

# Analysis of Banks Profitability: Domestic and Foreign Comparison

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**Abstract:**-Attempt at analyzing banks profitability informed this study. For sound and robust reviews of end report, the study took at comparing commercial banks across countries in Africa with emphasis on Nigeria, Ghana and South Africa owing to presumed position they occupy in the continent. To achieve its aims and from data provided by World Bank Group – International Monetary Funds, the study mirrored commercial banks profitability with total income (TI) hence, the dependent variable. The independent variables were proxied by total loan (TL) and customer deposits (CD). Data sets covers a ten (10) year period across cross –sections. Panel Autoregressive Distributed Lag (ARDL) regression of pooled ordinary least square, fixed effect model (FE) and random effect (REM) models, with Hausman Test of acceptance were specified. Similarly, Panel descriptive statistics and Panel Unit Rootstest were also tested and confirmed. Analysis was done with the aid of E-views statistical software v9. Results from the Panel ARDL finds Fixed Effect (FE) Model appropriate having taking into considerations the heterogeneity observations often not observed in the pooled ordinary least square and the randomization effect in RE. By implication, findings indicate that total loan is statistically insignificant across sections showing a *prob.* 0.0714 with inverse correlation of 0.0169 while, customer deposit is statistically significant with a *prob* 0.000 and positive coefficient at 0.0480 as judged by the Hauman Test of 0.01 percent. However, the overall coefficient of determination shows high variability of close to one percent, while the model fitness is confirmed fit by F-statistic at 0.000. The study suggested conclusion is the provision of sound risk management via collaborative-business growth model for optimally banks benefit in the region. **Key-words:**- Banks Profitability. Total Loan, Total Customer Deposit, Panel Data. Received: June 1, 2020. Revised: December 2, 2020. Accepted: December 15, 2020. Published: December 27, 2020.

## 1 Introduction

Prior existence of modern banking, activities relating to banks practices were predicated upon safe keeping in Babylon around 200BC. Store of gold, silver among other valuables were kept in the temple for safe custody [1]. As at the time, the fall out of the Royal mint ushered in the goldsmith era in United Kingdom, where more secured safe-keeping was provided at a charge. Hitherto, commercial banking activities begun earnestly at Venice, Italy (Banca) in 1157, Germany, and France (Banqui) in 1800 and spread globally [1]. Thereafter, the scope of banking business broadened to include not only safe-custody and savings but loans, transfers, mobile/internet banking, advisory services, among others [2], [3]. Similarly, banking business had neared its full potentials about the time it entered into Africa in Europe and America. Obviously, colonization of most Africa countries was a factor. According to [2], [4], the establishment of Central Banks, which is a fall-out of political independence in most African countries, ushered in banking practices in the continent. For instance, the first established South African bank (Lombard Bank) started in 23<sup>rd</sup> April, 1793, until the establishment of South African Reserve Bank in 1921. While that of Ghana and Nigeria has their root in the year 1892/1894 under the Bank of British West Africa – African Banking Corporation from England prior the establishment of both Central Banks in 1957

and 1959 respectively. Without doubt, modern day sophistication has brought banking practices (especially commercial) to an unprecedented height of development involving stiff competition due to economic integration. Today, banks jostle for new grounds beyond their territorial domain in order to increase profitability, deposit base, market value, and shareholders value among others [5], [6], [7], [8], [9] [10], [11], [12]. Literature attest to the fact that banks profitability is essential at greasing the wheel of economy progress [9] and banks across Africa region have contributed their quota towards their respective economies in this regard. While banking reforms are common *sin-qua-non* in most emerging economies like that of Africa, its intermediation function is also not immune to regional or global dictate. In order words, surviving altogether remains a continuous struggle in the spate of narrowing economy integration. Ironically, literature point to the fact that studies relating to the subject matter are numerous especially as it relates to policy adoption and practices however, that relating to comparative performance are scarcely available or better still, differs in terms of reference measurement [10], [13], [14]. As a result and without equivocation, the objective of the study seeks to examine commercial banks profitability vis-à-vis core mandate of deposit mobilization, granting of loans, in relation to total income generation. This shall be done with

particular emphasis on South Africa, Ghana and Nigeria. Thus, the study is arranged in four sections. The literature review comes after the introduction. Following this, is the methodology and conclusion.

## 2 Problem Formulation

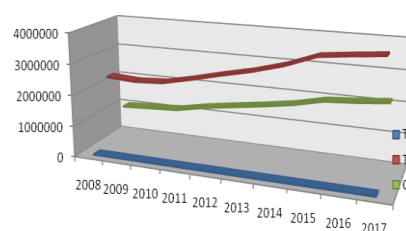
Banks are the engine of growth in an economy because of the sensitive position they occupy at making funds available to those who need them for investment purpose from those with surplus at a profit [6],[7], [15], [16]. In the midst of this intermediation, banks face challenges at making enough income to keep them perpetually in business and to also satisfy their stakeholders, especially as the world becomes a global village. While banks must mobilize deposit at all times from the surplus units and lend same to deficit unit, it becomes imperative that they must achieve profitability in the process. Thus, banks income (interest/non-interest yield), are two vital components at generating profitability. In comparison studies had shown that banks (especially local) faces herculean task at making adequate and continuous income especially in the wake of global economic integration. This is so because foreign banks reneged to their mother bank in the event of crisis. For instance, [7] found that return on asset of foreign banks outperformed their local counterparts in Ghana. This is also the case of [6] and [8] in Pakistan. In India, [9] opined that profitability is key to productive activities among the banks in Germany. To [17], income diversification and bank size influences profitability in Nigeria. Similarly, [18] believes profitability is essential to banks growth in South Africa. [10] found a weak and mixed outcome of how performance impacted on growth of the two countries (Turkey and Romania) investigated [10] However, studies like [5], [6] observed somewhat different results between the performance of local banks and foreign banks in Pakistan. In fact, they found out that local banks performed profitably than their foreign counterparts. In spite of all, the depth of banks performance in presumed Africa emerging countries of South Africa, Ghana and Nigeria, remains a matter of concern especially in the wake of growing but uncertain global integration owing to the COVID-19 pandemic. This, thus, leaves room for a questionable proposition to which the study is concerned.

## 2.1 Africa Banking System

### a. The South African [SA] Banking System

Banking system in Africa mirrored colonization of African countries. South Africa is not an exemption. Same features, for instance, presence of foreign banks, registrations and operational modalities featured in commercial banking practices in South Africa. What differs to a large extent is nomenclature as the case maybe. For example, commercial banking practices in South Africa has four divisions: commercial bank controlled and owned by the locals, commercial bank owned and controlled by the foreigners, commercial bank with international representative within the country and, mutually controlled commercial bank. [19]. Similarly, South Africa bank is considered one of the best in the continent. This is affirmed in the top twenty (20) ranking by World Economic Forum Global Competitiveness Survey (WEFGS) [18], [19], [21]. And, it is also ranked in third position by the same WEFGS from among the 148 countries [22]. A cursory glance at South Africa commercial banks performance is depicted below.

**Fig. 1, South African Banks(Comm.) Indicators**



In South Africa, there is a reverse trend in manner in which banks activities occurred, unlike in other countries under review. Here, distribution of loans took the highest ranking as depicted by the graph and IMF 2018 report. This is also confirmed in [16]. By implication, total loans (TI) profile in South Africa commercial bank is the highest among the countries under review. However, there is a wide proportional difference in volume of total deposit and total income. When compared with other countries in review, South Africa has the least deposit liabilities. Though her deposit liabilities is 86.2 percent of total deposit according to [20], [23] this is however not in tandem with [16] study who examined a longer time series but

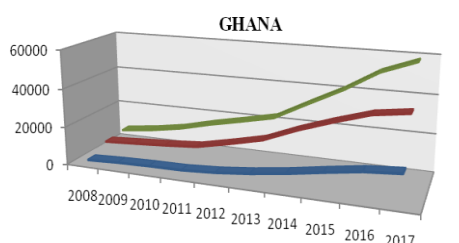
assert that South Africa has the highest compared with Egypt and Nigeria. For total income, it shows that it is low over the period in review.

Generally, from twenty – two (22) registered banks, two (2) mutual banks, fifteen (15) and forty-four (44) branches of foreign local bank and representative banks respectively in 2003. Banks composition is South Africa now has seventeen (17) registered banks while the two mutual banks remain unchanged. There is a one-step dropdown of the international branches of foreign banks to fourteen (14). Foreign banks locally also dropped one place to forty-three (43) branches [20], [21]. Similarly, the Big – 5 commercial banks: ABSA Bank, Capitec Bank, First National Bank, NedBank and Standard Bank, holds a total of 5144 branches and 27,953 automated teller machines [22].

### b. The Ghanaian Banking System

Banking practice in Ghana also depicts that of English invasion and eventual establishment of banking business. And unlike in South Africa, commercial banking practices in Ghana is simply universal banking practices where commercial banks are allowed to take on all financially related services [17], [8]. However, the country is home to foreign banks as of the case of all the countries under review. Presently Ghana has fifteen (15) foreign banks out of the total twenty seven (27) universal banks with a total of 904 branches [8]. A glance at the performance of Ghana commercial banks is depicted below.

**Fig. 2, Ghanaian Banking Indicators**



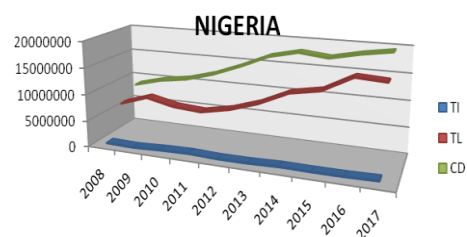
The Ghanaian commercial banks activities show a linearized trend of customer deposits (CD) for the period under review. Though, there was a steady increase between periods 2008 – 2013. This however increased significantly thereafter. Ghana commercial banks have the highest deposit among South Africa and Nigeria for the period in review. The country’s commercial banks total loans (TL) is however lower in volume than that of South

Africa for same period. Further, total income (TI) indicate a moderately increase for the same period.

### c. The Nigerian Banking System

The banking system in Nigeria comprises of privately and publicly owned banks. This case is not also different from the ones under review. The private are in the class of commercial banks comprising of local and foreign ownership; while that public owned are government established specialized banks. Like other countries in review, commercial banks number twenty five (25) with 5714 branches, 882 microfinance banks. The commercial performance is also depicted as below.

**Fig. 3, Ghanaian Banking Indicators**



From the above, figure3 represent the activities of commercial banks in Nigeria as presented by International Monetary Fund Financial Soundness Indicators. As shown, customer deposits (CD) indicator shows consistent rise in periods under review. The peak period was visible between 2013-2014, but a downward trend emerged in 2016 and rose again 2017. Also, the volume of total loans (TL) disbursed foot dragged in periods 2010, 2011, 2012 respectively. It latter showed a steady rise between 2014, 2015 and 2016 but dipped in 2017. This trend is compared with that of Ghana. However, profitability as described by total income (TI) maintained a rather low outcome.

## 3 Problem Solution

Empirical method adopted for the study is the Panel autoregressive distributed lag ARDL technique. Usually, where more than one country data are pooled at various times and crosschecked, the Panel data analysis becomes an appropriate technique [24], [25]. It serves the advantage of examining country specific (individually/jointly) in time (t), years/period (p) and number of years

(y), as against other methodology. Normally, Panel data follows three empirical processes: i. Cross-section, ii. FE model and iii. The RE model. For Panel appropriateness, the Hausman test is often conducted to identify, jointly, country's specific characteristics. Also, the study will perform the individual specific correlation coefficient relationship to ascertain individual country specific relationship with the variables in the study. Specifically, prior conducting the Panel ARDL, the descriptive analysis, the panel unit root test will also be conducted. As a rule, panel stationarity is tested and accepted on a common stationarity of either Levin, Lin & Chu (LLC) [25], Breitung, LmPesaran & Shin (LPS) [26], and Fischer-Type test (FT) [27] of Maddala & Wu, Breitung Levine LLC [28] [29]. In the study, Total income (TI) accrued from banks intermediation activities is proxied for banks profitability and serves as the dependent variable, Total loan (TL) and customer deposits (CD) are the independent variables across countries. Data for the study covers ten years period from 2008 to 2017 for three emerging economy: South Africa, Ghana and Nigeria. Data is sourced from World Bank arm of International Monetary Fund Financial Soundness indicator 2018.

### 3.1 Model Specification

In the general form of a regression model, the study mathematically derive;

$$TI = f(CD, TL) \quad (1)$$

Where: TI = total income (dependent variable) and CD = consumer deposits; TL = total loan (independent variable).

Thus, specifying a generalized Panel ARDL model in this process where we have, N = number of groups across sections (i.e. 3: Nigeria, Ghana and South Africa), in this case; p, q, q<sup>n</sup> and T = number of years (i.e. 10), is as follows;

$$\Psi_{it} = \sum_{l=i}^p \beta_l \square_i \Psi_{i,t-l} + \sum_{l=0}^q \beta_{ij} \square_{i,t-l} + \lambda_i + \varepsilon_{1t}$$

Where:  $\Psi_{it}$  represent dependent variable,  $(\square_{i,t-l})$  is the Kx1 vector strictly I(0)/I(1) only in unit root testing/cointegration factor,  $\square_{t-i}$ , represents lag specification,  $\beta_{ij}$  represents kx1 coefficients of vector,  $\lambda_i$  represents specific unit effects; I = 1,..N; t = 1,2,...,T; p,q represents lag selections while,  $\varepsilon_{1t}$  is the error term. Further, because series must undergo stationarity testing, which could lead to differencing and losing a lag, it is imperative

that the Panel ARDL model is re-parameterized as follows;

$$\Delta \Psi_{it} = \Omega_i [\Psi_{i,t-l} - \theta_i \square_{i,t}] + \sum_{l=i}^{p-1} \phi_{ij} \Delta \Psi_{i,t-l} + \sum_{j=0}^{q-1} \beta_{ij} \Delta \square_{i,t-l} + \lambda_i + \varepsilon_{1t}$$

Where:  $\Omega_i = -(1 - \beta_i)$ , is the group-specific adjustment speed of coefficients where  $\Omega_i < 0$ .  $\theta_i$ ,  $\phi_{ij}$  and  $\beta_{ij}$  are the vectors of the long run and short run coefficient dynamics.

#### 3.1.1 Estimation Procedure

Prior estimating the Panel, the study performed the descriptive test of the series to check for normality. Thereafter, the panel unit root test was also conducted using the LLC, Breitung, LPS and FT criterion. This was confirmed under HadriZ-stat for most common unit root to be accepted for study prediction.

#### 3.1.2 Descriptive Statistics

The descriptives statistics used in the study are;

- (a) The Skewness, which measure the asymmetry normality of the distribution. This is described under the assumptions that a; 0,+ or - indicate symmetry, long right tail and long left tail respectively. The Skewness is represented thus;

$$Skw = \frac{\sum p(\theta - \lambda)^3}{\tau^3} \quad (4)$$

- (b) The Kurtosis: this measures the peakness or otherwise of series volatility with an assumption criteria of 3. That is, when an output is = 3, < 3, or > 3, then, the series is mesokurtic, flat, or peak respectively. Kurtosis is represented thus;

$$kts = \frac{\sum p(\theta - \lambda)^4}{\tau^4} \quad (5)$$

- (c) JarqueBera statistics combine the composite result of skewness and kurtosis to give a combined coefficient. This is derived thus;

$$JB = p \left[ \frac{(ab1)^2}{6} + \frac{(b2-3)^2}{24} \right] \quad (6)$$

#### 3.1.3 Pooled Regression OLS

The study used the cross-sectional analysis to kick-start its estimation process. The Pooled OLS panel allows for estimation in which the  $\lambda_i$  are perpetual over time but with no specific  $f_t$  effect. By implication, this technique assumes homogeneity of all data sets in the panel without unique characteristics of  $\lambda_i$  as such; treats all measurement with no universal effect over time.

### 3.1.4 Fixed Effect (FE) Model

The FE treats the heterogeneity observed in the Pooled OLS panel by fixing the unobserved characteristics. That is, it allows for individual cross-section intercept that is otherwise unobserved in the pooled regression but it is time invariant. This Ferdaous, (2016) regards Fixed Effect (FE) as the best fit, taking into account the treatment of unobserved heterogeneity among countries.

### 3.1.5 Random Effects Model

Panel analysis allow for a third verification of cross-section data inspection. This is done using the Random Effect (RE) model. Unlike, in FE which fixed all cross-section characteristics, the variance component model treats heterogeneity and time effect but the individual specific shock has no correlation relationship with the independent series in the study. Thus, the uncorrelated unobserved individuality country specific, variance component model allows for control using the generalized least square process.

### 3.1.6 Hausman Test

Conventionally, the three stages of analyzing cross-sectional series as treated above, leaves certain uncertainty in the acceptability of which of the model is most appropriate. For instance, the Pooled OLS do not distinguish between observations hence; variables are treated in homogeneity form. However, these lapses in Pooled OLS are then taking into consideration with Fixed Effect but with time invariant and vice versa with Random Effect (RE). To bridge this conflicting decision Hausman in 1978 proposed a  $H_0$ ,  $H_a$  test of appropriateness as follows:

$H_0$ : RE model is the appropriate

$H_a$ : FE model is the appropriate

By implication, the decision criterion is to reject null ( $H_0$ ) if probability value falls below 0.05

percent level of significant, otherwise accept alternative ( $H_a$ ). [27], [28], [29]

## 4.0 Results and Discussion

**Table 1, Descriptive Result**

	TI	CD	TL
Mean	192716.8	5406304	4386365
Median	21506.20	1506603	2859958
Maximum	742512.8	19429168	15897520
Minimum	1704.000	6949.000	5915.500
Std. Dev.	267805.4	7033346	4812911
Skewness	0.921787	0.951324	1.064443
Kurtosis	2.088454	2.220868	3.112303
Jarque-Bera	5.287100	5.283894	5.680959
Probability	0.071108	0.071222	0.058398
Observations			

As shown in table 1 above is the descriptive output of the study. Judging by Skewness as explained in 3.1.2 (a), all the series are positive (+) hence, have a long right tail and are also symmetrical. Similarly, apart from total loan (TL) that is mesokurtic (i.e. = 3), total income (TI), and Consumer deposits (CD), are flat (i.e. < 3). Also, the JB shows the combined outcome of the series indicating positive coefficients of the series.

**Table 2, Panel Unit Root Test Result**

Method	Total Income				CD	TL
	Statistic	Prob.**	C/sections	Obs		
Null: Unit root (assumes common unit root process)						
LLC t*	-5.04250	0.0000	3	24	0.0071	0.0266
Breitung t-stat	-0.76413	0.2224	3	21	0.3154	0.9669
Null: Unit root (assumes individual unit root process)						
LPS (Im, Pesaran and Shin W-stat)	-2.59342	0.0048	3	24	0.5321	0.5452
ADF - Fisher Chi-square	28.2142	0.0001	3	24	0.5472	0.5702
PP - Fisher Chi-square	17.6254	0.0072	3	27	0.7190	0.0684
Order of Integration	I(0)				I(1)	I(1)
** Probabilities for Fisher tests are computed using an asymptotic Chi-square distribution. All other tests assume asymptotic normality.						

Having examined the descriptive statistics of the series to determine their normality characteristics, the study proceeded to test for the panel unit stationarity status. From table two, all assumed preconditions suggesting the presence of a unit

root to either accept  $H_o$  or reject  $H_a$  or vice versa is indicated. However, the criteria is to accept or reject based on common characteristics. From the result, total income became stationary at order I(0) judging by LLC, Lm, Pesaran and Shin, Fisher outcome, as against Breitung. Similarly, these conditions were not satisfied in consumer deposits (CD) and total loan (TL) at order hence they were differenced. At first difference, only LLC satisfied stationarity condition at I(1) respectively hence, judgment was taken based on LLC condition.

### 4.1 Panel ARDL Result

Essentially, once the panel unit root status is determined, the next step is to perform Panel ARDL test based on the outcome of the unit root result. In essence, lag-length procedure is examined through lag-length selection criteria, which is essential to determine individual or joint country specifics. Specifically, Panel ARDL estimation process is performed when, after conducting the unit root, series are of order I(0) and order I(1) but not order I(2). That is, the series demonstrates different level of stationarity. In essence, the lag-length selection criteria is first determined, which will lead to ascertaining the short-run and long-run associations of the cross-sections using the vector autoregressive regression (VAR) procedure. Below is the automatic lag-length specification.

**Table 3, Automatic Lag Length Output**

Lag	LogL	LR	FPE	AIC	SC	HQ
0	1087.430	NA	5.84e+35	90.86919	91.01645	90.90826
1	995.8711	152.5986	6.06e+32	83.98926	84.57829	84.14553
2	942.9633	74.95277*	1.63e+31*	80.33027*	81.36107*	80.60375*

Again, lag length selection criteria considers majority result as produced by various lag-length selection criteria in table 3. This is to allow decision to be taken based on selections adopted in the course of performing the autoregressive estimates. From the table, LR, FPE, AIC, SC and HQ system automatic lag selection (2) is common to the series. That is, the most appropriate lag-length selection is given automatically as 2 indicated with the sign (\*) and common to all selection criteria. By implication we have, LR(-2)\*, FPE(-2)\*, AIC(-2)\*, SC(-2)\* and HQ(-2)\*, indicating that lag-2 is the optimal and appropriate.

**Table 4, Panel ARDL Result**

Dependent Variable : Total Income				
Independent Variable		Model I: Pooled Regression	Model II: FE	Model III: RE
Total Loan (TL)	Prob	0.0714	0.8204	0.0724
	Coefficient	-0.0169	-0.0025	-0.0169
Total Deposits	Prob	0.000	0.0280	0.000
	Coefficient	0.048	0.0245	0.0480
	R-Squared	0.94	0.95	0.94
	Hausman Test			0.01

#### 4.1.1 Pooled Regression (Model I)

The pooled regression shown in the table indicate that total loan (TL) is statistically insignificant having fall above the 0.05 percent level of significant at 0.07. By this result, it means the hypothesis of no significant relationship between total income (TI) and total loan is true. Conversely, total deposits (TD) is statistically significant at 0.000 percent hence, the null hypothesis of no significant relationship between commercial bank's total income (TI) and total deposit (TD) is false. However, there is a caveat to the acceptability potential of pooled panel outcome because it does not take into consideration the individuality of observations in the model that is, it assumes homogeneity of character and universal effects for all countries in the model. As such, other models of FE and RE are considered.

#### 4.1.2 Fixed Effect Model (Model II)

Since the pooled OLS do not take into account individual cross-sections specific characteristics leading to missing unobserved country specific, it then means that all observation are the same. As a consequence, the Fixed Effect (FE) provides possible option. As a rule, the FE treats the unobserved characteristics and accounts for individual variable characteristics, universal effects with unique difference in intercept but is time invariant. Also the error term vary non-stochastically over each cross-sections and period [23]. Again, total loan (TL) in FE model shows insignificant relationship hence, the null is true. Whereas, total deposit (TD) is significant hence, the null is false. Because FE is fixed over time and correlated with the independent variables the RE suffices.

#### 4.1.3 Random Effect Model (Model III)

The Random Effect is the third method in the process of panel analysis. It takes into consideration heterogeneity, time invariant but the

individual effect is uncorrelated. It allows for the control of unobserved heterogeneity through the general least-square method (GLS) where error terms of observations are randomly distributed [23], [24]. Again, total loan shows insignificant relationship with the total income; while total deposit is statistically significant at 0.000 percent given 0.05 level of significant.

#### 4.1.4 Hausman Test

To determine the appropriateness of model to adopt for prediction and for acceptability purpose, the Hausman test is applied. Accordingly, if  $H_0$  is significant, then FE is appropriate otherwise, RE is appropriate. Based on the result, FE model is appropriate for the study. The result of this study also corroborate [23]. Thus, total loan is statistically insignificant to explain total income in the study. This is indicated by prob 0.820, which is higher than the 0.05 percent level of significant hence, it is insignificant. However, worthy of note is the negative coefficient at -0.002 which falls in line with economic principles and leaves us with a caution. Expectedly, the higher the volume of total loan disbursed the higher banks returns in expected income. Conversely, since total deposit is statistically significant at 0.02 to explain total income, on the whole, FE R-squared result which measures the overall degree of responsiveness to a one percent change between dependent and independent variable is explained by 0.94 percent of variation, indicating high variability between the variables. By implication, the result of the study show that, collectively, Nigeria, Ghana and South Africa total banks performance is explained by total customers' deposit rather than total loan.

#### 4.1.5 Individual Specific Correlation Result

**Table 5, Nigeria**

Series	Coefficient	Std. Error	t-Stat	Sig *
COINTEQ01	-2.292211	0.093082	-24.62567	0.0001
D(TI(-1))	0.518216	0.044915	11.53775	0.0014
D(CD)	-0.061502	0.001510	-40.72178	0.0000
D(CD(-1))	-0.111463	0.000733	-152.1033	0.0000
D(TL)	-0.074670	0.000144	-517.2181	0.0000
D(TL(-1))	-0.039690	0.000632	-62.81194	0.0000
C	81844.25	4.25E+09	1.93E-05	1.0000

The individual country specific relationship of the dependent and independent variables were also examined. The essence is to determine the individual country's commercial bank

performance in terms of profitability. Thus, in Table 5, the result showed that Nigeria commercial bank customer deposit - D(CD(-1)) is significant at a sig\* = 0.0000. This significant outcome for the country suggest possible favourable policy in the following regard. First, there is a possibility of savings incentive, which laid credence to savings habit within the country. Secondly, is also the possibility of banks ability to create additional money in the system due to high deposit mobilization rate. Or, simply the financial inclusion drive policy on the side of the monetary authorities, among others. Similarly, the result is also similar in the relationship between total loan and total income for the country. The result showed that D(TL(-1)) is statistically significant at sig\* = 0.000. Again, what the result implies stem from the fact that the banks intermediation function is also optimal to explain its total income. By extention, banks in the country are sufficiently liquid as well as effectively performing their intermediation role.

**Table 6, Ghana**

Series	Coefficient	S.E	t-Stat	Sig. *
COINTEQ01	-0.152672	0.005486	-27.82740	0.0001
D(TI(-1))	0.733732	0.111567	6.576572	0.0072
D(CD)	-0.121160	0.002880	-42.07100	0.0000
D(CD(-1))	0.094529	0.004766	19.83260	0.0003
D(TL)	0.345526	0.003024	114.2730	0.0000
D(TL(-1))	0.069957	0.013151	5.319450	0.0130
C	-72.75792	10966.68	-0.006634	0.9951

In Ghana, commercial banks performance is also visible judging by the result. From the table, the customer deposit D(CD(-1)) indicate a statistically significant relationship against total income at a sig\* 0.0003. This means that, the null hypothesis is rejected also for Ghana. Possible reasons responsible for this outcome may not be completely different from that of the Nigerian context. More so, Ghana's geographical location, which falls within the same Western – Africa region as in the case of Nigeria, provides an avenue for common shared financial charactersitics which may be responsible for this outcome. As a result, possible saving induced incentives, government policy and the monetary authority drive towards financial inclusion are seen as driver to these significant outcome. However, unlike in the case of Nigeria, total loan D(TL(-1)) in Ghana is also positive and stastically significant. But the sig\* 0.013 indicate a moderately



significance outcome unlike that of Nigeria. What this mean is that, commercial bank intermediation function in the Ghanaian settings comes with minor moderation either propelled as a result of policy implication or as a result of banks deliberate act.

**Table 7, South Africa**

Series	Coefficient	S.E	t-Stat	Sig. *
COINTEQ01	-0.797542	1.38E-08	-57590530	0.0000
D(TI(-1))	0.193573	1.53E-09	1.26E+08	0.0000
D(CD)	0.017648	5.51E-11	3.20E+08	0.0000
D(CD(-1))	0.095300	5.04E-11	1.89E+09	0.0000
D(TL)	0.001743	7.56E-12	2.31E+08	0.0000
D(TL(-1))	-0.052644	9.27E-12	-5.68E+09	0.0000
C	-946.8052	2.666373	-355.0911	0.0000

Similarly, the result of the individual country's commercial bank performance showed that South African's commercial banks have performed profitably in their operations for the period in review. A cursory glance at the result indicate that commercial banks deposit mobilization drive in South Africa, as proxied by customer deposit D(CD(-1)), is positive and statistically significant. The result showed a sig\* 0.0000 hence, the null hypothesis of no relationship between customer deposit and total income of the banks is rejected. In essence, the result equally suggest that, saving incentives, government policy drive and the apex regulatory framework provides avenue that have resulted into the positive and significant outcome been witnessed as well. Also, total loan as mirrored by D(TL(-1))is positive and statistically signfifant. The sig\* 0.000, shows that the null hypothesis is not accepted but the alternative. Again, this outcome presupposes that South African commercial banks equally play significant role in financial intermediation as evident form the result.

Overall and from the stand-alone view-point, the results for the countries – Nigeria, Ghana and South Africa understudied, shows, to a large extent, that commercial banks within the region and indeed Africa, are highly profitable. This outcome is in-line with [8],[9], study.

#### 4.1.5 Discussion of Findings

Having examined the individual and jointly comparison analysis of banks performance in selected countries in Africa: Nigeria, Ghana and South Africa, findings suggest that banks intermediation role in their respective countries is optimally, especially judging from the time trajectory adopted for the study. It also shows that individually, their performance activities learn credence to their profitability. However, jointly, findings suggest that comparative benefits that is accrueable to international banking practice advantages are not maximized. This is judging from the panel

result, which shows that total loan is inadequate in predicting performance hence, a concern for players at the international arena.

## 5 Conclusions

Attempt at analyzing commercial banks profitability informed this study. For sound and robust reviews of end report, the study took at comparing commercial banks across countries in Africa with emphasis on Nigeria, Ghana and South Africa owing to presumed position they occupy in the continent. To achieve its aims and from data provided by World Bank Group – International Monetary Funds, the study mirrored commercial banks profitability with total income (TI) hence, the dependent variable. The independent variables were proxied by total loan (TL) and customer deposits (CD). The period used covers a ten (10) year period across cross –sections. Results from the Panel ARDL regression find Fixed Effect model appropriate. However, total loan to total income was statistically insignificant but with a caveat as presented by negatively signed correlation. This is because the outcome conform with interest rate theory. That is, it is inversely related, and that the lower the interest rate, the higher the propensity to borrow and, this, conform with economic theory. In essence, the outcome Customer deposit (CD) to total loan (TL) was statistically significant. Similarly, the coefficient of determination as measured by R-squared indicates high variability of variables used. The fitness of the model is however confirmed by prob(F-statistic) at 0.000. The study conclude on the joint strength of the study as reported by the Panel ARDL and Hadriresult that banks need to seize international arena advantages in flexing their intermediation role.

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## Authors' Contribution

Babajide Abiola was responsible for proof-reading and editing the work.

Isibor Aregban was responsible for supervising the study and references.

Adedoyin Lawal carried out the introduction and literature review.

Okafor Tochukwu gathered the data, defined the methodology.

Okunlola Abiodun analyzed the data and did recommendations and conclusion.

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