

## CROSS BORDER BANKING AND BANK PERFORMANCE: THE NIGERIA CASE

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### Abstract

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*Considering that about sixty-four percent of the current fourteen deposit money banks quoted in the Nigeria Stock Exchange are into cross-border banking, there is need to evaluate their performances vis-à-vis their domestic counterparts. The unresolved empirical evidence as to whether or not the Nigerian cross-border banks are more profitable than the local banks, as well as the extent to which cross border bank explains the variation in bank profitability, liquidity and stock performance – formed the core motivations behind this study. The census method was employed by sampling the entire fourteen (14) quoted deposit money banks as at year ended 2016. Secondary data was used, and this was extracted from the annual financial statements of the banks for a period of sixteen (16) year period (2001-2016). The study evaluated the banks' performances using three (3) performance indicator metrics – profitability, liquidity and stock price. The study employed the use of descriptive statistics, correlation matrix, multivariate (panel regression) and paired sample t-test for the data analyses. Overall, our results only showed an improvement in the post-CB eras of liquidity though further tests did not show any significant difference in liquidity performance. Thus, as far as the comparison of the performance of the Nigerian CB banks is concerned - either with their domestic counterparts or before and after they engaged in cross-border banking, it can be concluded that one of the performance indices employed in this study (profitability) improved in absolute terms in favour of CB banks as well as on the post cross-border era. The study recommends, among others, that the management of cross-border Nigerian banks should sustain their presence in foreign countries where they are more profitable in order to maximize their risk diversification potentials and the overall performance of the bank.*

**Keywords:** Cross-border, Banks, Nigeria Stock Exchange, Liquidity, Profitability and shares.

### Introduction

The rapid growth of the Pan African Banks (PAB) (that is large conglomerate financial institution of Africa origin with extensions and significant presence across the African continent) in Africa over the last two decades has triggered off certain innovative strategy in the banking industry amongst which is the cross border banking (CBB). Literatures have assigned meaning and titles to the CBB operational usage as it suits them- Reiche (2016) sees it as a consequence of globalization, Twarowska and Kakol (2013) agrees it is a (business) strategy, while Drogendijk and Hadjikhani (2008); Massand and Gopalakrishna (2016) sees it as the internationalization of banks. Notwithstanding its contextual usage and nomenclature, it is a welcome development with antecedent benefits and where well placed, it strengthens bank's performance (Alade 2014).

Performance includes a change in the level of an activity progressively and otherwise. It is an assessment of the use of an organisation's resources, it relates to the manner finance, material and human resources available to an organization are judiciously used to achieve the corporate objective.

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The objective of banks includes amongst others increase in the base of: profitability, liquidity and share maximization (coincidentally, these are performance variables) and these are opportunities that the CBB do present as in the Nigeria case.

In Nigeria, CBB era seemed to have been triggered between July 2004 and December 2005 when the Central Bank of Nigeria (CBN) through the then Governor, Soludo issued a policy on the capitalization of banks. The policy raised the minimum capitalization of Nigerian banks from two billion (N2,000,000,000) to twenty-five billion Naira (N25,000,000,000) (Achimugu, Yunusa & Samson, 2015; Ajayi, 2014; Beck, Fuchs, Singer & Witte, 2014). Agu (2012) opined that this action put so much unplanned money into the coffers of banks that they had to go across the borders of Nigeria for utilization of the N25,000,000,000.

At the instance of this Increase in the capital base of banks (or triggered by the efforts to raise the needed capital) were all forms of business re-organization, ranging from acquisitions, mergers to absorptions which culminated in the emergence of twenty-four (24) and afterwards eighteen (18) banks out of the then eighty-nine (89). This number was to be further reduced by more stringent policies implemented by the Central Bank (the single treasury account) owing to the ongoing recession in the Nigerian economy. To survive the reduced government patronage and economic recession, many of these mega banks look to cross border opportunities to survive and grow. Thus, the bigger they got, the greater their appetite for international expansion – particularly within the West African sub-region. Many Nigerian banks (ten quoted money deposit banks, as at 2017) have solid geographic footprints on the continent thereby becoming economically significant beyond their home countries and jurisdictions (Ajayi, 2014; Beck, Fuchs, Singer & Witte, 2014).

This as it may, has had effect on such bank's performance however, it needs to be empirically substantiated. Therefore, for the Africa banks going CBB, will the expected benefits turn out to be a mirage as was the experience of banks from some developed countries?

The work of Beck et al, (2014) give credence to the assertion that Nigerian banks have made great strides in entries into foreign countries, but did not provide evidence of the effect of such entries on the overall performance of these banks; although it tends to point to the fact that such effects differ based on country specifics and timing. Also, the work of Hasan, Lozano-Viva and Pastor (2000) which aimed to determine the relative difference in performance across banks in Finland in terms of full national banks and those that go cross-border did not produce the needed definitive evidence that the fantastic benefits as show-cased theoretically were actually achieved in practical terms. Though there are very little works on the influence of cross-border banking on bank's share value, studies by Boateng, Qian and Tianlel (2008); Lin, Lin and Wang (2016) suggest that share prices are facilitated by cross border activities. On the other hand, De Haas (2014) suggests that stock performance of stand-alone domestic banks may not be out-performed by their counterparts who go international. Therefore, there is the need to provide empirical evidence to substantiate any given stand.

For the Nigeria situation, there is the dearth of empirical studies on the performance outcomes, particularly profitability of cross-border banking (CBB) operations of the banks. This gaps motivates the study and it seeks to provide empirical evidence. The study therefore investigated whether or not CBB has effect on the profitability, liquidity and share price performances of quoted deposit money

banks in Nigeria.

The rest of the paper is structured into four major sections. The next section presents a review of the literature. The methodological approach of the study is laid out in section III. Section IV presents and discusses the results from the empirical analysis. The conclusion and recommendations are contained in section V.

## Literature

### *Concept of performance*

Financial performance can also be described as an increase/growth level in profit that is, the ability of a business entity to earn a reasonable amount of profit and maximize it sustainably. According to Pandey, 2008; Osamwonyi and Ogbeide, 2015, profit maximization causes the efficient allocation of resources under competitive market conditions and it is considered as the most appropriate measure of performance. It focuses on how an entity has been able to utilize its capital to earn returns within a given time frame. It also includes liquidity growth potentials and solvency of such entity.

In assessing banks financial performance, Kumbirai and Webb (2009) opines that the Accounting approach which employs financial ratios and the econometrics technique can be used. The other variants that tend to see ratios as financial performance measure believes that the main source of data for determining financial performance is the financial statements, the product of accounting. It consists of the statement of financial position which shows the assets, liabilities and equities of a business, the income statement that records the revenues, expenses and profits in a particular period, the cash flow statement which exhibits the sources and uses of cash in a period, and the statement of changes in the owners' equity that represents the changes in owner's wealth. Financial performance is commonly reflected in the calculation of financial ratios that show the link between numbers in the financial statements. The financial ratios may include the computation of the profitability, efficiency, liquidity, gearing, and investment of a particular firm.

According to Atrill, Mclancy, Harvey and Jenner (2009), the ratios that may be utilized (as proxies) to calculate a company's profitability are the return on assets (ROA), return on equity (ROE) and return on investments (ROI). These ratios express the success of a firm in generating profits or returns from the resources owned. In contrast, the market-based measure is believed to be more objective because it relies on market responses to particular decision made by a firm (Griffin & Mahon 1997). The choice of whether to use accounting or market-based calculations for measuring financial performance depends upon the specific aims of the research. This is affirmed by the literature of Adebayo and Olalekan, (2012) which reveals that the use of the accounting ratios is high as compared to other approaches but it all depends on the exact motive that drives the research.

The need to evaluate performance as it relates to CBB cannot be over emphasized. The guess is that if CBB should be embarked upon then, there should be a justification for it in terms of profitability, liquidity and share price performance. Therefore, improving on the performance is amongst the primary motive of CBB and this will be evaluated in line with several earlier mentioned ratios.

1. Profitability: this has been one of the foremost concerns for banks going CBB. This usually is measured with any of the below performance indicators and ratios such as -
  - i. Return on assets (ROA): this shows how banks have corporately utilized the assets of the bank in

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the profiting of the organization. The higher the bank ROA, the better. It relates the returns earned by the bank to other similar banks within the industry or sector. The profitability measure of ROA is considered a subject of disagreement among scholars in determining the numerator of equation. The return on assets is expressed in percentage form, it could either be: calculated as net income before securities gain and losses divided by total asset:

Return on assets =

a. 
$$\frac{\text{Net income before securities gain and Losses}}{\text{Total assets}} \times 100$$

Or,

b. 
$$\frac{\text{Profit after tax}}{\text{Total assets}} \times 100: \text{ (Atrill, McLaney, Harvey, \& Jenner, 2009)}$$

c. Net income reported for a period divided by total assets (Gitman & Zutter, 2012; Ehrhardt & Brigham, 2011; Ross, Westerfield, Jaffe & Jordan, 2011); in contrast,

d. Others use Earnings Before Interest and Taxes (EBIT) divided by total assets (Lindow, 2013) but this study chose that by Atrill, et.al, (2009).

ii. Return on equity (ROE): this shows and measures the profit generated by management from funds entrusted to them by absentee owners (shareholders), it measures the return earned on the stockholders investment. Malm and Roslund, (2013) states that it indicates whether a firm is able to find profitable investment opportunities, and this is of great importance to banks if they must remain in a competitive state. The simplest way to calculate ROE is net income reported for a period divided by shareholders equity (Gitman & Zutter, 2012; Ehrhardt & Brigham, 2011; Ross et al., 2011). Though others use EBIT divided by shareholders equity (Lindow, 2013)

2. Liquidity: this is often used to analyse the bank's ability to pay up its current obligation. Therefore, where a high liquidity is in place, such bank will be able to meet its short term obligation and this implies a comfortable margin of safety. Where a bank goes Cross Border (CB), it has been said that such usually impacts on the liquidity position of the bank. And that there exists a positive relationship between CBB and liquidity. This of course improves on financial stability and reduces liquidity risks (Adam, 2014; Hills & Hoggarth, 2013; Lukonga & Chung, 2010). A proxy of this includes current ratio and solvency risk.

i. Current ratio: the current ratio examines how a bank can meet its current obligation. A minimum of 2:1 is often suggested that is, an organization's current asset should be able to cover its short term (current) liabilities minimum twice over.

ii. Solvency risk: this is the ability of a bank to meet up with its long term obligations (Yesilyurt, 2012 in Chukwuka, 2016). It is also known as capital adequacy ratio (CAR) and every bank is expected to meet up with the set limit by the CBN. A situation of CBB will ensure that one of its objective's which is risk diversification is attained. This as well gives strength and soundness to any bank and of course, assures confidence on the bank from the part of her stalk holders which ultimately, translates as a means to maximizing shareholders wealth.

3. Stock: stock implies part ownership while share is a unit, a subset of a stock. Share price is the present estimation of future streams of income of an organization. Some of its proxies are:

i. Stock returns/Dividend per Share (DPS): this relates the dividend declared and paid per share to the ordinary shares

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ii. Market price per Share (MPS): market price per share also known as fair market value of a stock, is the price that a stock can be readily bought or sold in the current market place. In other words, the market value per share is the "going price" of a share stock.

It reveals the value that the market currently assigns to each share of a company's stock. Though this market value ratios are not applied to the share of privately-held entities since there is no accurate way to assign a market value to their shares. This is calculated as:

$$\frac{\text{Total Market value of business}}{\text{Total number of shares outstanding}}$$

iii. Earnings per Share (EPS): this refers to earnings per ordinary share. It is a performance indicator that is primarily of interest to existing and potential shareholders and their advisers. The resulting multiple is used to evaluate whether the shares are overpriced or underpriced in comparison to the same ratios results for competing companies. It measures the relationship between earnings per share and the market price per share it is calculated:

a. 
$$\frac{\text{Profit after Tax and preference dividend}}{\text{Ordinary Share Capital}}$$

Or,

b. 
$$\frac{\text{Profit after tax}}{\text{No. of Ordinary shares (the study adopts this measure)}}$$

### Concept of Cross Border Banking (CBB)

According to Ajayi 2014, Cross border banking involves the operation of banking activities across the borders of countries. This may be said to exist when there are financial transactions or arrangements across national borders such as: cross border financing through bank mergers, letters of Credit, cross border loan arrangements and bankers' acceptances and so on. It is a deposit money bank with a commercial presence outside its home country by way of at least one branch or subsidiary (Beck et al, 2014). This may or not include the listing of the stocks of such banks in the countries of their cross border activities or the integration of the bank's financial activities across national borders (Ajayi, 2014).

The reasons and benefits for deposit money banks going cross border are numerous – ranging from increased opportunities for profitability, better competition and financial efficiency; financial deepening and outreach; and stability. It also includes financial stability, financial deepening; risk diversification and forestalling financial shock amongst others. Despite the foregoing, the CBB still faces certain challenges such as the supervision challenge, contagion effect, country risk, and systematic risk.

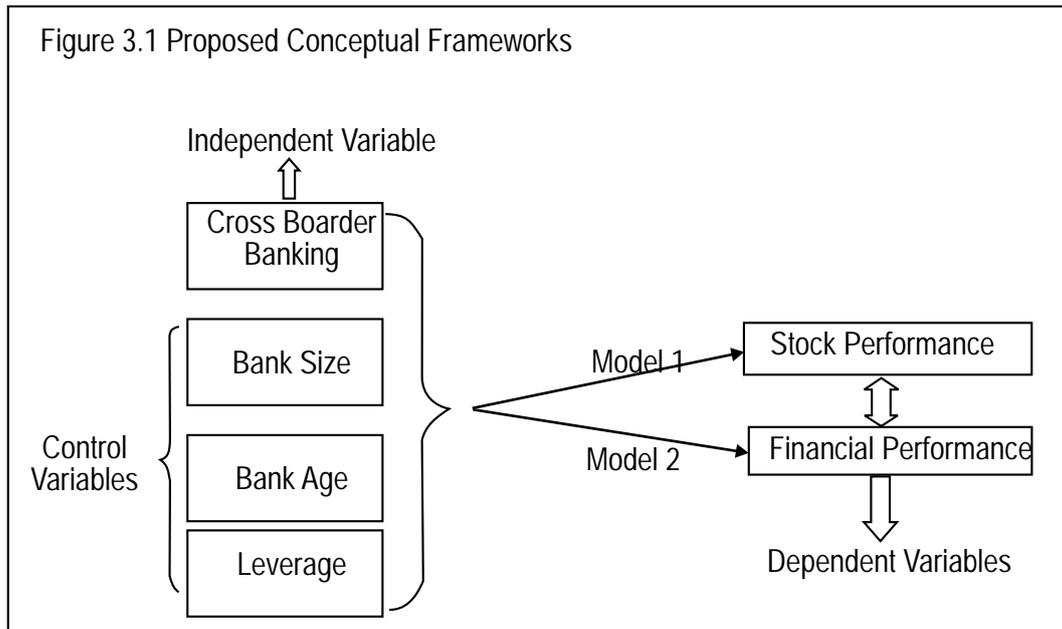
A situation where a bank goes outside her national boundaries, and is able to compete more favorably to increases her customer base, the tendency that her increased customer base will attract more deposits compared to her cross border situation is certain, and this will improve her performance position thereafter in terms of liquidity. Also is the performance of her stock price which will probably swing in the upward direction compared to her pre CB status performance. Similarly, all of the aforementioned variable performance will translate into a profit performance of such a bank as against the pre CB profit status. This view is also upheld by similar studies (Zhan, 2014; Kowalewski, 2014).

A CBB situation will be more advantageous performance wise (liquidity, stock price and profit) than her domestic counterparts, for varied reasons. Amongst these are that the cross border status will attract

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more customers which in turn leads to more deposits and ultimately translates into a better liquidity position. The liquidity performance empowers the bank for more loan advances amongst other banking activities that will eventually put the shares of that bank in a favourable position there by leading to higher share prices. A situation where this is sustained, a high and better post CBB profit performance is inevitable compared to the pre CBB profit performance, thus leading to the maximization of share holder's wealth in the long run.

Fig. 1: Conceptual Frame work of the study - Cross border banking and Performance



Source: Field survey (2017)

Fig 1 diagrammatically describes the inter-relationship that exists among variables of the study: independent, dependent and control variables. The idea that the study explores is, whether CBB activity has effect on the financial and share performance of quoted deposit money banks in Nigeria. Where a bank pulls or pushes her banking operations across her national borders mostly into an underdeveloped banking system, it would have introduced a more skilled, better managed hand into the country. Where it is a developed banking system, a better funded competitor would be introduced and with a healthy competition. Either way, a significant positive impact and effect should occur on her profit base inclusive of the stock prices. So it can be suggested from the fig 1 that cross border banking translates into both financial and stock performance.

**Control Variables**

Prior literatures on the concept of cross border banking and bank performance suggested some other factors aside our hypothesized variable as, possible influencers of quoted money deposit banks' performances. Therefore, to control for these other factors, this study has included the three most widely suggested factors (bank size, bank leverage and bank age) as control variables for this study. According to Clarke, Cull, Peria and Sanchez (2003), bigger banks are more likely to attract more customers and render professional services that most likely enhance the financial and stock

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performances of the organization. Bank age is also included in the study as a control variable due to the assumption that older banks are often more prosperous and would likely wish to preserve their reputation by rendering higher quality services which would reflect in their performance.

Also, Clarke, Cull, Peria and Sanchez (2003); Schmutzner (2006) and Liao (2009) found bank leverage as an important factor in improving the performances in quoted deposit money banks, which has the advantage of tax implications and translate into a positive performance. Hence, for such banks involved in cross border activities, the franchise value theory is probable to hold sway and is more likely to encourage businesses, and as such (Ilaboya, 2008) attract customers and give greater assurance of safety to shareholders and stakeholders fund, thereby improving the performances of such quoted deposit money banks.

It can be seen from the fig 1 that a cross bordered bank with a bank size factor, bank age factor and leverage factor is more likely to attract customers to her and this will likely impact on the profit performance level (model 1) and stock price performance (model 2).

From the literature, the study hypothesized that: 1) there is no significant difference in the liquidity of Nigeria CBB deposit money banks and their domestic counterparts across Africa; 2) there is no significant relationship between CB banking activities and profitability performance of deposit money banks in Nigeria; 3) there is no significant relationship between cross border banking and stock price performance of deposit money banks in Nigeria.

### Theoretical review

#### *Follow-the-Customer Hypothesis*

The follow-the-customer theory as depicted in Goldberg and Sainders (1981); Gray & Gray (1981) posits an assumption on banks who cross their borders to go after their customers. It assumes that institutions such as banks do enlarge their operational activities outside their shores with the desire to follow large clients abroad and tighten their grasp of domestic franchise in order to have a competitive advantage. This holds true for CBB as these deposit money banks move outside their shores, following large clients and establishing presence both geographical and otherwise in order to increase their market share.

#### *Portfolio Theory*

Modern Portfolio Theory (MPT) is a hypothesis put forth by Harry Markowitz in his paper "Portfolio Selection," in the year 1952. It is an investment theory based on the idea that risk-averse investors can construct portfolios to optimize or maximize expected return based on a given level of investment. This is to say, they will prefer a less risky portfolio to a riskier one for a given level of return. This implies that an investor will take on more risk only if he or she is expecting more reward. It also states that an investor can reduce the risk in his portfolio by holding a combination of assets instead of investing in a single one alone.

The theory can be linked or better still related to the study from the perspective of portfolio, in that CBB allows for similar diversification gains. When a domestic bank invests abroad (for example, by extending credit to borrowers in other countries or by acquiring foreign banks), it becomes less exposed to domestic shocks. Such a situation will reduce the variance of the asset portfolio thereby lowering asset volatility which in turn, reduces the probability of the bank failure in the domestic economy.

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It is upon these theories that the work is hinged as most banks do follow their customers outside their shores in order to grow customer's deposit. Also is the diversification of risks, insulation from domestic shocks and many more which reduces the likelihood of bank failures in the economy. Furthermore are the fact that stock prices are influenced and dictated by many factors; profits inclusive hence, the justification and rationale for CBB activities across Africa.

### Methodology

#### *Research Design*

The study adopts the ex-post-facto design because the effects of CBB on the banks performances that was investigated had already taken place. It is descriptive as well as exploratory given the fact that the concept of CBB is relatively new in Nigeria when compared to other (developed) countries. The study covers a 16year period (2001-2016) where 2001 to 2008 represent the pre CBB activities, while years 2009 to 2016 captures the post CBB periods. This period is when the African continent witnessed a significant increase in CBB. Also, the choice of 2009 as post CBB is informed by the fact that aggressive CBB began from 2009 (Lukonga & Chung, 2010).

The population of this study consists of all the fourteen (14) Deposit Money Banks quoted on the Nigerian Stock Exchange (NSE) (as at 2016). The census method is employed however, only nine (09) of these banks are into the activities that relate to CBB activities, thus, five out of these were statistically selected using simple random sampling method together with the five domestic banks.

Consequently, for the comparative purpose (on the difference), focus is on ten (10) banks: five (5) that are into CBB activities; another five (5) that are not into CBB thereby giving a sample of ten (10) banks for this category. While the second category consist of all banks. Here, the overall performances of these banks, (CBB and DB's) were used (for multiple regression) but exempted banks with parent companies not headquartered in Nigeria because the study is focused on indigenous quoted deposit money banks (i.e. with origin from Africa, Nigeria in particular). Furthermore, the entire banks used were subject to data availability and a close-to-uniformity year (period) of going cross border (2007 and 2008). Thus the judgmental (in line with Soymbo, 2002) technique was also used.

Table 2: Sampled banks

No.	Name of Bank	Bank type	Year of incorporation	Year of cross-border
1.	Access Bank	CB	1989	2007
2.	Diamond Bank	CB	1990	2008
3	Skye bank	CB	1989	2007
4.	Guaranty Trust Bank	CB	1996	2007
5.	Zenith bank	CB	1990	2013
6.	Fidelity Bank Plc	Domestic	1988	Nil
7.	Unity Bank Plc	Domestic	2006	Nil
8	Wema Bank Plc	Domestic	1990	Nil
9	Sterling Bank Plc	Domestic	1992	Nil
10	Stanbic IBTC	Domestic	1991	Nil

Source: Researcher's compilation (2017)

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### *Hypothesis to be Tested*

H<sub>01</sub>: There is no significant difference in the liquidity of Nigeria cross border deposit money banks and their domestic counterparts across Africa.

H<sub>02</sub>: There is no significant relationship between Cross border banking (CBB) activities and profitability performance of Deposit Money banks in Nigeria.

H<sub>03</sub>: There is no significant relationship between Cross border banking (CBB) activities and stock price performance of Deposit Money banks in Nigeria.

### *Model specification:*

The study adopts the widely used multiple regression model for cross border banking activities. The nature of the variable is dichotomous (dummy) in that banks can either fall into CBB (1) or Not CBB (0) (Sanyaolu, lyoha, & Ojeka, 2017). The multiple regression models require that the outcome falls in one and only one category of a set of contiguous integers and this is the nature of the independent variable for this study. The multiple regression analysis is adopted as the data analysis method.

The models for the study are specified taking cognizance of the nature of the relationship between the dependent and independent variables. They are such that it matches the data type and the investigation purpose which helped in the (new) discoveries of the study.

In respect to hypotheses 2 and 3, the researcher employed a multiple regression equation approach in testing the hypothesized relationship between the cross boarder banking (CBB) and financial/stock performance of Nigeria deposit money banks. To this effect, below are the following econometric models specified taking cognizances of the three earlier stated control variables:

Model One: three hypotheses but two models. How is hypothesis 1 tested?

Bank Profitability = f (Cross border banking, Size, Leverage, Age).....Equ (1)

Where - Cross border banking (the independent variable) is expected to explain the variations in the dependent variable (Bank Profitability).

Econometrically, the empirical model is represented below:

$BPF = \beta_0 + \beta_1 CBB + \beta_2 SIZE + \beta_3 LEV + \beta_4 AGE + et$ .....Equ. (2)

Where:

$\beta_0$  = Intercept

$\beta_1$  = Parameter to be estimated

BPT = Bank Profitability (Dependent variable) proxied using Return on Asset (ROA)

CBB = Cross Border Banking activities

SIZE = Size of money deposit bank

LEV = Bank leverage of money deposit bank

AGE = Age of money deposit bank

et = Stochastic error term

Our apriori expectation is:  $\beta_1, \beta_2, \beta_3, \beta_4 > 0$  which means that the study expects that an increase in cross boarder banking and each of the controls will lead to an increase in bank profitability.

Model Two:

Stock Performance = f (Cross border banking, Size, Leverage, Age)..... Equ (3)

Where - Cross border banking (the independent variable) is expected to explain the variations in the dependent variable (Stock Performance).

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Econometrically, the empirical model is represented below:

$$STP = \beta_0 + \beta_1 CBB + \beta_2 SIZE + \beta_3 LEV + \beta_4 AGE + \mu \dots \dots \dots \text{Equ. (4)}$$

Where:

$\beta_0$  = Intercept

$\beta_1$  = Parameter to be estimated

STP = Stock Performance (Dependent variable) to be proxied using Earnings per Share (EPS)

CBB = Cross Border Banking activities

SIZE = Size of money deposit bank

LEV = Bank leverage of money deposit bank

AGE = Age of money deposit bank

$\mu$  = Error term

Our apriori expectation is:  $\beta_1, \beta_2, \beta_3, \beta_4 > 0$  which means that an increase in cross boarder banking and each of the controls most likely leads to an increase in banks' stock performance.

*Variable Definition/Measurement*

Ratios mostly are used to measure the financial and stock performance of the banks. The main research variables that formed the research hypotheses are defined as follows:

Table 3: Operationalization of Variables

S/N	Variable	Proxy	Type	Measurement	Source
1	Bank Profitability indicator	ROA = Profit after tax scaled by total asset	Dependent	$\frac{\text{Profit after tax}}{\text{Total assets}}$	Atrill et al. (2009)
2	Stock Performance	EPS = To be proxied using Earnings Per Share (EPS)	Dependent	$\frac{\text{Net Profit Interest Tax Preference dividend before extraordinary items}}{\text{No. of Ordinary shares ranking for dividend}}$	Ilaboya, (2008)
3	Liquidity indicator	Current ratio	Dependent	$\frac{\text{Current assets}}{\text{Current liabilities}}$	Ilaboya, (2008)
4	Cross Border Banking activities	CBB = A dichotomous (dummy) variable if 1 for each year a bank is engaged in CBB and 0 otherwise	Independent	A dichotomous (dummy) variable if 1 for each year a bank is engaged in CBB and 0 otherwise.	Sanyaolu, lyoha, & Ojeka, (2017)
5	Bank Size	SIZE	Control	Natural Log of Total Asset	Dogan (2013)
6	Bank Leverage	LEV	Control	$\frac{\text{Total Debt}}{\text{Total Assets}}$	Osemwegie-Ero & Eneh, (2016)
7	Bank Age	AGE	Control	Current Year minus Year of Incorporation	Oribi-kalio (2018)

*Sources of data*

Secondary data were used for the study and were gathered from the published bank specific reports as well as their annual reports downloaded from the various official websites as well as share performance history were retrieved from the NSE, the NSE Factbook, CBN publications.

*Data analysis*

For analysis purposes, descriptive and inferential statistics are employed. The former consists of mean, median, range, standard deviation and Jacque-Bera test. The latter includes the Pearson



movement correlation and regression analysis often used to determine the direction, strength, and significance of a bivariate relationship (though also used for multivariate relationship). Specifically, the Paired sample T-test is used in analyzing research hypotheses one (Ho1). And this is done using the Statistical Package for Social Sciences (SPSS) software version. The justification for this lies in the fact that the Paired t-test is usually used to determine the prior and post performance of an activity (see Onyuma, Mugo and Karuiya, 2012). This permits the researcher to estimate a population variance from the sample statistics, irrespective of the sample size (Owie, 2013). It also checks for changes in behaviour before and after a course of action that is, a pre and post activity in a sample.

Also the correlation matrix (also see Onyuma, Mugo and Karuiya, 2012), multivariate (panel regression) analysis were used to test hypotheses two and three (Ho2 and Ho3) to determine the (positive or negative) significant relationship.

The descriptive statistics of the variables earmarked for the comparative tests are presented in Table 4. The table summarizes the sixteen (16) years descriptive characteristics of the variables encompassing profitability, liquidity, and stock performance indicators. As shown, the entire profitability, liquidity and stock performance variables of the cross-border banks (CBB) showed higher mean values when compared to those of the domestic banks. In terms of profitability, as represented by the return on assets, the CB banks have a mean value of 0.0387 while that of the domestic banks is 0.017 on average. The average liquidity indicator value, represented by current ratio, of the CB banks (1.398) slightly edged that of the domestic banks at 1.253. However, despite the observed differences in the mean values, which further tests will ascertain whether or not they are significant, all the standard deviation values are considerably low and exhibits signifi3were positively skewed showing that the profitability, liquidity and stock during the period are tailed to the right side.

Flowing from the above, our descriptive statistics results on profitability agrees with findings of Zhan (2014) who found that banks that were involved in cross-border bank (M&As) were more profitable; Osamor, Akinlabi and Osamor (2013) also found that cross-border activates have positive effects on the profitability of banks; Ghosh (2012) discovered the presence of foreign banks boosts the profitability. While SchAafer and Talavera (2007) findings is that banks' profitability is associated with foreign banks' presence. They also showed evidence that foreign banks' entry in Ukraine decreased the performance of domestic banks.

On liquidity, the work of Serbes (2014) concurs with our results findings. In his study, he found that the cross-border (M&As) banks may improve liquidity and net interest margins of target banks. While the outcomes of De Haas (2014) countered the descriptive statistics results on share price. His findings revels that the stock performance of stand-alone domestic banks may not be out-performed by their counterparts who go international or cross border.

Furthermore on the kurtosis, the kurtosis coefficients (of both CB and domestic banks) which is a measures of thickness of the tails of the distribution were all greater than the benchmark value of '3' and are considered to be very high which indicates that there is a massive deviation from normality. According to Engle and Patton (2001), kurtosis values ranging from 4 to 50 are considered to be very extreme deviation from normality. Therefore, only the kurtosis coefficient of EPS in CB banks (with a value of 3.75) appears to be normally distributed.

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Further, it was also observed that the Jarque-Bera test results of all the variables in both CB and domestic bank showed high values (except for EPS in CB bank with a value of 4.22 and a corresponding probability value of 0.12) which are an indication of significant departure from normality. These can be attributed to the small nature of the sample observation (i.e. 80) considering the limited number of CB banks which was equally matched with same number of domestic banks. However, according to the Central Limit Theorem as cited in Ghasem and Zahediasl (2012), with large enough sample sizes (> 30 or 40), the violation of the normality assumption poses no major problem in panel data analysis.

Table 4: Descriptive Statistics of the variables for CBBs and DBs (2001 – 2016)

		ROA	EPS	CR
CB BANKS	Mean	0.038720	1.077423	1.397584
	Maximum	0.811681	4.670000	5.712000
	Minimum	-	-	-
	Std. Dev.	0.352478	-2.9900	0.109000
	Skewness	0.127809	1.304259	0.836091
	Kurtosis	3.292559	0.419423	2.640495
	Jarque-Bera	21.02128	3.750461	12.33606
	Probability	1227.101	4.222852	383.5030
	Observations	0.000000	0.121065	0.000000
DOMESTIC BANKS	Mean	0.017442	0.305530	1.253487
	Maximum	0.226040	2.930000	3.507000
	Minimum	-	-	-
	Std. Dev.	0.064252	-2.44000	0.000000
	Skewness	0.038423	0.645078	0.614314
	Kurtosis	2.249474	0.592741	1.020747
	Jarque-Bera	13.97717	10.44879	6.239232
	Probability	469.1292	189.6326	48.86773
	Observations	0.000000	0.000000	0.000000

Source: Researchers Computation via Eviews 9, 2018

Where: ROA= Return on assets; EPS= Earnings per share; CR= Current ratio.

The Table 5, displayed the paired-sample t-test of the CB and DB performance variables. Based on the content of table 5, the liquidity performance (proxied using CR), of CB banks and that of their counterparts (domestic banks) do not differ significantly between the two groups.

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Table 5: Paired Sample t-tests of CB vs DB performance variables

	Performance Variables (CBBs vs DBs)	Mean	Std. Deviation	Std. Error Mean	T	Df	Sig. (2-tailed)	Decision
Pair 1	Cross-Border Bank CR Domestic Bank CR	0.1194	1.2043	0.1346	.886	79	0.378	n.s.

Where: n.s. = Not statistically significant at 5% level of confidence

The Table 6, revealed the pre and post descriptive Statistics of the CBBs variables. The study deployed the descriptive statistics in order to observe the changes that occurred in the performance variables of the cross-border banks before and after engaging in cross-border banking.

As shown in table 5, there were observable increases in each of the performance (profitability, stock and liquidity) variables in the post-CB eras. This suggests that, on average, majority of the banks that engaged in cross-border activities were better-off profit-wise since after engaging in cross-border activities. However, further tests will be deployed to ascertain if the observed increases could be attributed to the engagement in cross-border activities. On the condition of the data sets in terms of its normality, the Jarque Bera values of ROA (on Pre-CB), EPS (on Post-CB) were largely small with the corresponding probability values all greater than 5% meaning that the indexes of the aforementioned variables significantly aligned to normality. This can also be observed by the corresponding skewness and kurtosis coefficient values which did not disperse much from the benchmark of 0 and 3 respectively. However, the remaining variable (EPS) did not achieve normality owing to the large Jarque Bera values but poses no major problem based on the Central Limit Theorem – in relation to the sample size of just 40 observations.

Table 6: Pre and Post Descriptive Statistics of the CBBs variables

		ROA	EPS	CR
Before (PRE) Cross-border (2001-2008)	Mean	0.017366	0.655463	1.233429
	Maximum			
	Minimum	0.049967	3.830000	1.446477
	Std. Dev.	-0.034020	-1.030000	0.608000
	Skewness	0.017320	0.866756	0.139702
	Jarque-Bera	-0.571765	1.368549	-2.081862
	Probability	3.361082	25.53340	139.1825
	Observations	0.186273	0.000003	0.000000
After (POST) Cross-border (2009-2016)	Mean	40	40	40
	Maximum	0.060075	1.499383	1.561739
	Minimum	0.811681	4.670000	5.712000
	Std. Dev.	-0.352478	-2.990000	0.109000
	Skewness	0.178477	1.526206	1.158114
	Jarque-Bera	2.105366	-0.286127	1.604719
	Probability	116.7038	0.909982	30.44925
	Observations	0.000000	0.634454	0.000000
	Observations	40	40	40

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The Table 7, displayed the Paired Sample t-tests of pre and post CB banks performance variable. As a follow-up to table 6, the study determined to ascertain whether or not the changes that occurred in the performance variable (before and after CBB) is statistically significant. To that effect, the pre and post mean values of the variable is subjected to a paired sample t-test. The outcome, as summarized in table 7, shows and suggests that the liquidity of CB banks did not differ significantly after going cross-border.

Table 7: Paired Sample t-tests of pre and post CB banks

Performance Variables (CBBs vs DBs)	Mean	Std. Deviation	Std. Error Mean	T	Df	Sig. (2-tailed)	Decision
Pair 1 CR (Pre Cross-border) vs CR (Post Cross-border)	0.2951	1.2627	0.1997	1.48	39	0.147	n.s.

Source: Researchers Computation via SPSS version 22 (2018)

Where: n.s. = Not statistically significant at 5% level of confidence

### Inferential Statistics

The onus is to explain the behaviour of cross-border banking (CBB) and its individual impact on financial and stock performance (proxied here using ROA and EPS respectively) of quoted deposit money banks in Nigeria. To this extent, in testing Ho2 and Ho3, the study developed two (2) regression models using CBB (dummy variable: see the works of Sanyaolu, Iyoha, & Ojeka, 2017) as independent variable in both models. Both models also have bank size, leverage and bank age as controlling variables in a panel data comprising 208 observations in a sixteen-year period, 2001 to 2016. The analyses of the correlation and regression outputs are presented in Table 8.

Table 8: Correlation Analysis

-Correlation

-Probability (Sig) 2 Tailed

	Model 1: (PAT) Financial Performance (2001 -2016) 208 Observations					Model 2 : (EPS) Stock Performance (2001 -2016) 208Observations					
	PAT	CBB	SIZE	LEV	AGE		EPS	CBB	SIZE	LEV	AGE
PAT	1.000					EPS	1.000				
(Sig)	-----					(Sig)	-----				
CBB	0.256	1.000				CBB	0.215	1.000			
(Sig)	0.00**	-----				(Sig)	0.00**	-----			
SIZE	0.317	0.585	1.000			SIZE	0.385	0.536	1.000		
(Sig)	0.00**	0.00**	-----			(Sig)	0.00**	0.00**	-----		
LEV	-0.024	0.210	0.255	1.000		LEV	0.136	0.210	0.237	1.000	
(Sig)	0.732	0.00**	0.00**	-----		(Sig)	0.05*	0.00**	0.00**	-----	
AGE	0.089	0.445	0.506	0.141	1.000	AGE	0.075	0.447	0.444	0.141	1.000
(Sig)	0.202	0.00**	0.00**	0.04*	-----	(Sig)	0.278	0.00**	0.00**	0.04*	-----

\*\* . Correlation is significant at the 0.01 level (2-tailed).

\* . Correlation is significant at the 0.05 level (2-tailed).

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Table 8, presents the correlation analysis of variables from both models. As observed from the result of model one, a strong positive correlation exists between the dependent variable (PAT) and the independent variable, CBB, ( $r=0.256$ ). This implies that CBB (engagement in cross-border banking) and financial performance (PAT) moves in the same direction, an increase in one will most likely lead to an increase in the other. Among the three control variables, only SIZE has a strong association with PAT, the other two control variables (LEV and AGE) have weak negative and positive correlation respectively. Also, on the inter-associations among the explanatory variables, CBB is observed to be strongly and positively associated with SIZE, LEV and AGE. This suggests that CB activities or the engagement in CB is strongly associated with larger (SIZE), older (AGE) and highly levered (LEV) banks.

On the correlation matrix of model two, which is a replica of model one except for the dependent variable – EPS (proxy for stock performance), all the explanatory variables showed positive association with EPS. Specifically, CBB showed strong positive association with EPS at  $r=0.215$  and p-value 0.0001. What this suggests is that CBB and EPS move simultaneously in the same direction. Thus, an increase in CBB will most likely trigger a significant corresponding increase in EPS. As in the outcome of model one, CBB also has positive association with all the three control variables at 1% levels. It was observed from the table that there is no high-correlation among the variables which would have raised the issue of a possible multi collinearity problem among the series. The highest correlation coefficient in the output is 0.585 (i.e. CBB and SIZE). Hair, Black, Babin and Anderson (2010) suggest that multi collinearity problem is likely present when and if the correlation coefficient is above 0.90 (this shows the absence of such a problem).

Table 9: Variance Inflation Factors (VIF) tests

Model 1	Coefficient	Uncentered	Centered	Model 2	Coefficient	Uncentered	Centered
Variable	Variance	VIF	VIF	Variable	Variance	VIF	VIF
C	2.586269	380.7889	NA	C	3.750606	380.7889	NA
CBB	0.044133	2.874101	1.602864	CBB	0.064002	2.874101	1.602864
SIZE	0.007473	442.3858	1.759898	SIZE	0.010838	442.3858	1.759898
LEV	0.045055	4.159469	1.076162	LEV	0.065338	4.159469	1.076162
AGE	7.87E-05	8.842964	1.410510	AGE	0.000114	8.842964	1.410510

In spite of an indication of the unlikelihood of multicollinearity problem owing to the low correlation ( $r$ ) values evident in Table 9, a further test was performed, the Variance Inflation Factors (VIF) test for multicollinearity to confirm the assumption. As observed from the table 10, all the VIF values are very close to the value of '1' and far below the benchmark of 10. This connotes the indication of an absence of multicollinearity among the variables.

### Multivariate Analyses

This sub-section presents the regression results conducted using Eviews 9 econometrics computer software. The panel data estimation procedure was employed in both models due to the combination of cross-sectional and time-series nature of the data. The Pooled OLS, Fixed Effect and Random Effect techniques were all estimated in order to provide a comprehensive overview of the results. However,

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only the Fixed Effect and the Random Effect was presented due to the fact that they recognize the heterogeneity or individuality that may exist among the sampled companies while the Pooled OLS does not. However, in order to make the decision on the choice of the model to adopt, the Hausman test was thus employed to help determine the most appropriate model between fixed and random effect models.

Table 10: Hausman Tests

Model One:	Financial		
Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	3.228578	4	0.5203
Model Two:	Stock Performance		
Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	8.961064	4	0.0621

The two (2) Hausman test results in table 10 were performed on the panel data to determine the most desirable model between Fixed Effects and Random Effects. The following hypothesis applies:

$H_0$ : Random Effect Model is consistent

$H_1$ : Fixed Effect Model is consistent

Decision Rule: If p-value is less than 5 percent we can accept alternative hypothesis that fixed effect is consistent.

From table 11, the statistical significance of the model is assured at the 5% level owing to the f-statistic value (19.8) of the random effect model. On the percentage of the variation in financial profitability (proxied using PAT) that was accounted for by the independent (CBB) and controlling variables taken together, the result showed a total of 28.1%. The adjusted R-squared -which controls for the effect of the inclusion of successive explanatory variables on the degrees of freedom stood at 26.6%. This implies that the remaining proportion of about 73.4% was not captured by the model and has been taken care of by the error term.

A look at the slope coefficients of the explanatory variables shows the existence of a positive relationship between cross-border banking (CBB) and financial performance (PAT). Similarly, two among the control variables (SIZE and AGE) are also positively related to financial performance (PAT). On the other hand, the control variable of leverage (LEV) has negative relationship with profit after tax (PAT). These coefficients signs appeared same on both models, and also did not differ in term of significance levels. On the level of significance, it could be observed that LEV and AGE failed the significance test at all levels, while SIZE passed the significance test at 1% level of confidence. On the variable of CBB, the probability value of 0.0679 is greater than 0.05 but can be considered significant at 10% since the probability (p-value) is less than 0.1 as obtainable in applied statistics and used in most previous studies (see Al-Daoud, Ismail & Lode, 2014). What this implies is that a percent increase in CBB will lead to about 49.5% increase on PAT (financial profitability). Also, the Durbin-Watson statistic value of 1.76 suggests that stochastic dependence between successive units of the error term (autocorrelation) is not inherent among the series.

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Table 11: Panel Regression Results of Model One

Dependent Variable: PAT

Periods included: 16 (2001–2016)

Cross-sections included: 13

Total panel (balanced) observations: 208

FIXED EFFECT				RANDOM EFFECT <sup>1</sup>			
Variables	Coefficient	t-Statistic	Prob.	Variables	Coefficient	t-Statistic	Prob.
C	6.329359	3.834608	0.0002	C	7.024400	3.985910	0.0001
CBB	0.419815	1.845053	0.0666*	CBB	0.495401	1.835228	0.0679*
SIZE	0.467938	4.471024	0.0000***	SIZE	0.453089	4.565739	0.0000***
LEV	-0.242501	-1.085346	0.2791	LEV	-0.035662	-0.170063	0.8651
AGE	0.016254	0.618050	0.5373	AGE	0.008260	0.484289	0.6287
R <sup>2</sup>			0.632	R <sup>2</sup>			0.281
Adjusted R <sup>2</sup>			0.601	Adjusted R <sup>2</sup>			0.266
F-stat (p-value)			20.5(0.00)	F-stat (p-value)			19.8(0.00)
Durbin Watson			1.156	Durbin Watson			1.76

<sup>1</sup>The most desirable model

\*\*\* Significant at the 0.01 level. \*\* Significant at the 0.05 level. \*Significant at the 0.1 level.

The regression result of model two is presented in table 12. Although both the fixed and random effect outputs are presented, the outcome of the Hausman test (from table 10) suggests that the random effect model is most appropriate for the estimation. Hence, as observed from the random effect model output, the coefficient of determination showed that the model has a fairly low explanatory power at 11.4 (11.4%). This goes to show that the included explanatory variables, taken together, accounted for only about eleven percent of systematic variations in the dependent variable (EPS). Further, the F-statistic value (6.53) also passes the 5% significance test which shows that a strong linear relationship exists between the dependent variable and explanatory variables put together. The Durbin-Watson value of 2.42 is still within the acceptable range indicating the absence of serial auto-correction in the model.

On the coefficient signs and values which determine the direction and contribution of each explanatory variable to the behaviour of earnings per share (EPS) for the period studied, it can be observed from table 12 that the coefficients of CBB, SIZE and AGE have positive coefficient signs. However, only the variable of SIZE passed the significance test at 1% level of confidence; while CBB and AGE are not statistically significant. What this implies is that a unit increase in CBB will most likely lead to an insignificant 0.114 increases in EPS. On the other hand, the variable of leverage (LEV) has a negative sign and equally not significant at all levels. Based on the outcome of the model, only the variable of SIZE significantly affects EPS, while CBB can cause a positive effect on earnings per share (EPS) in line with the apriori expectation, but not significantly.

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Table 12: Panel Regression Results of Model Two

Dependent Variable: EPS

Periods included: 16 (2001–2016)

Cross-sections included: 13

Total panel (balanced) observations: 208

FIXED EFFECT				RANDOM EFFECT <sup>1</sup>			
Variables	Coefficient	t-Statistic	Prob.	Variables	Coefficient	t-Statistic	Prob.
C	-4.258327	-1.612978	0.1084	C	-6.954480	-3.448887	0.0007
CBB	0.161063	0.402399	0.6878	CBB	0.147691	0.523982	0.6009
SIZE	0.213422	1.309211	0.1920	SIZE	0.393719	3.594692	0.0004***
LEV	0.284396	0.872719	0.3839	LEV	-0.273267	-1.070043	0.2859
AGE	0.018785	0.454844	0.6497	AGE	0.016675	1.291759	0.1979
R <sup>2</sup>			0.241	R <sup>2</sup>			0.114
Adjusted R <sup>2</sup>			0.177	Adjusted R <sup>2</sup>			0.097
F-stat (p-value)			3.79(0.00)	F-stat (p-value)			6.53(0.00)
Durbin Watson			2.632	Durbin Watson			2.421

<sup>1</sup>The most desirable model

\*\*\* Significant at the 0.01 level.

### Test of Hypotheses

In order to answer the research question raised in the study, the three (3) formulated hypotheses were tested. For the comparative test, the cumulative mean values of the variable (liquidity) in the two groups (Cross-border banks vs Domestic banks) was computed and subjected to paired sample t-test in order to ascertain if their differences differ significantly in terms of cross-border and (versus) non-cross border. On the other hand, in order to ascertain whether or not cross-border banking (CBB) is a significant determinant of bank profitability and stock performance, the OLS estimation technique was employed. On that, the paired sample t-test was employed in testing hypotheses one (Ho1) while the calculated t-statistics from the regression results in table 11 and 12 were used in testing hypotheses two (Ho2) and three (Ho3). The decision rules are given below.

#### Decision Rule (Paired Sample T-test):

If p-value (Sig.) is less than 0.05, we reject the null hypothesis and accept the alternative- meaning that the particular performance variable of both groups (CB banks and Domestic banks) do in fact differ significantly; or the null hypotheses that they do not differ would be rejected.

#### Decision Rule (Panel regression estimation):

The null hypothesis will be rejected if the calculated t-statistic is greater than the t-critical value, otherwise the null shall be accepted and the alternative rejected. The t-critical value is 1.67 at 79 degree of freedom at 0.05 (5%) level of significance under the 2-tailed test.

#### Hypothesis One:

From table 13a, the p-value of liquidity has a value of 0.147 which is greater than 0.05 under the 2-tailed test. As a result of the decision rule, we do not have enough evidence to reject the null hypothesis that liquidity indicator of cross-border and domestic banks do not differ significantly; thus the null hypothesis is hereby accepted. This implies that there is no significant difference between the liquidity

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indicator ratios of cross-border banks when compared to that of the domestic banks within the period covered by this study.

Table 13a: Summary of Hypothesis Testing (Paired Sample T-Test)

		Variables (CBBs vs DBs)	T	Df	Sig. (2-tailed)	Decision
Ho1	Pair 1	Liquidity (Cross-border vs Domestic banks)	1.48	79	0.147	Accept null

\*\*Significant at 1% (99%) level of confidence

### *Hypothesis two*

It was observed from table 13b that CBB with a calculated t-value of 1.835 which is greater than the critical t-value of 1.67 at 5% level of significance under the two-tailed test. Hence, we can reject the null hypothesis and accept the alternative form. This implies that there is a significant relationship between cross-border banking (CBB) and bank profitability.

### *Hypothesis three*

Also from the table 13b, it can be observed that CBB with a calculated t-value of 0.6009 is lesser than the critical t-value of 1.67 at 5% level of significance under the two-tailed test. Hence, we accept the null hypothesis and reject the alternative. Hence, it can be concluded that there is no significant relationship between cross-border banking and stock performance.

Table 13b: Summary of Hypotheses Testing (Panel Regression)

	Dependent Variable(s)	Independent Variable	t-statistics	p-value (Sig.)	Significant or not	Decision
Ho2	Bank Profitability (PAT)	Cross-border banking (CBB)	1.835228	0.0679*	Sig	Reject null
Ho3	Stock Performance (EPS)	Cross-border banking (CBB)	0.523982	0.6009	NSig	Accept null

\*Significant at 10% (90%) level of confidence

### *Discussion of Results*

The broad objective of this study is to investigate the effect of cross-border banking (CBB) on the financial and share performance of quoted deposit money banks in Nigeria. The study was necessitated due to the recent increased interest on the activities of cross-border banks especially as empirical uncertainty still surrounds the extent to which the perceived gains of engaging in international banking affiliations have been achieved by Nigerian cross-border banks. Relatedly, the study also tries to ascertain whether the CB banks are more profitable before (pre) or after (post) going cross-border.

Using comparative analyses via the paired sample t-test, the study found that the cross-border banks' stock performance differs significantly when compared with the stock performance of the domestic banks. However, on profitability and liquidity, the outcome showed that the CB banks have marginally higher performance but was not statistically significant for the period covered by the study.

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On the pre and post performance of the cross-border banks, all the indices pertaining to all observed variables suggests that cross-border banks had better performance records in the post-CB periods in terms of profitability, stock performance (EPS) and liquidity (see table 6). However, when the liquidity variable was subjected to a comparative analytical tests via paired sample t-test (see table 7), measures were statistically insignificant when scaled on a pre and post CB basis. What this suggests is that the liquidity of the cross-border banks did not change significantly even after engaging in cross-border banking.

From the outcome of the hypotheses tests, the study found that the outcome of the first hypothesis test via the Paired Sample T-test (table 13a) showed no significant difference between the liquidity of cross-border banks and that of the domestic banks in Nigeria. The result reported a t-value of 1.48 and an insignificant probability value of 0.147 ( $>0.05$ ) which led to the acceptance of the first null hypothesis. What this implies is that, during the periods covered by the study, the changes in the liquidity indicator (measure using current ratios) of cross-border banks did not differ much from that of non-CB banks. This result appear to contradict the position of most extant studies such as De Haas, (2014); DeHaas and Van Lelyveld (2010) and Leon (2016) which suggests that cross-border banks tend to have access to stability and supportive aid from parent banks that often provide liquidity and capital if and when needed.

However, irrespective of the insignificant nature of the liquidity variable, the result is still with most previous findings such as Onyuma et al (2012) and Schoenmaker and Wagner (2011). The former sampled the Eastern African countries and found that most performance ratios such as gearing ratios improved in absolute terms in post cross-border periods, but the improvements were not statistically significant. Similarly, the latter examined the impact of cross-border banking on financial stability and liquidity and concluded that cross-border banking, though desirable, may not pose significant impact on liquidity unless it takes place in a way that maximizes its benefits while keeping the costs at bay.

In the test of the second hypothesis, the outcome (Table 13b) revealed that a positive relationship exists between cross-border banking and bank profitability (measured using profit after tax). This led to the rejection of the second null hypothesis. The decision was informed because the independent variable of CBB (cross-border banking) reported a t-value of 1.835 and a probability value of 0.0679 ( $<0.1$ ) which is significant at 10% level of confidence. The result is in tandem with our apriori expectation of a positive relationship between cross-border banking and bank profitability. The outcome further implies that engagement in cross-border banking contributed to about 28% of the variations in profit after tax of the sampled banks in the period covered by the study.

The result is consistent with the positive relationship reported in extant literature between cross-border affiliations and increased profitability of quoted firms (Awolusi and Onikoyi, 2014; Serbes, 2014; Luo et al, 2015; Akin and Bayyurt, 2016; Onyuma et al, 2012; Kowalewski, 2014; and Zhan, 2014). On the significant nature of the variable, howbeit at 10% levels, the result directly confirms the outcome of Osamor, Akinlabi and Osamor (2013) who found that cross-border banking have positive effects on the profit after tax of Nigerian quoted banks. On the other hand, not all studies found a significant relationship between CBB and firm profitability. On that, our finding negates those of Kilic (2011) and Lozano-Vivas and Weill (2008) where the former found that cross-border banking did not affect the banking performance significantly and the latter found evidence of an inverse relation between cross-

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border banking and return on assets (also a measure of profitability). The contradictions between the findings of this study and some extant studies can be attributed geographical. In this study profit after tax was used as a proxy for profitability in line with most previous studies like Ibe (2013).

In respect of the third hypothesis, the outcome (Table 13b) shows the presence of an insignificant positive relationship between CBB (cross-border banking) and stock performance (proxied using earnings per share). There from, the third null hypothesis was accepted as stated. The decision was made as a result of the t-value of the independent variable (CBB) which stood at 0.5234 as well as the corresponding probability value of 0.6009 ( $>0.05$ ) which is not statistically significant at all levels. Although the positive coefficient sign is in agreement with our apriori expectation of a positive relationship between cross-border banking and bank stock performance, the insignificant nature of the relationship negates the position of most previous studies such as Berger et al (2000); Boateng, et.al (2008); and Kowalewski (2014).

Specifically, Amihud et al (2002) found that cross-border banks' risks neither increases nor decreases after going cross-border. This connotes that the perceived advantage of risk diversification which would most likely lead to better stock performance is not certain. Similarly, Correa (2008) found evidence of no significant improvement in performance of CB banks in the early years of going cross-border. This suggests that the timing of executing a study of this nature can disrupt the outcome as most performance measures may take several years to become observable and significant.

On the control variables, which had banks size, leverage and firm age for both models, the outcome shows that only bank size (measure as the natural logarithm of total assets) was statistically significant in both models. This goes to show that among the three firm characteristics variables employed as controlling variables in the study, only company (bank) size came out significant as a major determinant of bank profitability and stock performance. This finding is expected because larger banks are more diversified and engages more in CB activities which attracts new clients attention and increases efficiency, all these translates to stronger profit and stock performance. However, our result of bank size is at variance with Zhan (2014) who found that bank size does not show a significant effect on the probability of cross-border bank mergers and acquisitions (M&As).

Expectedly, and in consonance with our apriori expectation, the result showed an inverse relationship between leverage and the two dependent variables (profitability and stock performance). The implication of the result is that highly leveraged firms may likely be associated with limited performance in respect of PAT and EPS. Similarly, the control variable of bank age showed a positive coefficient sign (for both models) in conformity with literature but was also not significant. This implies that age is not a significant determinant per se of bank profitability and stock performance. This result is at variance with Mousa, Desoky, & Sanusi, (2012) who suggest that older banks have larger market shares, high clientele patronage, customer loyalty and well established logistic channels. Thus, they tend to be more profitable due to their well-established operational strategies than younger banks with lower patronage.

It is clear that the results of our findings agree with the follow the customer and that of the portfolio theory. The assumptions as stated in the work, holds sway, this is evidenced in the results of hypothesis two, it can be said that a CBB status gains customers confidence and also attracts investors, this may also push the bank to follow their choice customers away from home. This most

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likely and ultimately translates into profitability for the bank. This again affirms the assumptions of the portfolio theory that the CBB lowered their risk by not investing in a single portfolio (home bank) alone, but did diversify by crossing border.

### Conclusion and Recommendations

Conclusively, it can be argued that, as far as the comparison of the performance of the Nigerian CB banks is concerned - either with their domestic counterparts before and after they engaged in cross-border banking, it can be concluded that one of the performance indices employed in this study (profitability) improved in absolute terms in favour of CB banks as well as on the post cross-border era. However, these improvements were only significant in terms of profit performance. Therefore, the gap which was identified and stated in the study has been filled from our result findings and the research objectives achieved together with the formulated hypotheses either accepted or rejected based on the decision rules. Categorically, it can be argued therefore that no significant difference exists with respect to liquidity and shares ratios of CB and non-CB banks in Nigeria, except for profit performance. Based on the findings of the study and conclusion drawn, the following are recommended:

1. Considering the observed positive increases in all the performance indices studied, though not all were significant, there is a clear possibility that the engagement in CB banking would enhance the overall performance of Nigerian banks, all things being equal. The study therefore recommends that the management of cross-border Nigerian banks should sustain their presence in foreign countries where they are more profitable in order to maximize their risk diversification potentials and overall performance of the bank.
2. The increase in profitability indicator, shows that CBB can be a strategy for an enhanced performance. The study therefore recommends that the CB banking should be considered by the management of different institutions considering this move as this will ultimately lead to the maximization of share holder's wealth in the long run.
3. The fact that there was a significant increase in stock price performance is a clear indication that shareholder's value is enhanced in the long run by CB activities. The study recommends that companies interested in CB ventures should be encouraged. Given the fact that the maximization of shareholder's wealth is the core objective of businesses, and where it is being achieved, such should be applauded.

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### Appendix 1:

#### List of Deposit Money Banks in Nigeria

No.	Name of Bank	Bank type	Year of incorporation	Year of cross-border
1	Access Bank	CB	1989	2007
2.	Diamond Bank	CB	1990	2008
3	Skye bank	CB	1989	2007
4.	Guaranty Trust Bank	CB	1996	2007
5.	Zenith bank	CB	1990	2013
6	Fidelity Bank Plc	Domestic	1988	nil
7	Unity Bank Plc	Domestic	2006	nil
8	Wema Bank Plc	Domestic	1990	nil
9.	Sterling Bank Plc	Domestic	1992	nil
10	Stanbic IBTC	Domestic	1991	nil
11.	First Bank	CB	1971	2001
12.	First City Monument Bank	CB	1982	2010
13.	Union bank	CB	1971	2001
14.	UBA	CB	1970	2007

Source: Researcher's compilation (via [www.nigeriagallery.com](http://www.nigeriagallery.com))

\*For analysis purposes the Unity bank is excluded as it was founded in 2006.