

COVID-19 EMERGENCE AND IT IMPACTS ON THE NIGERIAN BANKS' SOUNDNESS

BY:

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ABSTRACT

*The paper investigated the impacts of Covid-19 Emergence on Nigerian banks' soundness. The regressor is Covid-19 Emergence measured by covid-19 aggregate confirmed cases (CACC), covid-19 aggregate newly confirmed cases (CANC), covid-19 aggregate confirmed death cases (CADC) and covid-19 aggregate newly confirmed death cases (CAND) while the regressand is Nigerian banks' soundness measured by Nigeria banks' capital base (CAR). The ex-post facto research design was adopted. Secondary data were collected from the Nigerian Center for Disease and Control (NCDC) report, World Health Organization (WHO) report, and the Quarterly report of the Nigerian Stock Exchange (2020-2021). Generalize Autoregressive Heteroskedasticity model was adopted using Econometric Views (E-views) 9.0. The results revealed that; CACC exerted positive significant impacts on the Nigerian banks' CAR while CANC have positive insignificant impacts on the Nigerian banks' CAR. Again, CADC have adverse significant impacts on the Nigerian banks' CAR. However, CAND exerted negative minimal impacts on the Nigerian banks' CAR. Hence, the paper concludes that though the emergence of Covid-19 pandemic in human history still did not make the Nigerian banks to be unsound even when the CADC had high adverse impacts on the Nigerian banks' CAR. This study therefore advocates that the apex bank must endeavour that banks are highly capitalized so as to hedge against unplanned economic downturns.*

**Keywords:** Covid-19 Emergence, Impacts, Nigerian Banks' Soundness

1.0 INTRODUCTION

In present business world, economies are interconnected in various facets in such a manner that there is hardly any economy that can stand on its own. The various cross-border friendships have overtime improved businesses and countries all over the world developing countries like Nigeria. The resultant effect is high foreign capital importations (Onuorah & Nnenna, 2013). However, the entrant of the pandemic late in 2019 changed everything from businesses within countries to cross-border partnerships.

Ehiedu, Onuorah and Okoh (2021) stated that the entrant of the epidemic affected virtually every sector of the economy, including banking sector. To stem the spread, governments all over the world, including Nigeria's overnment, have opted to lock down some sectors of the economy, restricting movement of people and products both within and beyond the country. Many businesses, particularly those unable to work from home, were forced to close as a result of the lockdown directives, while people and businesses providing critical services were allowed to continue operating (Iwedi, Kocha & Oriakpona, 2020).

The perceived effects of the pandemic on the economy increased public agitations on its impact on Nigerian banks' soundness (Onuorah, Odita & Kifordu, 2021). Low interest rates coupled with the pandemic's considerable impact

on Nigerian banks' soundness especially now banks have switched away from payment and technology industries and toward commission-based income. Evidently, Capital adequacy ratio (CAR) in Nigerian banks climbed by 14 percent in the first half of 2020, according to the National Bureau of Statistics (NBS) June 2020 report. Non-performing loans in Nigerian banks increased to ₦1.218 trillion (\$2.7 billion) from ₦1.059 trillion (\$2.4 billion) in December 2019. Malik, Waseem and Kifayat, (2016) added that, with the current rising rates of loans non-payment by bank obligors, constant drop in the prices of oil globally, foreign exchange shortages, plunging currency, low CAR rate, Nigerian decided to restructure their loan compositions.

Moreover, irrespective of the severity of the pandemic outbreak, studies on its impacts on bank soundness (CAR) in developing nations are still very few. Hence, this paper desired to fill this missing link. Specifically, this paper aimed to examine the impacts of COVID-19 Emergence (CACC, CANC, CADC, and CAD) on the Nigerian banks' soundness (CAR).

Furthermore, banking activities in Nigeria began formally in 1894 with the establishment and commissioning of the Standard Bank of Nigeria formerly called Bank of British West Africa Limited-BBWA now called first Bank Nigeria Plc. This became started operations in Lagos. In 1948, another bank was opened. This bank was named the British and French Bank for Commerce and Industry now called United Bank for Africa Plc. Worthy to note is that, these banks were not indigenous banks. Specifically, the first Nigerian owned bank (indigenous bank) called the Industrial and Commercial Bank was opened in 1929. However, the bank liquidated a year later (1930) and was bought over by Mercantile Bank 1931. Again, another Nigerian owned bank (indigenous bank) was opened in 1949. This bank was called the African Continental Bank. This bank unlike the first Indigenous bank was sustainable. More so, this period (1947 to 1949), was highly strategic in the Nigerian industry as it birthed the first indigenous agricultural bank called the "Nigerian and Farmers and Commercial Banks (Olokoyo, Worlu, Babatope, & Agbogun, 2022).

To further ensure that Nigerian banks meet up with international best practices, the apex bank opted for bank reforms. The two most strategic reforms in the Nigerian banking industry according to Oluduro (2015), are the reforms of 2004 and 2009. Specifically, the Nigerian banks' capital base (degree of soundness) was recapitalized in the 2004 bank reform from ₦2 Billion (\$45.05 million) to ₦25 Billion (\$56.31 million). As a result, most banks consolidated to meet up with the apex bank directives. This made the total numbers of banks to reduce to 25 banks as against 89 banks in operations before 2004. Another strategic gain recorded during this period is that, the apex bank (CBN) ensures that all Nigerian banks were automated and at the same time, the apex bank opened an online information sharing platforms for all bank customers. To ensure that, Nigerian banks are also highly liquid, the apex bank instructed that, banks should collect deposits from all government owned/public enterprises. Meanwhile, in the 2009 bank reforms birthed the establishment of Asset Management Corporation of Nigeria-AMCON. This reform unlike the 2004 reform was targeted at ensuring that, the Nigerian banking industry is liquid by reducing all toxic assets (non-performing loans). To achieve this, the apex bank ensures that AMCON finance

most of the ailing banks with ₦50 billion (\$11.26 Million) CBN funds and 0.3% of those earmarked ailing banks. This revitalized the Nigerian banking industry to a great extent (Ibude, 2022). Another strategic gain recorded during this reform is that, the apex banks instructed that, all bank reports follow the International Financial Reporting Standards-IFRS. Also, during this reform, the universal banking model was reviewed. Also, interest bank was birthed during this reform (Meteke, Ehiedu, Ndah, & Onuorah, 2022). Since then, the Nigerian banks recorded tremendous successes till the emergence of the pandemic which questioned the soundness of the banking industry. Hence, this research was conducted.

## **2. LITERATURE REVIEW**

### **2.1 Conceptual Review**

Covid-19 was found in Wuhan, China late in 2019. The pandemic has touched many sectors of human effort in recent years. The pandemic influenced not just the global public health services but also the banking industry. The Covid-19 epidemic is alarming because it will almost probably trigger a worldwide economic slowdown (Hope, Saidu & Success, 2020, Olokoyo, Worlu, Babatope, & Agbogun, 2022).

Despite the concerted efforts of governmental and nongovernmental agencies directed at curtailing the spread of the virus, the epidemic spreads still. This caused worries to bank authorities considering the fact the industry is critical to the economy (Addi, Benksim, Amine & Cherkaoui, 2020; WHO, 2020). Bai, Yao, Wei, Tian, Jin, Chen, and Wang (2020) explained the high degree of the spread of the pandemic shake the very existence of companies the entire world.

The term “bank soundness” is difficult to conceptualize since it is multi-facet in nature. In its simplest term, a bank is said to sound if it is able to perform its financial intermediation function even in the midst of both monetary policy and macro-economic shocks. More so, it is a situation whereby the banks are able to efficiently perform its basic functions without disruption (Lee Obim, Takon, & Mgbado, 2020).

The commonest measure of bank’s soundness is banks’ capital base. Usually, banks are expected to maintain a minimum regulatory CAR of 10% to 15% (Obim, Takon, & Mgbado 2020). To ensure that a bank’s capital suit its total risk profiles, the apex bank in most times take into account key risk parameters as well as each bank’s own capital base with a view to capture, quantify, analyze, watch, and manage the different forms of bank risks like. As a result, the apex bank may decide to prescribe a higher level of minimum capital ratio under the Pillar 2 framework, on that ground based. Meanwhile, a bank’s capital base under Pillar 2 rules ensures that banks to operate at a level much beyond the bare minimum. This is expressed as:

$$\text{Regulatory CAR} = \frac{\text{Qualifying Capital}}{\text{Total RWA (Credit RWA + Market RWA + Operational RWA)}}$$

Where:

RWA = Risk Weighted Assets. Notably, total risk-weighted assets cover both on and off-balance sheet assets based on the Standardized credit risk Approach.

### **2.2 Theoretical Underpinning**

This paper relied on the buffer Capital Adequacy theory. This theory stressed that undercapitalized banks are most likely to be faced with macroeconomic vagaries such as the recent pandemic than banks that are highly capitalized (Obim, Takon, & Mgbado, 2020). This is based on the notion that capital act as buffer against bank risk and that banks may desire to have high capital base to so as to reduce the likelihood of bank run. In view of this, the apex bank carryout out both on-site and off-site examination so as to ensure that banks minimum CAR is within the stipulated benchmark. As such, any breach of this requirement ma result to fine or possibly withdraw of license to operate.

### **2.3 Empirical Review**

Studies on COVID-19 emergence and bank soundness are relatively few though a handful of studies exist are centered towards the pandemic impact either on bank liquidity or profitability. For example, Omaliko, Amnim, Okeke, and Obiora (2021) studied the impacts of the COVID-19 emergence on bank liquidity (Liquidity Ratio) and profitability (Return on Equity). The study covered between 2018 and 2019. The study laid claim that COVID-19 emergence had a significant deterring impacts on Nigerian banks.

Demircuc-Kant, Pedraza, and Ruiz (2020) discovered that the pandemic impacted on banking activities both negatively and significantly. More so, the pandemic placed the industry in under financial pressure as it shake its asset base.

Using the data sourced from both China and USA on 1<sup>st</sup> March to March 25<sup>th</sup>, 2020, Nuhu (2020) reported that the pandemic emergence impacted on both financial and non-financial institutions negatively and that such impacts are very high.

Xinhuan (2020) reported that COVID-19 has a substantial impact on quoted Chinese banks and the financial market, resulting in the Chinese financial market remaining relatively stable in comparison to the overseas market despite the spread of the Corona Virus.

Covering from 2010 to 2019, Tesfaye (2020) discovered that the pandemic negatively impacted on banks' financial statement in the post-pandemic periods than in the pre-pandemic periods in Ethiopia.

Wakode (2020) investigated the impact of Covid-19 on a bank's credit exposure. The study used multivariate analysis. The study affirmed that the Covid-19 had a substantial impacts on bank performance.

Erdem (2020) affirmed that shows that the pandemic has a considerable negative impact on markets, with index returns falling and volatility rising.

Using the descriptive statistics, Iwedi, Kocha, and Onakpono (2020) reported that the Covid-19 emergence disrupted business, religious, social, educational, health care and banking activities in a highly significant proportion.

Hope, Saidu, and Success (2020) reported that the COVID-19 emergence impacted on the Nigerian business negatively. Again, Adegboye, Adekunle, and Gayawan (2020) found that the transmission rate of the pandemic is fewer than expected from January to April, 2020. More so, most firms were negatively heated by the pandemic emergence. Meanwhile, Adenomon and Maijamaa (2020) reported that the pandemic emergence made the stocks to be highly volatile.

**H0<sub>1</sub>:** CACC do not impact on the Nigerian banks' CAR significantly.

**H0<sub>2</sub>:** CANC do not impact on the Nigerian banks' CAR significantly.

**H0<sub>3</sub>:** CADC do not impact on the Nigerian banks' CAR significantly.

**H0<sub>4</sub>:** CAND do not impact on the Nigerian banks' CAR significantly.

## **2.4 LITERATURE GAP**

Studies reviewed above reaffirmed that studies of this nature are few. More so, none of the studies reviewed above categorized covid-19 cases into four areas but the present study did that. This study is therefore set to contribute significantly to literature in this area.

## **3.0 METHODOLOGY**

### **3.1. Research Design, Population, and Techniques for Data Analysis**

This paper patterned after the ex-post facto research design. For the purpose of this study, Covid-19 pandemic was measured by CACC, CANC, CADC, and CAND while the regressand is- bank soundness measured by CAR. These variables were sourced from the NCDC report, WHO reports, and the Quarterly report of the NSE (2020-2021). The study covered a year (12months, May, 2020 – May, 2021) through the aid of Monthly data. Data were analyzed using the Generalized Autoregressive Conditional Heteroskedasticity (GARCH) Model. The choice of this estimation technique is premised on the fact that this model is appropriate for capturing volatility. Hence, this model fits this study. Accordingly, aggregate bank data with respect to both Covid-19 and Bank soundness proxy was sourced.

### **3.2. Model Specification:**

This study modeled after the works of Omaliko, Amnim, Okeke, and Obiora (2021). However, the researcher did not capture the covid-19 pandemic proxies fully. Hence, the modified model is econometrically stated below:

$$CAR = \beta_0 + \beta_1 CACC + \beta_2 CANC + \beta_3 CADC + \beta_4 CAND + \mu_{it} \dots \dots \dots 1$$

**Where:**

- CAR = Capital Adequacy Ratio
- CACC = Covid-19 aggregate confirmed cases
- CANC = Covid-19 aggregate newly confirmed cases
- CADC = Covid-19 aggregate confirmed death cases
- CAND = Covid-19 aggregate newly confirmed death cases
- $\beta_0$  = Constant Value
- $\beta_1 - \beta_4$  = Parameter Estimates

$\mu_{it}$  = Error Term at time t

**Table 1: Variables Operationalization**

Symbol	Unit of Measurement	Nature of Data	Apriori Expectation
CAR	Bank capital bas	Monthly Data	Nil
CACC	Total monthly confirmed cases	Monthly Data	Negative
CANC	Total monthly newly confirmed cases	Monthly Data	Positive
CADC	Total monthly confirmed deaths cases	Monthly Data	Negative
CAND	Total monthly newly confirmed deaths cases	Monthly Data	Positive

Source: Researcher's Compilation (2021)

#### 4.1 Results and Discussions

##### 1.1. Data Analysis

Table 1 and 2 below accounts for both the descriptive statistics and correlation analysis:

**Table 2: Descriptive Statistics**

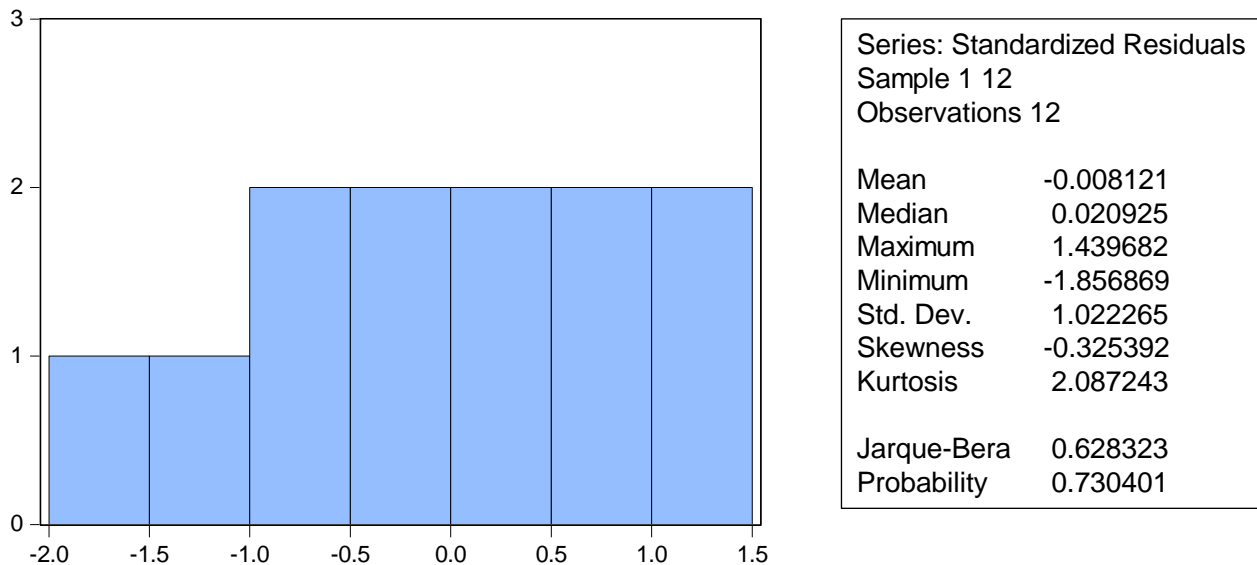
	CAR	CACC	CANC	CADC	CAND
Mean	13.76833	12936.42	2796.000	158.5000	61.00000
Maximum	17.00000	41394.00	7776.000	327.0000	134.0000
Minimum	12.07000	2040.000	407.0000	5.000000	18.00000
Std. Dev.	1.742985	11258.58	2292.832	110.1672	41.70023
Observations	12	12	12	12	12

Source: Eviews 9.0 Output 2021

Table 2 evidenced that, CAR, CACC, CANC, CADC, and CAND reported average values of 13.76833, 12936.42, 2796.000, 158.5000, and 61.00000 respectively. Meanwhile, all the target variables clustered around their mean values since their standard deviation values are relatively lower than their mean values.

Furthermore, CACC had the highest maximum and minimum values while CAR had the lowest maximum values.

More so, CADC cases had the lowest minimum values. This result is reaffirmed by normality test stated below:



**Figure 1-Normality Test**

Source: Eviews 9.0 Output 2021

Figure 1 above reported a P-value over 5% significant level signaling that the model is fit for prediction.

**Table 3: Correlation Matrix**

Study Variables	CAR	CACC	CANC	CADC	CAND
CAR	1.000000				
CACC	0.705899	1.000000			
CANC	0.277205	0.175165	1.000000		
CADC	-0.679396	0.342975	0.253022	1.000000	
CAND	-0.551427	0.640076	0.534432	0.751078	1.000000

**Source: Eviews 9.0 Output 2021**

Table 3 evidenced that CACC are positively correlated with CAR though such relationship is strong since its coefficient value stated at 0.705899 is positively signed and is higher than 70%. However, CANC have a positive weak correlation with CAR. More so, CADC and CAND have negative moderate correlation with CAR.

With respect to the relationship among study variables, none of the regressor exhibited high correlation. This signal the chances of multi-collinearity are low.

#### 4.2. Regression Results

Following the submissions of Alqaralleh (2020) and Ighosewe, Akan, and Agbogun (2022) that, theoretical nature of the VAR estimates may not be able to capture for monthly data, the study anchored on GARCH modeling. Meanwhile, the model was first subjected to ARCH Heteroskedasticity Test. The two regression results are presented below:

**Table 4: ARCH Heteroskedasticity Test (AHT)**

F-statistic	1.430705	Prob. F(1,9)	0.2622
Obs*R-squared	1.508791	Prob. Chi-Square(1)	0.2193

**Source: Eviews 9.0 Output 2021**

The AHT with p-value of 0.2193 affirmed that the model is fit for prediction. Premised on this, the main regression result is presented table 5 below:

**Table 5: Regression Estimation Result**

Dependent Variable: CAR  
 Method: ML ARCH - Normal distribution (BFGS / Marquardt steps)  
 Date: 05/10/22 Time: 19:33  
 Sample: 1 12  
 Included observations: 12  
 Failure to improve likelihood (non-zero gradients) after 64 iterations  
 Coefficient covariance computed using outer product of gradients  
 Presample variance: backcast (parameter = 0.7)  
 GARCH = C(6) + C(7)\*RESID(-1)^2 + C(8)\*GARCH(-1)

Variable	Coefficient	Std. Error	z-Statistic	Prob.
C	9.320034	3.093690	3.012595	0.0026
LOG(CACC)	0.467352	0.186226	2.509593	0.0121

LOG(CANC)	0.040042	0.566648	0.070664	0.9437
LOG(CADC)	-0.961729	0.467381	-2.057700	0.0396
LOG(CAND)	-0.061123	0.833187	-0.073360	0.9415

Variance Equation				
C	0.155473	0.560448	0.277409	0.7815
RESID(-1)^2	4.628733	5.422751	0.853577	0.3933
GARCH(-1)	-0.140528	0.678921	-0.206987	0.8360

R-squared	0.962302	Mean dependent var	13.76833
Adjusted R-squared	0.924563	S.D. dependent var	1.742985
S.E. of regression	1.680109	Akaike info criterion	3.925844
Sum squared resid	19.75937	Schwarz criterion	4.249115
Log likelihood	-15.55506	Hannan-Quinn criter.	3.806157
Durbin-Watson stat	2.051180		

**Source: Eviews 9.0 Output 2021**

The GARCH model reported  $R^2$  of 96.23% alongside its adjusted  $R^2$  of 92.46% shows the regressor (i.e. COVID-19 proxies) account for 96.23% of variations in regressand (i.e. CAR) while the error (disturbance) term is responsible for the remaining 3.67%. Meanwhile, Durbin Watson statistics stated at 2.051180 signaling that the model did not auto-correlate. However, the individual regressors were discussed in the next section.

**4.3. Discussions**

From table 5 and 6 above, CANC and CADC are highly significant though CANC increased CAR by 46.74% while CADC reduce CAR by 96.18%. The CANC and CAR nexus signals that even with the increased numbers of cases declared by the government, Nigerian banking industry were still sound. By extension, Nigerian banks are still strong enough to withstand macroeconomic vagaries even with the emergence of the pandemic. This reaffirmed claims to the findings of Nuhu (2020), Xinhuan (2020); and Wakode (2020) but deviated sharply from the submissions of Demirguc-Kant, Pedraza, and Ruiz (2020); Erdem (2020). Meanwhile, CADC and CAR nexus signals that the rising reported cases disrupted the CAR of the Nigerian banks more as it reported a negative impacts on CAR. As such, should the Nigerian government have not used policies to curb the further death of the populace due to the rising cases, most of Nigerian banks would have been under receivership. This study is supports Demirguc-Kant, Pedraza, and Ruiz (2020); Erdem (2020) findings but deviated sharply the submissions of Nuhu (2020); Xinhuan (2020); Wakode (2020).

Furthermore, CANC had minimal impacts on the CAR though such impact is direct. This signals that even with the rise in CANC, Nigerian Banks’s CAR still increased by 4%. This is in consonance with the expected result stated earlier but deviated from Nuhu (2020); Xinhuan (2020); Wakode (2020), Demirguc-Kant, Pedraza, and Ruiz (2020); Erdem (2020) findings.

Lastly, CAND had a minimal inverse impact on CAR. This signals that the rise in CAND caused the Nigerian Banks’s CAR reduce by just 6.1%. This findings concedes to the apriori expectation but deviated from Nuhu (2020); Xinhuan (2020); Wakode (2020), Demirguc-Kant, Pedraza, and Ruiz (2020); Erdem (2020) findings.



## **5. Conclusion and Recommendations**

With the emergence of Covid-19 in the global business space, most banks became highly susceptible to macro-economic vagaries. This to a large extent questioned bank soundness. This overriding issue necessitated us to looking at the effect of the pandemic (Covid-19) on bank soundness in Nigeria. To fully capture the trends of the pandemic, monthly Data on both the pandemic and bank soundness parameters was considered. Meanwhile, the GARCH model was adopted with a view to actually determine if the pandemic has asymmetric effects on bank soundness in Nigeria from 12 months, May, 2020 – May, 2021. The paper evidenced that, CACC exerted positive significant impacts on the Nigerian banks' CAR while CADC have positive insignificant impacts on the Nigerian banks' CAR. Again, CADC have adverse significant impacts on the Nigerian banks' CAR. However, CAND exerted negative minimal impacts on the Nigerian banks' CAR. Deducing from the GARCH model presented and discussed in the earlier, the study concludes that though the emergence of Covid-19 pandemic in human history still did not make the Nigerian banks to be unsound even when the CADC had high adverse impacts on the Nigerian banks' CAR. As such, the study advocates that:

1. The apex bank must endeavour that banks are highly capitalized so as to hedge against unplanned economic downturns.
2. To decrease the overriding adverse impact of CADC on CAR, the regulatory authorities must ensure that bank management must consider healthy precautionary measures in its business continuity plans.
3. Regulators of Nigerian banks must issue some proactive guidelines that are directed towards ensuring that ensuring that the rise in the newly death cases are reduced.

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