



MANUFACTURING-AGRICULTURAL CONTINUUM AND ECONOMIC GROWTH IN SOUTH AFRICA AND IN NIGERIA: DOES FINANCIAL COMPOSITION MATTER?

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Abstract

This study examines the manufacturing-agriculture continuum and economic growth in Nigeria and in South Africa, focusing specifically on the financial composition of both economies. The objectives of the study are to evaluate the effect of the manufacturing-agriculture continuum on economic growth in South Africa and in Nigeria and to determine impact of financial composition on manufacturing-agriculture continuum in South Africa and in Nigeria. This study is guided by the population of two (2) countries of similar gross domestic product growth rate, which are South Africa and Nigeria. The period of study is from 1981- 2021, the study is limited to two countries which are South Africa and Nigeria. The study adopts a time series dataset from secondary sources, time series data is recorded over consistent intervals of time. The period of study is from 1981-2021(41years), in two (2) countries. The data would be sourced from World Bank Development Indicators (WDI,2021). To ascertain the impact of agriculture-manufacturing continuum on economic growth and the influence of financial structure on agriculture-manufacturing nexus in Nigeria and in South Africa, an ex-post facto research design would be employed and it will focus on the past trends, in order to examine the future. The study presents the pre-estimation summary statistics, the unit root test results and the associated correlation analysis results. Thereafter, the main empirical regression results and post estimation results are presented. The model 1 seek to establish if significant relationship exists between the continuum and economic growth, the result from various model show significant and positively related to gross domestic product growth rate. The model 2 seeks to examine the impact of financial structure on the continuum for economic growth in Nigeria and in South Africa. With the use of the following techniques: FMOLS, DOLS, ARDL and GLM, the results reveal that in Nigeria and in south Africa there is a positive and significant relation between the bank based financial system and the nexus. The above findings established the fact that the continuum of agriculture-manufacturing has relationship with gross domestic product and that the financial structure has influence on the continuum for sustainable economic growth in South Africa and in Nigeria. The outcome of the study suggests that a strong continuum of agriculture-manufacturing sectors will impact gross domestic product in Nigeria and in South Africa.

Keywords: Agriculture-manufacturing continuum, Financial structure, Economic Growth

1.0 Introduction

South Africa and Nigeria have enormous potential to drive economic growth through the transformation of the agriculture and manufacturing sectors. Thanks to rapid

population growth and its endowments with natural resources, large fertile farmland, rivers, wide range of crops. However, these abundant natural resources have not been translated into sustainable economic growth. The countries are

still suffering from food security problems perhaps due to the lack of commercialized farming, modern technological manufacturing processes, low productivity, adverse effect of climate change, unsustainable farming systems, low human capital, lack of government will and good policies to confront these challenges for economic growth. As a result, agriculture and manufacturing sectors, which should be mainstay of the economic growth in South Africa and in Nigeria have systematically declined and can no longer guarantee food security and massive employment capacity for the continuously growing population of these countries.

The food and agricultural organization (FAO, 2021) had endorsed that twenty-five (25) percent of government capital budget should be allocated to agricultural and manufacturing sectors to encourage growth and development. This has however, remain unachievable by the various administrations in South Africa and in Nigeria, thereby affecting projections of government programs and policies for these sectors (Iganiga and Unemhili, 2011) The maputo declaration has also remain breached, South Africa and Nigeria and they have consistently failed to allocate up to ten (10) per cent of the budget to agriculture and manufacturing sectors, hence negative implementation for food security.

Financial system is a set of institutions, such as banks, insurance companies, and capital market, that permit exchange of funds, between borrowers, lenders, and investors, exchange current funds to finance projects, either for consumption or productive investments and to pursue a return on assets. The financial system also consists of a set of rules used to decide which projects get financed, who finances projects and the terms of financial ideals.

Therefore, adequate agriculture and manufacturing financing by financial intermediaries is a very important instrument of economic sustainability in South Africa and Nigeria in order to stimulate economic growth.

The domination of the bank-based financial system in South Africa and Nigeria made it very important in financing agriculture and manufacturing sectors in order to acquire machineries, purchase land, hire labour, irrigation and construction of buildings and the right technologies. Furthermore, agriculture and manufacturing financing is mainly long-term that aims at inducing the agriculture-manufacturing continuum which could lead to economic sustainability, long-term foreign capital investment in form of bonds, foreign direct investment, portfolio equity investment, official development assistance.

1.2 Statement of the problem

Despite the acceptability of potential for growth of the agriculture and manufacturing sectors, much has not been said about the impact of the continuum of manufacturing-agriculture, and its contribution to economic growth in South Africa and in Nigeria. The reality of the connection between agriculture- manufacture continuum, as a vehicle for economic growth in South Africa and in Nigeria is tied to the fact that majority of the poor population who participate in the process of growing the economy are employed in subsistence agriculture. The manufacturing sector is incapable of generating enough employment and revenue for standard of living. This has led to wide spread poor quality of life as indicated by human development index. Nevertheless, in their quest for general improvement in these sectors, successive governments in South Africa and in Nigeria have attempted to promote investment in the agriculture and manufacturing sectors by employing various policies for easy access to funds through their Central Bank, specialized banks, commercial banks, investment banks and capital market.

It is against this backdrop that this study examines the effect of manufacturing-agriculture nexus on economic growth and the impact of financial composition on agriculture-

manufacturing continuum in south Africa and in Nigeria.

1.3 Objectives of the study.

- (1) To evaluate the effect of the manufacturing-agriculture continuum on economic growth in South Africa and in Nigeria.
- (2) To determine impact of financial composition on manufacturing-agriculture continuum in South Africa and in Nigeria.

1.4 Research questions.

Following the above discussed problem, the research questions for this study are presented as follows:

- (1) Why would manufacturing-agriculture continuum impact economic growth in South Africa and in Nigeria.
- (2) Why should financial composition impact manufacturing-agriculture continuum in South Africa and in Nigeria.

1.5 Research Hypotheses.

Based on these objectives the study developed the hypotheses in null form that:

H01: There is no significant relationship between agriculture-manufacturing continuum on economic growth in South Africa and in Nigeria.

H02: There is no significant effect of financial composition on agriculture- manufacturing continuum in South Africa and in Nigeria.

1.6 Significance of the study.

The purpose of the study is to provide more understanding of how agriculture-manufacturing continuum can influence gross domestic product growth rate and the importance of financial structure in driving the continuum for economic growth, food security and generate employment for-ever growing population of South Africa and Nigeria. The study would help the government, policy makers and regulators to know the current state of these sectors adopt policy that would encourage the growth of these sectors for economic growth. The study will also serve as a guide to future researchers on this subject.

1.7 Scope of the study.

The study examines the impact of agriculture-manufacturing nexus on economic growth and the impact of financial composition on agriculture-manufacturing continuum in south Africa and in Nigeria, for the period from 1980-2021 for the period from 1980-2021, forty-one (41) years.

1.8 Challenges of the study

During the course of the study, the challenges encountered are but not limited to time constraints, financial constraints, difficulties in obtaining relevant journals or published articles, and insufficient data collated for analysis and interpretation of results.

2. Conceptual framework

2.2 Theoretical review

The study is building upon certain theories on agriculture-manufacture continuum, economic growth and financial system.

2.2.1 Endogenous Growth Theory

The theory was postulated by Economist Paul Romer in the 1980s as an alternative to the [neoclassical growth theory](#). This theory states that for any country to experience economic growth, investment in human capital, innovation and knowledge are inevitable. The theory emphasizes why it's very important for both the public and private sector to motivate people to be innovative. The theory believes that diversifying an economy properly into non-oil sector is likely to influence the economic growth via the following three ways; performance of the agricultural sector, manufacturing sector and solid mineral (Oguweike, 2018).

2.2.2 The finance led growth theory

The contribution by Patrick (1966). Theory stated that the direction of causality between financial development and economic growth changes over time in the course of development. In fact, as a country develops, financial development is able to induce real innovation of investment before sustained modern economic growth get under way and as such growth occurs,

the supply-leading starts gradually become lesser important as the demand – following response becomes dominant.

2.3.3 Goldsmith (1969)

State the facts on financial structure and economic development, he found that in the course of economic development, a country's financial system grows more rapidly than national wealth. It appears that the main determinant of the relative size of a country's financial system is the separation of the functions of saving and investing among different groups of economic units. There is known fact of positive impact of financial intermediation on the economy in well-developed financial system that efficiently allocate capital within an economy fosters economy growth through channeling savings to investment in productivity sectors of the economy.

2.3 Empirical review

Kamil, Sevin and Festus (2017) Agriculture and manufacturing is a panacea for economic growth, that battle of economic growth is won and lost in these sectors.

Ademola (2019) Empirically assesses the impact of agricultural and manufacturing financing on the growth of Nigerian economy. The study revealed that the size and amount of credit available to agriculture of the total amount of credit granted by the government not been able to impact on the sustainable economic growth in Nigeria. This may be attributed to the fact the Country has recorded so much in terms of misappropriation of funds meant to be issued to the agricultural sector as credits for the improvement of the system. This also goes with the level of agricultural sectors output which maintained a positive but insignificant influence on the sustainable economic growth level of Nigeria.

The study conducted by Asukwo, Owui, Olugbemi, and Ita (2020) examined “The effect of Commercial Banks Lending on the Growth of the Agricultural Sector in Nigeria. The findings

revealed that there was a significant relationship between commercial bank lending and the growth of agricultural output, which has effect on the gross domestic product (GDP) and led to sustainable economic growth. The study recommended that banks should make efforts to grant agricultural loans at the appropriate time, and also, recommended that the rate of lending should not be more than single digit.

Sehrawat and Giri (2017) Changing from the traditional to modern methods, in production and processes of agricultural and manufacturing remains highly essential for economic transformation and development. Agriculture and manufacturing have two key characteristics which justify importance in economic development. First, agriculture and manufacturing, produces goods which directly satisfy the basic human needs in an economy. Second, agricultural and manufacture uses human effort for Nigerian economic growth.

Maftau (2003) argues that bank credit helps in reactivating, expanding and modernizing all types of agricultural enterprise, which are considered economically feasible and desirable to the achievement of stated economic goals of self-sufficiency in agricultural production.

3. Research methodology

3.1 Research design

To ascertain the impact of agriculture-manufacturing continuum on economic growth and the influence of financial structure on agriculture- manufacturing nexus in Nigeria and in South Africa, an ex-post facto research design would be employed and it will focus on the past trends, in order to examine the future.

An experimental investigation method would be employed; as exogenous variables would be introduced to investigate the behavior of the dependent variable. The experimental investigation involves the underlying assumptions of the research techniques, the techniques adopted, and the software technology used to produce the empirical results.

3.2 Population of study.

This study is guided by the population of two (2) countries of similar gross domestic product growth rate, which are South Africa and Nigeria.

3.3 Sample technique and sample size.

The period of study is from 1981- 2021, the study is limited to two countries which are South Africa and Nigeria.

3.4 Data and data sources

The study adopts a time series dataset from secondary sources, time series data is recorded over consistent intervals of time. The period of study is from 1981-2021(41years), in two (2) countries. The data would be sourced from World Bank Development Indicators (WDI,2021).

3.5 Model Specification

The implicit model form establishes the relationship between growth rate, agriculture-manufacturing continuum, bank credit to private sector, capital market, energy consumption per capita and research and development

$$lgdpgrt = f(lagrict*lmfgt, lbcpt, lmcap, lelpct, lrdt) \dots - 1$$

The above functional relationship is translated into an econometric equation as follows:

$$lgdpgrt = \alpha_0 + \beta_1agrict*mfgt + \beta_2bcpt + \beta_3mcap + \beta_4lelpct + \beta_5lrd + \mu t \dots - 2$$

Where:

lgdpgrt = Gross domestic product growth rate.

lagrict*lmfgt = Agriculture and Manufacturing continuum.

lbcpt = Bank credit to private sectors.

lmcap = Capital market.

lelpct = Electricity per capita.

lrd = Research and Development.

μt = Error Term.

$\beta_1 \beta_2 \beta_3 \beta_4 \beta_5$ = parameters to be estimated.

4.0 Results and findings

In this chapter, the study presents the pre-estimation summary statistics, the unit root test results and the associated correlation analysis results. Thereafter, the main empirical regression results and post estimation results are presented.

Table 4.2a Descriptive Statistics for Nigeria

	GDPGR	LAGRIC*L MFG	LBCP	LMCAP	LELPC	LRD
Mean	3.0692	584.6864	2.1704	22.7412	4.6327	28.1809
Median	3.9230	574.6780	2.1035	23.1556	4.5947	28.6396
Maximum	15.3292	659.9277	2.9757	25.1647	5.1814	32.4045
Minimum	-13.1279	505.0866	1.5990	18.6919	3.9299	20.4542
Std. Dev.	5.3224	52.8321	0.3502	1.8566	0.2859	2.90232
Skewness	-0.8433	0.1182	0.3331	-0.5528	-0.1387	-0.3926
Kurtosis	4.7402	1.4021	2.3788	2.2333	2.3566	2.4996
Jarque-Bera	10.2774	4.5660	1.4521	3.1674	0.8591	1.5173
Probability	0.0059	0.1020	0.4838	0.2052	0.6508	0.4683
Sum	128.9078	24556.83	91.1556	955.1285	194.5737	1183.598
Sum Sq. Dev.	1161.444	114440.7	5.0273	141.3281	3.3511	345.3259
Observations	42	42	42	42	42	42

4.1 Descriptive statistics for Nigeria

In the presented table 4.1a&b six variables have their descriptive statistics present in the tables, the maximum gross domestic product growth rate (GDPGR) occurred in Nigeria with 15.33% in 2004, while the lowest growth rate occurred in South Africa with -6.43% in...The continuum contribution to gross domestic product has the maximum in Nigeria with 659.93 billion in 1980 while minimum value also took place in Nigeria with 505.09 billion in... The bank credit to private sectors (BCP) has maximum occurrence in South Africa with 4.25 billion in... and the minimum occurred in Nigeria with 1.60 billions in 1990 Capital market has the highest amount raised in South Africa with 27.84 billion while minimum amount of 18.69 billion was in Nigeria in the year 2005 Energy consumed per capita has the highest consumption of 8.50kilowatts in South Africa in year...and minimum of 3.93kilowatts in Nigeria in year ...

The continuum in Nigeria has the highest standard deviation which suggests that the country has highest potential for the continuum contributing to the gross domestic product GDP if the agriculture and manufacturing sectors are properly position for sustainable economic growth than South Africa. However, the Jarque Bera statistics show that 5 and 4 variables accept the null hypothesis in Nigeria and in South Africa respectively, which means they are insignificant which suggest that the variables are normally distributed and 1 and 2 variables in South Africa and in Nigeria respectively reject the null hypothesis which means they are significant which suggest that the variables are not normally distributed. The implication of positive coefficient is that the continuum of agriculture-manufacture contributing to the growth of GDP.

4.1.1 DOLS The same result happened in DOLS, the nexus is positively related to GDPGR, bank based and market based are negatively and positively related to GDP respectively, and are insignificant in Nigeria while bank based and

market based are positively and negatively related to GDP respectively and are significant in South Africa. The ELCP is positively and negatively related to GDP in South Africa and in Nigeria respectively and research and development negatively and positively to related GDP in South Africa and in Nigeria respectively. The R-Square is 80% and 82% in South Africa and in Nigeria respectively.

4.1.2 ARDLs: The continuum is positively and negatively related GDP in South Africa and in Nigeria a respectively, bank based and market based is positively and negatively related to GDP in both countries and significant. ELPC is positively related to GDP in both countries and significant and RD is negatively to GDP in Nigeria and insignificant. The R-Square is 96% and 36% in South Africa and in Nigeria respectively.

4.1.3 GMM: The continuum is positive for both countries and insignificant in Nigeria, while significant in South Africa, bank based is negative and significant in Nigeria and positive and insignificant in South Africa, market based is positive for both countries, insignificant in Nigeria while significant in South Africa. Energy consumption per capital is positive and significant for both countries. The R-Square is 33% and 97% in South Africa and in Nigeria respectively.

5.0 Discussion of Findings

The model 1 seek to establish if significant relationship exists between the continuum and economic growth, the result from various model show significant and positively related to gross domestic product growth rate Kamil, Sevin and Festus (2017). This implies that the continuum contributes to the economic growth in South Africa and in Nigeria. The wald test conducted on the interaction between the nexus and financial structure showed that both variables are positively and significantly impact one another

for economic growth in Nigeria and in South Africa.

The model 2 seeks to examine the impact of financial structure on the continuum for economic growth in Nigeria and in South Africa. The result showed with the use of the following techniques: FMOLS, DOLS, ARDL and GLM reveal that in Nigeria and in south Africa there is positively and significant relation between the bank based financial system and the nexus, and GMM shows negatively and significant relation between bank based financial system and the continuum and the market based financial system are negatively and significant related to the continuum in FMOLS, DOLS, ARDL and GLM while GMM is positively and insignificant related to the continuum.

This implies that bank based financial system which is dominant in the financial structure of both countries can drive the continuum for economic growth in South Africa and in Nigeria. The market based financial system is incapable of driving the nexus of agriculture - manufacturing to impact on gross domestic product in South Africa and in Nigeria according to Ademola (2019).

5.1 Other Findings

5.1.1 Energy Consumption is positively but insignificantly links the nexus.

Energy consumption is positively but insignificant in South Africa and in Nigeria economies, therefore, this has limited the quality of energy supply, hence very low commercialization and industrialization of the agriculture-manufacturing continuum for sustainable economic growth in South Africa and in Nigeria.

5.1.2 Research and Development and the continuum

Research and Development has negative insignificant links to the continuum. This indicates that the weak level of technology influences on the continuum for economic growth.

5.1.3 Conclusion and Recommendation

The above findings established the fact that the continuum of agriculture-manufacturing has relationship with the gross domestic product and the financial structure influence on the continuum for sustainable economic growth in South Africa and in Nigeria. The out-come of the study suggests a strong continuum of agriculture-manufacturing sectors will impact gross domestic product in Nigeria and in South Africa. The bank-based financial system has positively significant in the continuum. Therefore, right government policies will go a long way to influence the nexus and bank based financial system to promote economic growth of both countries.

Other factors like energy consumption and research development also should be considered in order to improved and promote economic growth. The finding of the research shows that the quality of energy production and consumption is insignificant to drive the continuum for economic growth in South Africa and in Nigeria.

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