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RESEARCH ARTICLE

Empirical Investigation of Bank Survival and Agro-Production on Economic Resilience

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Abstract

The interaction between bank survival and agro production was used to investigate the extent of economic resilience. To achieve the general objectives of the study times series, data from the world bank data base and macro trends .net was sorted for the independent variables (bank survival, agro-production and capital formation) and the dependent variable (economic resilience) from 2013 through 2021. Different statistical test was conducted through the aid of econometric views version 9.0. The study found that BASU, AGPR, and CAPF has an insignificant influence on ECRE but only CAPF seem to have a positive relationship with ECRE. The study recommended that government authorities should facilitate additions to the fixed assets of the economy plus net changes in the level of inventories. The study suggested amongst others that: the variables of the study for further research should include other factors like inflation, exchange rate so on that impacts economic resilience; the time frame for subsequent research should be adjusted to reflect contemporary events and comparative analysis should be embark on say empirical analysis between Nigeria and some other west Africa or Africa countries.

Key Words: Bank survival; Agro-production; economic resilience

Introduction

Nigeria as an open economy is engaged in foreign trade. In its foreign transactions (import & export) of finished goods adequate finance is required. Financial institutions, banks in particular offers credits to various economy agent comprising individual, firms and government which they invest on productive activities. By providing credit to private enterprises and small firms, the banking industry in emerging nations contributes significantly to economic growth (Beck & Demirguc-Kunt, 2006; Hoang et al., 2022). The lack of necessary funds for corporate operations has a negative impact on output and, as a result, the economy. Economic development and growth, according to Aroghene and Akpoyibo (2023), are assessed by increases in the market value of products and services produced within a specific economy, as well as income per capita GNP. According to Obamuyi, Edun, and Kayode (2009), the sector's poor performance in Nigeria is primarily due to massive imports of finished goods and insufficient financial support for the manufacturing sector, which has contributed to a reduction in capacity utilization in the country.

Agricultural sector on the other hand has the potentials to provide benefits such as conservation, rural development as well as management of renewable natural resources. Despite the significant role played by the sector in an economy it is still without challenges like every other sector in the economy.

Years of poor management, inconsistent and poorly implemented government policies, government indifference, and a lack of basic infrastructure have all harmed the agricultural sector. Years of poor management, inconsistent and poorly implemented government policies, government indifference, and a lack of basic infrastructure have all harmed the agricultural sector. In view of Sabasi et al. (2021), the aforementioned would contribute to underproduction of food.

The role played by banks in any economy together with agriculture cannot be undermined. It is against this backdrop that the study investigated the interaction of bank survival BASU measured by Z score, Agro- production (AGPR) measured by Agriculture, forestry, and fishing, value added (% of GDP) and capital formation(CAPF) measured by gross capital formation (% of GDP) and economic resilience (ECRE) measured by per capita GDP growth in Nigeria.

For the purpose of the study the following research questions was raised:

1. Does bank survival (BASU) affects economic resilience (ECRE) in Nigeria?
2. Does Agro- production (AGPR) affects economic resilience (ECRE) in Nigeria?
3. Does capital formation (CAPF) affects economic resilience (ECRE) in Nigeria?

The research questions asked necessitated the following hypothesis in the null form:

HO1: Bank survival (BASU) does not have effect on economic resilience (ECRE) in Nigeria**.**

HO2: Agro- production (AGPR) does not have effect on economic resilience (ECRE) in Nigeria**.**

HO3: Capital formation (CAPF) does not have effect on economic resilience (ECRE) in Nigeria**.**

Literature Review

Conceptual framework

Bank Survival and Economic Resilience

Banks enhance a country's monetary advancement by facilitating the pace of capital arrangement, money and credit, and satisfaction of financial goals needed for economic growth. Access to finance is essential to set up a favourable atmosphere for the rate of development of enterprises. Economic growth is the sustained increase in per capita national output or net national product over a long period of time (Jones & Ndubuisi, 2023a). The objective of facilitating economy growth would not be achieved if there are disruption in the provision of financial activities in the economy. Hence the survival of bank operation is vital to the growth and development of any economy. Ehiedu, Onuorah, and Mbagwu (2022) described commercial survival as means of achieving an organization mission and vision.

Agro-Production and Economic Resilience

When the production possibility frontier of an economy shifts outward it is said to be experiencing economic growth of which accumulates in a country's resilience. Jones and Ndubuisi (2023b) asserted that economic growth is the increase in a country's productive capacity . Imene and Udjo-Onovughakpo (2023) opined that productivity in most firm has fallen as a result of recurrent conflict within an organization. Imene (2023) also acclaimed that

poor productivity and performance is as a result of inadequate evaluation system. As noted by Tochukwu (2012), Nigeria's economic future is not looking good due to the country's disregard for the agricultural sector and reliance on a monocultural economy centered around crude oil. In a similar vein, the agricultural sector is ideally situated to influence any country's pursuit of socioeconomic and industrial growth through its domains of activity at both the macro and micro levels. Low productivity levels and the agricultural sector's sluggish growth are thought to be the primary reasons behind emerging nations' low incomes and sluggish economic growth (Alston and Pardey, 2014).

Gross Capital Formation and Economic Resilience

Any nation's gross capital formation is made up of expenditures that indicate increases to the economy's fixed assets as well as net changes in the amount of inventories. Land improvements (fences, ditches, drains, and the like), the acquisition of plant, machinery, and equipment, and the building of roads, railroads, and similar structures, such as offices, hospitals, schools, and private residences, are examples of fixed assets. Stocks of goods kept by businesses to accommodate sporadic or unforeseen swings in production are known as inventories (World Bank, 2023). With adequate amount of capital, productivity of an economic would increase resultant in economic resilience of a country.

Empirical Review

Gardner (2000) found a significant positive relation between the growth in the value added per agricultural worker and national GDP per capita. Onuorah and Ebimobowei in 2012 affirmed that accountability and public sector financial management enhance growth. Spanos and Lioukas (2001) contributed that the focus of performance has shifted from industry to firm specific assets . Tsakok and Gardner (2007) examined four distinct nations over four distinct time periods to investigate if agricultural development has consistently been a prerequisite for additional economic transformation of a nation. They come to the conclusion that economies can change and grow without the need for a sophisticated and modern agriculture sector. Gollin et al. (2007) and Self and Grabowski (2007) contended that there is proof of a positive correlation between rising agricultural productivity and economic expansion. Musah (2008) indicates that organizational performance should be measured through various indicators depending on the organizational structure. Onuorah, Arubayi and Egbule (2020) stressed that employee relationship management has become imperative for competitive advantage and improves performance. Existant literatures has showed that certain strategies should be applied by firms/ organisation to boast their return on assets which will also impact inclusive growth (Onuorah, 2009; Onuorah, 2010 ; Anayochukwu & Onuorah, 2016; Ehiedu, Onuorah & Mbagwu, 2022).

Awokuse et al. (2009) used real export, agriculture value added per worker, gross capital formation per worker, and real GDP per capita as proxies in an effort to study the dynamic interaction between agricultural productivity and economic growth. They said that agriculture functions as an engine for economic development and is a key component of economic growth. People living in poverty can have better access to food and a better quality of life thanks to innovations in rural and agricultural finance (Kloeppinger-Todd & Sharma, 2010). Fatima, Khan and Arif (2017) opined that in emerging economies, the most influential side is the banking sector because banks providing the role of intermediary for trade and business transactions. Qamruzzaman (2017) assessed the relationship between institutional innovation and economic growth of Bangladesh and found that innovation either in a financial institution or financial market can influence economic growth. In order to measure organizational performance, Rezaei et al. (2018) proposed using a variety of indicators, including both financial and non-financial measurements. Finance is rooted on how well an institution uses financial assets to maximize value (Osiegbu, Onuorah & Nnmadi, 2010; Onuorah, 2011; Osiegbu & Onuorah, 2011).

According to earlier studies (Asaleye et al., 2020; Kaya & Kadanalı, 2022; Onyiriuba et al., 2020), financing for agriculture increases productivity. While the disruption caused by cash shortages affected consumer and corporate moods, financial development (FD) can boost industrial activity (Khemani & Kumar, 2022; Aroghene & Imene, 2023). Furthermore, green FD and green FD development (ED) have a positive correlation (Sadiq et al., 2022). Better financial systems are essential for effective economic growth (Wen et al., 2022). some studies examined foreign direct investment, gross capital formation and trade openness as factors that determine economic resilience (Dritsakis ,Varelas and Adamopoulos, 2006; Erhijakpor & Aroghene, 2023), of which was proxied by some researchers by Per capita GDP (Gardner ,2000; Awokuse et al , 2009) while some studies proxied bank survival by Z-score (Aroghene & Ikeora, 2022; Aroghene, 2022a; Aroghene, 2022b; Aroghene, 2023c).
From critical investigation of the aforementioned studies, each researcher used variables of particular interest and not all the investigation were done in Nigeria using specifically the present study variables. This study filled the gap in literature by using specifically per capita GDP as the dependent variable and Agriculture, forestry, and fishing, value added (% of GDP) and gross capital formation (% of GDP) to measure the independent variables.

Methodology

In order to account for the interaction between bank survival and Agro- production on economic resilience in Nigeria, the study employed Z- score, Agriculture, forestry, and fishing, value added (% of GDP) and gross capital formation (% of GDP) to measure the independent variables while per capita GDP annual growth rate was used to measure the dependent variable. Time series data for Nigeria was obtain from the world bank data base for the period of 2013 through 2021. Different statistical analysis was carried out to investigate the influence of the independent variable on the dependent variable using the statistical package Econometric Views version 9.0. The study model is stated as ;

$$ECRE = F(BASU, AGPR, CAPF) \quad \text{eqn (1)}$$

$$ECRE = b_0+b_1BASU+b_2\ AGPR+b_3\ CAPF+Ut \quad \text{eqn (2)}$$

Where;
ECRE = Economic Resilience
b_0 = the intercept
BASU = Bank Survival
AGPR = Agro- Production
CAPF = Capital Formation b_{1-}
b_3 = the coefficient
Ut = the error term

Results and Discussion

The data for BASU, AGPR, and CAPF were obtained from World Bank data base while ECRE was obtained from macro trends.net are presented below;

Table 1: Data presentation: Data for BASU, AGPR ,CAPF and ECRE

YEAR	BASU	AGPR	CAPF	ECRE
2013	16.3	20.8	14.9	9.12
2014	16.4	20	15.8	7.53
2015	16.8	20.6	15.5	-16.29
2016	16.4	21	15.4	-19.96
2017	18.4	20.8	15.5	-9.46
2018	14.8	21.2	19.8	9.47
2019	15.4	21.9	25.4	9.79
2020	13.6	24.1	27.5	-11.11
2021	12.2	23.4	33.8	-0.43

The results are presented and discussed as follows:

Table 2: Summary of Descriptive Statistics

Variables	Mean	Median	Maximum	Minimum	Std.Dev	Skewness	Kurtosis	JarqueBera Prob.
ECRE	-2.3711	-0.4300	9.7900	-19.9600	11.9983	-0.2462	1.4263	0.6006
BASU	15.5888	16.3000	18.4000	12.2000	1.8469	-0.4602	2.5821	0.8257
AGPR	21.5333	21.0000	24.1000	20.0000	1.3647	0.9424	2.5343	0.4933
CAPF	20.4000	15.8000	33.8000	14.9000	6.8898	0.9181	2.4057	0.4974

Source: Eviews Extract (2023)

From the summarised descriptive statistics in table 2, ECRE has a negative mean of 2.3711, max. , min., and Std. Dev. value of 9.7900 , -19.9600 and 11.9983 respectively. BASU has mean, max. , mini. and Std. Dev. value of 15.5888, 18.4000, 12.2000 and 1.8469. More so, AGPR has mean, max. , mini. and Std. Dev. value of 21.5333, 24.1000, 20.0000 and 1.3647. Likewise, CAPF, AGPR has mean, max. , mini. and Std. Dev. value of20.4000, 33.8000, 14.9000, and 6.8898. The values for the skewness shows that ECRE and BASU are negatively skewed but AGPR and CAPF are positively skewed. The value for the kurtosis showed that the variables are platokurtic. The Jarque- Bera Prob. values for all the variables indicated that the data set are normally distributed.

Table 3: Correlation Analysis

	ECRE	BASU	AGPR	CAPF
ECRE	1.000000			
BASU	-0.201293	1.000000		
AGPR	-0.109413	-0.824554	1.000000	0.893217
CAPF	0.150911	-0.897938	0.893217	1.000000

Source: Eviews Extract (2023).

Table 3 showed values of correlation of the variables. BASU and AGPR showed negative correlation with ECRE. While CAPF had a positive correlation with ECRE. The correlation values indicates that there existed weak correlation between the study variable.

Table 4: Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic 0.545840	Prob. F(3,5)	0.6721	
Obs*R-squared	2.220359	Prob. Chi-Square(3)	0.5279
Scaled explained SS	0.289769	Prob. Chi-Square(3)	0.9619

Source: Eviews Extract (2023).

The Prob. Chi-square (3) value of 0.5279 greater than 0.05 indicated that the variables of the study is homoscedastic. Hence the assumption of heteroskedascity of the variables is therefore refuted.

Table 5: Summary of Augumented Dicker-Fuller Unit Root Test

Variables	T-Statistics	Order of Intergration	Probability	Decision
ECRE	-3.284560	1(0)	0.0578	Stationary
BASU	0.591554	1(0)	0.9746	Non-Stationary
AGPR	-0.450937	1(0)	0.8533	Non-Stationary
CAPF	1.951757	1(0)	0.9985	Non-Stationary
		@ First Difference		
ECRE	-3.707583	1(1)	0.0036	Stationary
BASU	-3.953141	1(1)	0.0260	Stationary
AGPR	-3.259319	1(1)	0.0596	Stationary
CAPF	-0.276254	1(1)	0.5497	Non-Stationary

Source: Eviews Extract (2023).

Table 5 showed the values for the summarised Augumented Dicker-Fuller unit root test. In the table only ECRE was stationary at level and at first difference. BASU, AGPRand CAPF were stationary at first difference only CAPF was non stationary but at level and at first difference.

From the summarised regressed result, BASU has a negative coefficient value of 3.1586, t-Statistic of -0.595636 with prob. value of 0.5774. The coefficient depicts an inverse relationship whereas the prob. value confirm that BASU has an insignificant impact on ECRE. Similarly, AGPR, has a negative coefficient value of 11.0959, tStatistic of -1.5795 prob. value of 0.1751. The relationship is converse while the influence is insignificant. Also, CAPF possessed positive relationship with coefficient value of 1.4657 and an insignificant value of 0.4498. The R-square showed that 36% change in ECRE is explained by BASU, AGPR, and CAPF. The remainder of 64% could be accounted for by other factors that influence ECRE not included in the study model.

Table 6: Summary of Regression Results

Dependent Variable: ECRE

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	255.9004	175.9584	1.454324	0.2056
BASU	-3.158628	5.302953	-0.595636	0.5774
AGPR	-11.09591	7.024894	-1.579512	0.1751
CAPF	1.465678	1.788770	0.819377	0.4498
R-squared	0.362973	Adjusted R-squared		-0.019242

Source: Eviews Extract (2023).

Conclusion and Recommendation

From the analysis of the influence of BASU, AGPR, and CAPF on ECRE, the results showed that the regressors had an insignificant effect on the regress and only CAPF had a positive relationship with ECRE. The study recommend that government should facilitate additions to the fixed assets of the economy plus net changes in the level of inventories.

Declaration

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