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Effects of Economic Openness and Inflation on Commercial Banks' Profitability: Panel Data Evidence from Nigeria, Post-Banking Sector Consolidation (2005-2012).

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Abstract
The paper employs panel data estimation techniques to investigate the effects of economic openness (trade and financial openness) and inflation on commercial banks' profitability in Nigeria. Using panel data for the period 2005 to 2012 on a sample of 14 commercial banks in the country, the empirical analysis based on the random effect model selected on the basis of Hausman test result indicates that the impact of financial openness on commercial banks' profitability was positive and significant while the impact of trade openness was also positive, but statistically insignificant. Inflation and bank size were also observed to have had insignificant impact on banks' profitability in the study period. Further evidence from the analysis is that financial openness and inflation adversely affected commercial banks' profitability in the heat of the global financial crisis (2007-2010), marked by the downward trends in return on asset of most of the banks within the period. These findings suggest *inter alia* that economic openness could enhance the profitability of commercial banks if the banks could take advantage of the opportunities it offers. The paper therefore recommends greater integration of the country's economy with the global market, active participation of Nigerian banks in trade finance and merchant banking, establishment of foreign branches of the commercial banks in other countries particularly in countries with fast growing economies, quality asset management, some restriction in cross-border capital flows and lowering the rate of inflation particular in periods of global financial crisis, etc. to enhance the profitability of the commercial banks.
Keywords: Financial Openness**,** Trade Openness, Inflation, Commercial Banks' Profitability, Panel Data Estimation, Nigeria.

1. Introduction

An open economy interacts with other economies of the world through the channels of trade, finance, information technology and international migration. Economic openness, according to Whitman (1969), is a term used to signify a high degree of interaction with the outside world. This interaction occurs through the channels mentioned above. The degree of openness of an economy determines to a large extent the volume of trade between the country and the rest of the world (Dominte, 2006). It also determines the intensity of flow of capital and information between the country and the outside world, and the rate of international migration.

The effect of economic openness on economic growth has been the subject of intense debate in recent times. While the proponents of neo-liberal economic policies argue that openness is key to rapid economic growth, and that more open economies tend to experience faster growth than the less open economies, the opponents are of the view that economic openness has tended to retard the growth of most less developed countries since they embraced neo-liberal economic policies.

Economic openness has pervasive effect on the growth of a country's economy, as virtually all sectors (fully or partially liberalized and deregulated) are affected by it. The effect on any given sector is either beneficial, detrimental or insignificant, depending on the level of development, or the strength of the sector. This paper investigates the effect of economic openness on the profitability of the banking industry of Nigeria's financial sector, focusing on the commercial banks.

Commercial banks are key players in the money market and by extension, the financial system of an economy. They are seen as engine of growth of all economies in view of their role as mobilizers of funds from the surplus unit to the deficit unit of the economy. They therefore play crucial roles in the financing of economic growth.

Commercial banks perform numerous functions, all targeted toward economic progress and development. The ability of the commercial banks to perform their functions is affected (positively or negatively) by multiplicity of factors, some of which are bank-specific and others, non- bank specific. The bank specific factors include *inter alia* bank liquidity, capital base, bank size, etc., while the non-bank factors affecting the performance of the commercial banks include the macroeconomic and microeconomic factors such as inflation, trade and financial openness, monetary and fiscal policies, demand for bank loans by firms, etc.

The ability of commercial banks to play their ascribed roles in the process of nation building depends to a very large extent on their profitability, i.e., how well they are able to generate impressive returns on their assets, capital, shareholders' equity investment, etc. A commercial bank whose profit is dwindling or declining may eventually become distressed, and an economy with many of such banks is bound to retrogress, whereas as observed by Athanasoglou, Brissimis and Delis(2005) cited in Alper and Anbar (2011), an economy with profitable banking sector is better able to withstand negative shocks and contribute to the stability of the financial system, and hence, to economic growth and development.

Though several empirical researches have been conducted to investigate the effect of various economic variables on commercial banks' profitability or performance, none have addressed the effect of economic openness on commercial banks' profitability in Nigeria. This paper represents the first attempt at investigating the effect of economic openness on commercial banks profitability in Nigeria (using the methodology of Panel Data Regression), in the period following the consolidation exercise marked principally by the recapitalization of the banks which were directed to beef up their capital base to minimum of ₦25 billion from minimum of ₦2 billion. The consolidation exercise which started in June 2004 ended in December 2005. At the end of the exercise, the country had 25 commercial banks, as against 89 pre-consolidation (Donwa and Odia, 2011).

2. Literature Review

2.1 Economic Openness and Commercial Banks' Profitability

i. Financial Openness and Commercial Banks' Profitability

The multilateral organizations such as the World Bank, International Monetary Fund (IMF), the World Trade Organization (WTO), etc. advocate opening up of the financial system of developing countries to pave way for entry of new competitors (foreign financial institutions) to bring about lower credit rates and cost and strengthen the countries' financial system (Penido de Freitas and Prates, 2000; Stichele, 2004). This is particularly true in economies where there is credit crunch, and a large number of the commercial banks have to borrow from the central banks to boost their lending capacities. The rates at which they lend therefore depends on the bank rate, and in most cases where the bank rate is high, the lending rate will also be high. This is where foreign financial institutions which are independent on loans from the central bank of the countries in which they operate, come in. Since they are largely funded by the parent banks based in the highly industrialized countries, they are able to lend at rates lower than that of their local counterparts. Though this may be favourable to industrialists and other borrowers, as well as to the entire financial system, the effect on interest income, and hence, the profitability of the domestic banks could be adverse. Liu (2005) observes that the liberalization of trade in financial services under the WTO indeed strongly promotes bank loans to developing economies, though not evenly, depending on country characteristics.

It has been predicted that under conditions of full openness, "financial sectors in developing countries which are relatively capital poor by global standards should be swamped by foreign capital" (Pepinsky 2009, p.1). However, strong banks in developing countries could take advantage of financial openness (or financial globalization) to enhance their profitability by establishing offices or branches in other countries, particularly the fast growing emerging market economies to provide innovative financial products and services where they are needed.

Financial openness implies capital account liberalization, and full liberalization of the financial sector connotes free movement of capital in and out of an economy without any restrictions. This suggests among others that a nation's financial system is opened up to international competition when it is fully opened or liberalized. For an ill-prepared economy such as those of the underdeveloped or developing world, financial liberalization could have adverse effect on the financial sector and hence, on economic growth (Aigheyisi, 2003). The adverse effect of full scale liberalization of the capital account occurs through several channels or mechanisms. One of such channels is the channel of capital flight which could adversely affect the availability of investible funds, driving up lending interest rates or cost of capital, as the demand for capital exceeds its supply, creating disincentives for investors to borrow and reducing commercial banks profit as their net interest margins (NIM, calculated as the difference between interest income and interest expenses such as those paid on deposits divided by interest bearing asset, and multiplied by 100% to express the NIM in percentage), which is also a measure of profitability, nosedive. Another channel through which financial liberalization affect the financial sector is through direct investment of foreign banks headquartered in developed countries, in a developing or emerging market economy. The parent bank based in the foreign (developed) country is responsible for a large percentage of the funding/financing of the operations of its branch(es) or subsidiaries in the developing world. According to Classens et al, 2001; Clarke et al, 2001, as cited in Pepinsky, 2009, the foreign banks operating in developing countries are able to outcompete their domestic counterparts by offering lower interest rate on loans, higher

deposit interest rate to depositors thereby mobilizing more fund from large depositors and earning more profits than their domestic counterparts, whose profit levels are more likely to decline. They are also able to outcompete their local counterparts and expand their customer deposits by introducing attractive new banking products which the domestic banks are unable to develop. A further mechanism is equity participation (through foreign portfolio investment, FPI) of foreign investors in local firms (banks and non-banks) which reduces their demand for commercial banks' loans and advances, consequently shrinking the banks interest income.

Penido de Freitas and Prates (2000) have shown that the impact of inflows of foreign investment (direct and portfolio) on the financial markets of Latin American economies made possible by financial liberalization *varies according to the degrees of financial openness, the specific institutional characteristics of each national financial system, and the different macroeconomic management option with regard to external capital flows*. The researchers observe that as a result of financial liberalization, foreign firms assume growing importance in the Latin- American economies of Argentina, Brazil and Mexico, as the countries adopt liberalization measures to capitalize their banking systems, enhance competition among banks to seek new sources of profit and to strengthen their positions in globalized markets. The consequence of this measure of financial liberalization has not been too pleasant. For example, in Argentina, beginning from 1997, foreign financial institutions embarked on series of total or partial acquisition of local banks, and this resulted in a situation where, with the exception of the country's two big public banks (the Banco de la Nacion and the Banco de la Provincia de Buenos Aires), all the main banks came under the control of foreigners, and the three biggest banks controlled by non-residents have continued to expand their market share, while the local banks tend to have lagged behind.

Claessens, Demirguc-Kunt and Huizinga (2001) investigate how net interest margins, overhead, taxes paid and profitability differ between foreign and domestic banks using 7900 bank observations from 80 countries in the period 1988-1995 and find that foreign banks have higher profitability than domestic banks in developing countries, while the opposite hold for developed countries.

Bayraktar and Wang (2004) applying panel data regression in a study to investigate the impact of foreign bank entry on the performance of domestic banks and how the relationship is affected by the sequence of financial liberalization in a sample of 30 developed and developing countries in the period from 1995 to 2002 find that foreign bank entry significantly improves domestic bank competitiveness in countries which liberalized their stock market first, and in these countries, profit and cost indicators are negatively related to the share of foreign banks. The study also finds that countries which liberalized their capital account first seem to benefit less from foreign bank entry.

The outcome of empirical research by Abdelaziz, Mouldi and Helmi (2011) to investigate the effect of financial liberalization on banking profitability in Tunisia using panel data analysis of 9 Tunisian banks over the period 1980 to 2009 reveals, on the basis of random effect or error component model selected using the Hausman test, a negative and significant relationship between financial liberalization and bank profitability in the country.

Andries and Capraru (2013) analyze the impact of financial liberalization and reforms on bank performance in 17 countries from Central and Eastern Europe (CEE) for the period 2004 to 2008 using a two-stage empirical model that involves estimating bank performance in the first stage and assessing its determinants in the next stage, and find that countries with higher level of liberalization and openness are able to increase cost efficiency and eventually to offer cheaper services to clients.

ii. Trade Openness and Commercial Banks' Profitability

The extent to which trade openness affects the profitability of commercial banks depends on the degree of openness of the economy, the volume of trade between the country and other countries, the extent to which international traders (importers and exporters) depend on, or make use of loan facilities from the commercial banks for trade finance, and the extent to which the commercial banks engage in merchant banking and trade finanace, amongst others. Not much research has been conducted to investigate the effect of trade openness on commercial banks' profitability, and consequently the literature on the effect of trade openness on the profitability of commercial bank is still very lean. It is hoped that this research will contribute significantly to expanding the extant literature. However, in a study to investigate the role of openness in bank efficiency with respect to income levels of selected African countries, Asongu (2012), using the fixed effect panel data analysis of 29 low and middle income countries in the continent finds that trade and financial openness breeds less efficiency in low income countries. While financial openness has same effect in the middle income countries, the effect of trade openness on bank efficiency in the (middle income) countries is statistically insignificant.

2.2 Inflation and Commercial Banks' Profitability

The effect of inflation on commercial bank profitability is an issue on which conclusion cannot be drawn hastily.

Empirical investigations into the relationship between the variables have been inconclusive as the findings have been mixed. While some investigations observe positive relationship between the variables, others observe negative relationship, and yet others observe no significant relationship.

Empirical work by Tan and Floros (2012) to investigate the effect of inflation on bank profitability in China using a panel of 101 banks comprising 5 state-owned banks, 12 joint stock commercial banks and 84 city commercial banks, and employing the two-steps generalized method of moments (GMM) reveals that in the period 2003 to 2009 inflation was positively related to bank profitability and cost efficiency. The study further finds a positive relationship between inflation and banking sector development as well as stock market development. Similarly, in a study to investigate the factors explaining low profitability of Chinese banks in the period 1997-2004, Garcia-Herrero, Gavila and Santabarbara (2009) find that inflation positively affects banks' profitability measured as pre-provision profit over assets and pre-tax return on asset (ROA).

Empirical research by Flamini, McDonald and Schumacher (2009) employs the two-step Generalised Method of Moment to investigate the determinants of commercial bank profitability in sub-Saharan Africa (SSA) in mid 2000s using a sample of 389 banks in 41 SSA countries and finds amongst others that inflation has a positive effect on banks profit, suggesting that *banks forecast future changes in inflation correctly and promptly enough to adjust interest rates and margins*. However, Munyambonera (2011) investigates some of the key determinants of commercial banks profitability in sub-Saharan Africa using an unbalance panel data set of 224 commercial banks from 42 countries for the period 1999 to 2006, and employing the random effect estimator. The analysis shows a negative, but statistically insignificant relationship between inflation and banks profitability.

Naceur (2003) investigates the determinants of Tunisian banking industry profitability in the period 1980 to 2000 using the fixed effect panel data regression, and finds that inflation has no impact on banks interest margin and profitability. Similarly, Alper and Anbar (2011) examine the bank-specific and macroeconomic determinants of profitability of banks in Turkey in the period 2002 to 2010 using fixed effect panel data model selected based on the Hausman test on a balanced panel dataset of ten(10) commercial banks, and find *inter alia* that inflation (measured as percentage change in consumer price index) exhibits statistically insignificant effect on bank profitability measured as return on asset (ROA) and return on equity (ROE). However, Abdelaziz, Mouldi and Helmi (2011) find a significant negative effect of inflation on bank profitability in the country (Tunisia) from the random effect panel data analysis of a sample of nine Tunisian banks in the period 1980 to 2009.

Santoni (1986) observes that unanticipated inflation which is the difference between realized inflation and anticipated inflation) causes the real value of a bank to fall, and because banks are typically net creditors in nominal instruments, bank owners lose wealth when there is unanticipated inflation. He also observes that increase in anticipated inflation affects banks in a way that is quantitatively similar to unanticipated inflation because both represent a misguess about inflation.

Boyd and Champ (2003) investigate the effect of inflation on financial market performance, and find that inflation is negatively associated with banking industry size, real returns on financial assets and bank profitability. It is also observed that that a positive relationship exists between volatility of asset return and inflation.

Syafri (2012) investigates the factors affecting bank profitability in Indonesia in the period 2002 to 2011 using fixed effect panel data regression model. The empirical analysis reveals that inflation has negative effect on banks' profitability, measured as ROA.

Using fixed effect panel data regression model selected on the basis of Hausman test, and adopting ROA and net interest margin as measures of profitability, Yilmaz (2013) analyses the determinants of bank profitability in emerging markets with unbalanced panel data on 195 banks in the period 2005 to 2010. The analysis reveals that for both measures of profitability, inflation impacts negatively and significantly on commercial banks profitability.

In a study to examine the profitability indicators of 22 public and private commercial banks of Pakistan in the period 2006-2009, Ali, Akhtar and Ahmed (2011) employ the least squares methodology and find that increase in consumer price index (CPI) negatively and significantly affects profitability (or ROA) of commercial banks in the country. Similarly, in a study to investigate the influence of bank-specific and macroeconomic factors on profitability of commercial banks in Pakistan in the period 2007 to 2011, Bilal et al (2013), find that for a sample of 25 commercial banks selected out of a population of 38 commercial banks in Pakistan as at 2011, inflation has negative significant effect on ROA. However, Gul, Irshad and Zaman (2011) also investigates the impact of assets, loans, equity, deposits, economic growth, inflation and market capitalization on commercial banks major profitability indicators (such as ROA, return on equity (ROE), return on capital employed (ROCE) and net interest margin (NIM) separately) for the Pakistani economy using the pooled ordinary least squares (OLS) panel data estimation technique for a sample of 15 commercial banks in the period 2005 to 2009, and finds amongst

others, that inflation positively impacts commercial banks profitability, and this impact is significant at the 5% level. However, considering the limitations of the pooled OLS panel data estimator, this finding cannot be relied upon for policy.

For commercial banks in the Malaysian financial sector, Sufian (2009) finds that higher inflation rate has a positive impact on Malaysian banks' profitability in the period from 2000 to 2004. It is also observed that economic growth has a negative effect on Malaysian banks' profitability. Furthermore, the empirical findings suggest that Malaysian banks with higher credit risks and higher loan concentration exhibit lower profitability level, while commercial banks with higher level of capitalization, higher proportion of income from non-interest sources, and high operational expenses tend to exhibit higher profitability level. Similarly, empirical evidence from the work of Sufian (2010) also indicates that commercial banks in the Republic of Korea with high capitalization levels tend to have higher levels of profitability. It also reveals that inflation has a pro-cyclical impact on banks' profitability in the country. The panel fixed effect regression results indicate that inflation has significantly positive impact on commercial banks profitability measured as ROA.

Vong and Chan (2009) examine the impact of bank characteristics as well as macroeconomic and financial structure variables on the performance of the banking industry in Macao using the GLS estimation technique for a regression based on fixed effect estimation by pooling bank data across five(5) banks in the country in the period 1993-2007. The analysis indicates amongst other, that inflation has significant positive effect on bank profitability (measured as ROA) in the country.

In a research to evaluate the impacts of specific internal and external factors on bank profitability for a sample of 86 commercial banks in the new EU member states (Bulgaria, Hungary, Lativa, Lithuania, Poland and Romania) in the period 2003-2011, Roman and Tomuleasa (n.d.), employing panel data find analysis finds that inflation has significant positive impact on commercial banks profitability measured as return on average equity (ROAE).

Aremu, Ekpo and Mustapha (2013) employ the method of cointegration and error correction modeling to investigate the determinants of banks' profitability in Nigeria using First Bank of Nigeria Plc as the case study. Evidence from the study indicates that inflation has insignificant negative effect on the profitability of the bank. However, giving that the study only focuses on a single bank, this finding cannot be generalized for the entire banking industry of Nigeria.

Trujillo-Ponce (n.d.) investigates the determinants of profitability of banks in Spain in the period from 1999 to 2009 by applying the system GMM estimator to a large number of banks in the country. The empirical results indicate amongst others, that inflation has significant positive effect on bank profitability measured as ROA, and insignificant positive effect on profitability measured as ROE, in the country.

3. Variable Description, Model Specification and Estimation Methodology

3.1 Variable Description/Definition and Sources of Data

1. Profitability.

The measure of profitability adopted for this research is the ROA defined as:

$$Return\ on\ Asset\ (ROA) = \frac{\text{Profit after Tax (PAT)}}{\text{Total Assets}} * 100\%$$

Data used for the computation of the ROA of the commercial banks examined in this work were obtained from their audited financial statements for various years.

2. Trade openness (TOPN)

This is defined as total trade (export plus import) relative to gross domestic product (GDP), or total trade -to-GDP ratio.

$$Trade\ Openness\ (TOPN) = \frac{\text{Export} + \text{Import}}{\text{GDP}} * 100\%$$

Data on export, import and GDP were obtained from the Central Bank of Nigeria Statistical Bulletin 2012.

3. Financial Openness (FOPN)

Following Lane and Milesi-Ferretti (2001, 2006), the *outcome measure* of financial openness is defined as:

$$Financial\ Openness\ (FOPN) = \frac{\text{Foreign Assets} + \text{Foreign Liabilities}}{\text{GDP}}$$

Data on foreign assets and foreign liabilities were obtained from the Central Bank of Nigeria Statistical Bulletin, 2012.

4. Inflation.

This is measured as the percentage change in the consumer price index (CPI). Data for this variable were obtained the Central Bank of Nigeria Statistical Bulletin, 2012

3.2 Model Specification and Estimation Methodology

The main objective of this study is to investigate the effect of economic openness (i.e. trade and financial openness) and inflation on the profitability of commercial banks in Nigeria in the period 2007 to 2010 for a sample of 14 (fourteen) commercial banks (see the appendix for a list of the commercial banks included in the sample), employing the methodology of panel data regressions. Three panel data models (pooled OLS or constant coefficient model, fixed effect model and random effect or error component model) will be estimated for the investigation, and the outcome of each method of estimation shall be compared to see if there is any significant difference in the estimated coefficients. Following Gujarati and Porter (2009), the panel data models to be estimated are specified as:

$$ROA_{it} = \beta_1 + \beta_2 INF_{it} + \beta_3 FOPN_{it} + \beta_4 TOPN_{it} + \beta_5 BNKSZ + \mu_{it} \ldots\ldots\ldots\ldots\ldots\ldots 1$$

$$ROA_{it} = \alpha_{1i} + \alpha_2 INF_{it} + \alpha_3 FOPN_{it} + \alpha_4 TOPN_{it} + \alpha_5 BNKSZ + \mu_{it} \ldots\ldots\ldots\ldots\ldots\ldots 2$$

$$ROA_{it} = \delta_1 + \delta_2 INF_{it} + \delta_3 FOPN_{it} + \delta_4 TOPN_{it} + \delta_5 BNKSZ + \varepsilon_i + \mu_{it} \ldots\ldots\ldots\ldots\ldots 3$$

$$ROA_{it} = \Pi_1 + \Pi_2 INF_{it} + \Pi_3 FOPN_{it} + \Pi_4 TOPN_{it} + \Pi_5 BNKSZ + w_{it} \ldots\ldots\ldots\ldots\ldots 3^*$$

$$w_{it} = \varepsilon_i + \mu_{it}$$

$$i = 1 \text{ to } 14$$

$$t = 1 \text{ to } 8.$$

The variables are as previously defined. Bank size (BNKSZ) is included as a control variable. Following Laeven, Ratnovski and Tong (2014), we measure bank size as the logarithm of bank's annual total assets. The *a priori* expectations are (δ_2, β_2, α_2, Π_2) <0, (β_3, α_3, δ_3, Π_3) >0, and (β_4, α_4, δ_4, Π_4) >0, (β_5, α_5, δ_5, Π_5) > 0,.

Equation 1 is the pooled OLS model, also referred to as the constant coefficients model, Equation 2 is the fixed effects (regression) model (FEM), and Equation 3(or 3*) is the random effect (regression) model (REM), also referred to as the error components model (ECM), which has a composite error term w_{it} consisting of two components: ε_i which is the cross-section or individual-specific error term and μ_{it} which is the combined time series and cross-section error component also referred to as the *idiosyncratic term* because it varies over cross-section as well as time (Gujarati and Porter, 2009). The features of the various panel data regression models as well as their strengths (advantages) and weaknesses (disadvantages) are well discussed in standard Econometrics texts such as Greene (2003), Verbeek (2004), Baltagi (2005), Gujarati and Porter (2009), etc. Annual time series data covering the period from 2005 to 2012 for a cross section of fourteen commercial banks will be used to estimate the specified models with the aid of EVIEWS 7 econometric software package. The model is estimated using logs of the variables

4. Presentation and Discussion of Results

a. Presentation of Results

The results of estimation of Equations 1, 2, and 3 (3*) are presented in the Table 1.

Table 1. Panel Data Estimation Results (2005-2012)

Dependent Variable is ROA			
Regressors	Pooled OLS	Fixed Effect	Random Effect
C	-3.9167 (-0.7915)	-3.2131 (-0.6786)	-3.7503 (-0.7960)
Log (TOPEN)	1.1998 (0.9878)	1.1974 (1.0232)	1.1871 (1.0254)
Log (FOPEN)	0.6609 (1.9577)	0.7057 (2.1358)	0.6711 (2.0811)
Log (INF)	0.1660 (0.4420)	0.0978 (0.2672)	0.1540 (0.4294)
BNKSZ	0.0018 (0.0681)	-0.0269 (-0.8057)	-0.0029 (-0.1078)
Diagnostic statistics			
R^2	0.052	0.2654	0.0547
F-statistic	1.247	1.6583	1.3162

T-ratios are in parenthesis under the estimated parameters, **Source**: Authors' estimations using Eviews 7.

Table 2. Hausman Test for Selection of Preferred Model

Correlated Random Effects - Hausman Test
Equation: Untitled
Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	8.286079	4	0.0816

Source: Authors' estimations using Eviews 7

b. Discussion of Results, Implications and Policy Recommendations

The pooled OLS result shows that all the variables are positively related to commercial banks' profitability, though the sign on inflation variable does not conform to *a priori* expectation. The result indicates that only financial openness impacts significantly on commercial banks' profitability. Considering the limitations of pooled OLS panel data regression, we shall not give much attention to these estimates. The signs on the coefficients of the variables in the fixed effect and the random effect models are similar. However, the Hausman test results indicate that the more appropriate model is the random effect model, as the null hypothesis that random effect model is more appropriate is accepted at the 5% level of significance. Thus the estimated random effect model shall form the basis of our empirical analysis.

The signs on the coefficients of TOPEN and FOPEN (in the REM) conform to *a priori* expectations, while those on INF and BNKSZ do not. The results indicate that trade openness and financial openness impact positively on commercial banks' profitability, though the impact of trade openness is insignificant at the 5% level. This suggests that commercial banks in Nigeria (particularly the indigenous banks) are not yet fully positioned to tap the benefits of economic openness (globalization), particularly trade openness, and do not yet actively participate in merchant banking and trade finance. It also points to the fact that Nigeria's volume of trade is quite low (particularly, trade in non-oil commodities). The positive and significant impact of financial openness on banks' profitability could be attributed to expansion in the scope of operations of some of the major commercial banks which now have branches in other countries, as well as the introduction of financial services which facilitate international transfers of funds or capital. The impacts of inflation and bank size on commercial banks' profitability in Nigeria in the study period have been insignificant. The insignificant impact of bank size is suggestive of weak assets management.

We also examine the effects of economic openness and inflation on commercial banks' profitability in Nigeria in the heat of the global financial crisis which started in the summer of 2007 and got intensified from September 2008 (Jones, 2009). The result is presented in Table A2 in the Appendix. The results indicate that inflation and financial openness adversely affected commercial banks profitability in the heat of the global financial crisis (2007-2010). As a matter of fact, the returns on asset of most of the banks trended downwards within the period (See Figure A1 in the Appendix). This is not unexpected considering the level of development of Nigeria's financial sector and the linkage of the economy to the developed economies which were strongly hit by the crisis.

5. Conclusion and Recommendations

In this paper an attempt has been made to investigate the impact of economic openness (trade and financial openness), and inflation on commercial banks' profitability in Nigeria in the post-consolidation period (2005-2012), using panel data regression. The impacts of the variables on commercial banks' profitability in Nigeria in the heat of the global financial crisis (2007-2010) were also investigated. The empirical analysis indicates that trade and financial openness impact positively on commercial banks' profitability, though the impact of trade openness was statistically insignificant. This was attributed to the low volume of trade (particularly in non-oil commodities) between Nigeria and the rest of the world, and the low level of participation of many of the local or indigenous banks in trade finance and merchant. The analysis also finds that inflation and bank size had insignificant impacts on bank's profitability in the study period. It further indicates that the impact of financial openness and inflation on commercial banks' profitability in the heat of the global financial crisis (2007-2010) was significantly negative, while the impact of trade openness was insignificant. Based on these findings, we conclude that economic openness could boost commercial banks profitability if the banks are well positioned to take advantage of the benefits it offers. In the light of the totality of the findings, the following are recommended for policy consideration:

I. Greater integration of Nigeria's economy with the global market. The government of the country should take conscious steps towards expanding her trade in goods and services, and this entails diversifying her export commodities as well as the destination (market) for her exports. This way, commercial banks in the country which have been recapitalized could then have outlets to channel (excess) funds, such as trade finance and embrace merchant banking, to boost their profitability.

II. Measures to insulate Nigeria's economy against financial crisis in the developed countries which could affect economic activities in the country. These include consciously striving to reduce dependence on the developed countries, and strengthening inter-relationships with other countries particularly those at same level of development. Considering that financial openness and inflation adversely affect commercial banks profitability in period of global financial crisis, there is need to impose restrictions on cross border flow of capital, and also to make use of the relevant macroeconomic management tools to control inflation in periods of crisis to mitigate their effects on the profitability of commercial banks.

III. Establishment of offshore offices or branches (of the indigenous commercial banks) in other countries particularly the fast growing economies to expand their operations and increase their capacity to make more profits.

IV. Quality asset management for enhanced profitability by the commercial banks.

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APPENDIX

Table A1. Banks included in the sample for the regressions

1. Guaranty Trust Bank Plc (GTB)	8. First Bank of Nigeria
2. Skye Bank Plc	9. Diamond Bank Plc
3. First City Monument Bank Plc (FCMB)	10. Stanbic IBTC Plc
4. Ecobank Nigeria Plc	11. Union Bank of Nigeria Plc
5. United Bank for Africa Plc (UBA)	12. Access Bank Plc
6. Unity Bank Plc	13. Fidelity Bank Plc
7. Zenith Bank Nigeria Plc	14. Wema Bank Plc

Source: Authors' compilation.

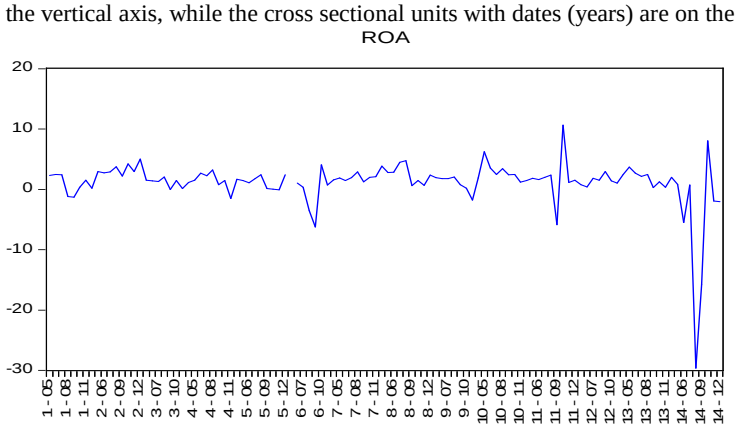
Table A2. Panel Data Estimation Results (2007-2010)

Dependent Variable is ROA			
Regressors	Pooled OLS	Fixed Effect	Random Effect
C	22.61878 (1.405221)	22.61878 (1.505578)	22.61878 (1.504724)
INF	-0.611062 (-1.873717)	-0.611062 (-2.007531)	-0.611062 (-2.007531)
FOPN	-9.633509 (-2.308785)	-9.633509 (-2.473671)	-9.633509 (-2.473671)
TOPN	27.13773 (1.091692)	27.13773 (1.169657)	27.13773 (1.169657)
Diagnostic statistics			
R^2	0.095048	0.408751	0.107596
F-statistic	1.820534	1.685132	2.089853

Source: Authors' estimation using EVIEWS 7.

Figure A1. Trends in ROA of the included commercial banks (2005-2012).

[ROA (%) is on the vertical axis, while the cross sectional units with dates (years) are on the horizontal axis)



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