_{\text{exp}(\text{caa,q,divst,size,contn})} \text{-----} (3)$$

Where

Caaq = capital adequacy ratio (measured as the ratio of bank capital to total assets)

Divst = banks divestments (measured as the amount of investment in other subsidiaries)

Size = Bank size (measured as the banks total assets and capitalization)

Contn = bank non-performing loans (measured as the ratio of non-performing loans to total loans)

Non-performing loans are financial assets from which banks no longer receive interest payment as scheduled. A high level of non-performing loans erodes customer's confidence on banks and may be tempted customer's to withdraw their deposits in fear of collapse. This action from customers has the tendency to negatively affect bank profitability.

A banks' capital is considered adequate if it is enough to cover the banks operational expenses, satisfy customer's withdrawal needs, and protect depositors against total or partial loss of deposit in event of financial crisis or substantial loss by the banks. A low ratio of capital adequacy will substantially lead to a low bank profit. However, a substantial bank capital does not only serve as a cushion against deposit run-off, but forms the basis for future asset growth.

The rate at which retained earnings grow also determines to a large extent the growth of banks capital and invariably the growth of the banks profit. According to Onoh (2002) if the rate of growth of the retained earnings is low, it could be an indication of poor profitability or poor dividend policy or high dividend payment.

The degree of exchange rate risk exposure is measured as the standard deviation of each of the international currency to the Nigeria naira. This is intended to measure the variability of a firm's value due to uncertain changes in the rate of exchange. The degree of such correlation will be assumed to be the degree to which each banks is affected by exchange rate changes.

Discussion of result

The result of the correlation matrix presented in table 1 indicated that bank size was highly correlated with all the international currencies. Bank size had positive correlation of 0.5388 with the pounds, 0.7060 correlation with the yen and negative correlation of 0.1289 with the dollars.

Commercial banks capital adequacy ratio was observed to have a positive correlation with pounds and the yen, but a negative correlation with the dollars. Banks divestment was observed to have a negative correlation with all the internationally selected currencies. Contribution of non-performing loans was also observed to have a positive correlation with pounds and the yen but a negative correlation with the dollars.

Table 1. Correlation result

	SIZE	CAAQ	ASSQ	DIVST	CONTN	POUNDS	YEN	DOLLARS
SIZE	1.0000							
CAAQ	-7.1622	1.0000						
ASSQ	0.0006	-0.0036	1.0000					
DIVST	0.0003	-0.0271	-0.0469	1.0000				
CONTN	-3.4895	0.0045	0.0208	-0.0291	1.0000			
POUNDS	2.5388	0.0030	0.0005	-0.0014	0.0026	1.0000		
YEN	7.7060	0.0014	0.0043	-0.0033	0.0011	0.0176	1.0000	
DOLLARS	-0.0001	-0.0035	-0.0069	-6.8574	-0.0033	-0.0521	-0.0209	.00000000

Source: computed from Eviews 9.0 regression output

Table 2 presents the result of the regression analysis for currency fluctuation on profitability of selected banks in Nigeria. The aim of this particular analysis was to examine the independent effect of currency fluctuations on the profitability of banks without the endogenous control variables. The British pounds and American dollar both have negative significant effect on bank profitability while the yen was observed to exert a positive influence. Thus, a percentage change in dollar and the pounds will significantly reduce banks profitability by 6 percent and 11 percent respectively. However, the Yen was observed to exert 41 percent increase in banks profitability. It could be reasoned from the analysis that since the Yen is not a highly tradable currency; fluctuations arising from the Yen do not exert a negative influence on commercial banks in Nigeria. It could therefore be inferred

that as the value of the dollar and the pounds weakens in the face of other baskets of currencies, it exerts a negative effect on banks' ability to make profit on their international transactions and by extension, reduces economic activities in Nigeria.

Table 2. Result of regression analysis for currency fluctuation

Dependent Variable: PROF?
 Method: Pooled Least Squares
 Date: 09/15/16 Time: 07:49
 Sample: 2000 2014
 Included observations: 15
 Cross-sections included: 12
 Total pool (balanced) observations: 180

Variable	Coefficient	Std. Error	t-Statistic	Prob.
YEN	0.418819	0.113050	3.704723	0.0000
DOLLARS	-0.064285	0.028326	-2.269469	0.0060
POUNDS	-0.111952	0.019487	-5.744958	0.0000

R-squared 0.539433 Mean dependent var 0.439652
 Adjusted R-squared 0.534229 S.D. dependent var 0.282527

Source. Regression output from Eview 9.0

In table 3 we include other bank's characteristics, bank size, capital adequacy, bank's divestments and non-performing loans. The individual strength of these variables is expected to act as cushions on banks' particularly, when the banks are faced with situations that challenge their profitability. The result revealed that bank size (SIZE) and capital adequacy ratio (CAAQ) were positively associated with bank profitability while bank divestment and the value of non-performing loans (CONTN) were observed to exert a negative effect on bank profitability. Furthermore, capital adequacy ratio and non-performing loans alone we observe to exert positive and negative significance effect on banks' profitability. Intriguingly, banks investment diversification (DIVST) had negative but non-significant effect on banks profitability. It could be inferred from this result that in situations of currency fluctuations, the value of commercial banks divestment were not sufficient enough to cushion the banks against making losses.

Table 3. Result of regression output for bank characteristic variables.

Dependent Variable: PROF?
 Method: Pooled Least Squares
 Date: 09/15/16 Time: 07:46
 Sample: 2000 2014
 Included observations: 15
 Cross-sections included: 12
 Total pool (balanced) observations: 180

Variable	Coefficient	Std. Error	t-Statistic	Prob.
SIZE	0.005728	0.004516	1.268329	0.2064
CAAQ	0.337085	0.095955	3.512943	0.0006
DIVST	-0.691035	0.838022	-0.824602	0.4107
CONTN	-0.345725	0.119644	-2.889616	0.0044
YEN	0.226027	0.111176	2.033055	0.0020
DOLLARS	-0.059219	0.023948	-2.472816	0.0016
POUNDS	-0.064560	0.213923	-1.236704	0.3017

R-squared 0.584714 Mean dependent var 0.439652
 Adjusted R-squared 0.570311 S.D. dependent var 0.282527

Source: Regression output result from Eviews 9.0

Inclusion of the banks characteristic variables into the model revealed some more intriguing fact about the ability of banks to cushion itself against currency fluctuations. The result revealed that although the dollar and the pounds both exerted negative effect on commercial banks profitability, these effects proved significant only with the dollar. A percentage change in dollar and the pounds exerted a 5 percent and 26 percent change in bank profitability respectively. This result revealed a marked difference with the previous result when bank characteristics variables were not included in the model. It could be observed that the effect of the influence of the dollar reduce by 1 percent and the pound also reduced by 5 percent. This is to confirm that the bank characteristic variables were effective in cushioning the banks against currency fluctuations.

The study conclusively observed that banks' divestment were not strong enough to cushion the banks against the vagaries of currency fluctuation in Nigeria. Similarly, non-performing loans also exerted a significant but negative effect on commercial banks profitability. The results deduced from this study were based on balanced panel data obtained from 12 largest commercial banks in Nigeria for a 14 years period (2000-2014).

This study is significant in reminding us that proper management of their credit risks of commercial bank is key to their survival. Long-range planning for improved future performance is also crucial as well as avoidance of problems that put pressure on their Cash Reserve Ratios (CRRs) and profitability.

Overall, warnings by credit rating agencies should be seen as offering opportunity to address critical elements that could affect the health of our banks. Commercial banks in Nigeria are encouraged to increase their divestment as it has the potent ability to act as cushion against period's currency fluctuation. Furthermore, within the period of strong currency fluctuation commercial banks are advised to switch their trading options to the less volatile currency as a measure of hedging against currency risk.

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