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NIGERIAN PORTS CONTAINER SHIPPING AND ECONOMIC GROWTH

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Abstract

The study x-rayed the recent year's activities of the Nigerian ports shipping industry between the periods 2008-2020 of the container throughput which basically infers the industrial/commercial activities in Nigeria economy. The researcher, in view to authenticate and further provide inferential evidence on the performance of shipping container trade and its impacts on Nigeria economic growth carried out this study using data series on recent container throuhput, gross domestic product and per capita for the periods of twelve years. Secondary sources of data were gathered from UNACTD and World Bank. Four research questions were hypothesized and simple regression and time series trend lines were used to analysis the data collected on this study. Trend line analysis was used to examine the behavour of container throughputs, Gross Domestic Product (GDP) and Per Capita for the periods under review. A simple regression analysis was applied to the time series data to examine the correlation, significance and relationship of the variables as stated in the hypotheses. Findings of the study revealed that there exists significant and positive relationship between container shipping trade and the gross domestic product as well as per capita. The regression equations of the analyses showed that increase in container shipping trade will give rise to increase in GDP and per capital which implies that container shipping trade has significant impact on economic growth of Nigeria. The researcher concludes that container shipping trade of Nigerian port industry strongly contributes to economic growth of the Nation. On the basis of these findings and conclusion, the researcher recommends that domestic industries should be encouraged through shipping policy

that will foster a free flow of shipping activities in Nigeria. The overall institutional setting in the economy should be improved upon in order to reap in full the benefits of shipping trade in Nigeria. Also, there is need to improve the poor transparency, under declaration and reduce corruption that appears to be endemic in Nigeria, and hence improve the gains from container shipping trade which has great benefit on economic growth.

Keywords: Container Shipping, Economic Growth, Nigerian Ports

1. Introduction

Shipping trade globally has for a long time been recognized as one of the strong catalysts for economic growth in most maritime nations around the world (Daniel, *et al*., 2012; Nwoloziri, *et al*, 2021). Shipping is a global activity which has existed for many centuries and in the recent time has become the most efficient means of intercontinental trade especial in the era of containerization. According to the European Conference of Minister of Transport (2001), Container shipping since its development has contributed immensely to the volume of world shipping trade. It has provided means through which industrial/commercial goods and services are handled and transported across nations.

According to the assumption of Adams Smith, in 1776, that "a business working in a country without links to the outside world can never achieve high levels of efficiency, because its small market will limit the degree of specialization" (Daniel, *et al*., 2012; Frank & Cyrus, 2001). This infers that maritime industry and shipping trade have provided link through which countries can expand their market shares and earn foreign exchange in the global market to enhance their economic growth and development. Maritime is one of the cost effective and efficient modes of transporting containerize cargoes over long distances across countries and continents, it has since the ancient time been at the forefront of opening up of the world, and thus a major driver of the process of globalization and economic development of Nations (Gius, 2009; Elem, 2008). Shipping, especially container shipping, has been both a cause and effect of globalization. Container shipping could lay claim of being the world's first truly global industry. In fact, container shipping could claim to be the industry which, more than any other which makes it possible for a truly global economy to function (Badejo, 2001). Maritime shipping trade connects

countries, markets, businesses and people, allowing them to buy and sell goods on a very large scales which previously was not possible without the use of containers.

2. Review of Literatures

Maritime shipping has always been referred to as the backbone of world trade and economic growth. It is estimated that over 80 percent of the world goods are shipped by sea with the growth of the world economy and volume of freight transported by sea (Psaraftis, 2021). In 2020, about 1.85 billion metric tons of cargos were shipped globally (Martin, 2022). It is not surprising that between 1980 and 2020, the global container fleet has grown rapidly in size and deadweight tonnage of container ships have drastically increased from about 11 million metric tons to roughly 275million metric tons, with a total capacity of over four million TEUs (Martin, 2022).

Seaborne trade continues to expand, bringing benefits for consumers across the world through competitive freight costs. The growing efficiency of shipping as a mode of transport and increased economic liberalization has fostered the prospects for industrial growth and economy of many nations continue to wax strong through export and import activities which generate revenues to nations. Outside the industrial/commercial activities of shipping trade, there are over 50,000 merchant ships trading internationally, transporting every kind of cargo; the world fleet registered in many nations are manned by over a million seafarers of virtually every nationality and the operation of merchant ships generates an estimated annual income of over half a trillion US Dollars in freight rates (Skorobogatova, & Kuzmina-Merlino, 2017), which contributes immensely to global and nations economic growth.

Generally, well-developed transport infrastructure ensures returns through certain macroeconomic drivers of productivity, such as “expansion of business activity, innovations, investments, labour market, competition, domestic and international trade global mobile activity, regional economic development, population wellbeing, environment safety, and health (Skorobogatova, & Kuzmina-Merlino, 2017). Container shipping is an important component of the maritime transport, and it accounts for a large part of world trade. Moreover, it is considered most efficient in the global maritime trade as a very important factor for attracting global capital development (Lane & Pretes, 2020).

Maritime transport is of great importance for the global economy, it highly affects economic growth and development as it accounts for around 80% of worldwide trade (Psaraftis, 2021). Maritime transport and its related activities have a great overall impact on the economy of nations, influencing a lot of industries, directly or indirectly. While container shipping is considered the cornerstone of global trade in the 21st century as many industrial goods are preferably shipped in container loads of two or forty feet equivalent units (Bai, *et al.,* 2021), and a lot of other industries rely heavily on maritime shipping trade, as an array of resources are transported to manufacturing centers. Maritime transport implies a wide range of activities and, together with port activities and logistic nodes, has a great impact on the development of the maritime sectors and trade, which in turn fosters economic growth and job creation in many nations of the world. Besides affecting economic growth and development, maritime transport has a great influence on sustainable development, as it is considered an environmentally friendly mode of transport (Psaraftis, 2021).

3. Aim and objectives of the Study

The aim of this study is to empirically determine the impact of container shipping trade on Nigeria economic growth. Specifically, the study intends to empirically ascertain the following:

1) To determine the relationship in trend line of container shipping trade and gross domestic product.
2) To determine the relationship in trend line of container shipping trade and per capita.
3) To determine the effects of container shipping trade on gross domestic product.
4) To determine the effects of container shipping trade on per capita.

4. Research Questions

Having stated the above objectives, the following research questions were relevant to the study:

1) What is the relationship in trend line of container shipping trade and gross domestic product?
2) What is the relationship in trend line of container shipping trade and per capita?
3) What is the effects of container shipping trade on gross domestic product?
4) What is the effects of container shipping trade on per capita?

5. Research Hypotheses

In order to give empirical answer to the research questions, the following hypotheses were formulated:

Ho_1: There is no significant relationship in trend line of container shipping trade and gross domestic product.

Ho_2: There is no significant relationship in trend line of container shipping trade and per capita.

Ho_3: Container shipping trade has no significant effects on gross domestic product.

Ho_4: Container shipping trade has no significant effects on per capita.

6. Significance of the Study

There is no gain saying the fact that the issue of shipping and economic growth is one of the most sensitive issues in Nigeria in the socio-economic and political sectors of today. One reason for the sensitivity of this issue is the scenario of abject poverty in the Land of surplus as is the case in Nigeria today. The reason for this boils down to the fact that every reasonable Nigerian is bothered about the economic imperialism brought about by the level of underdevelopment. The generation yet unborn is even saddled and sold to economic slavery because of the present level of poverty and penury.

A research on this sensitive matter will be of great significance to Nigeria public, especially, the governments, policy makers, maritime stakeholders, shippers, industrialists and scholars. The findings of this study will be imperative if implemented by governments, it will enhance growth and attendant effects in container shipping with economic growth as it is experienced in other developed world. The contributions made in this study can serve as basis for future study by researchers. The study would add immensely to the existing literatures for scholarly reference.

7. Method, Material and Result

The study employed secondary sources of data collected from UNCTAD and World Bank data base. The data collected for this study was analyzed using time series trend line and simple regression model in SPSS version 22. The researcher used regression analysis to determine the relationship between dependent variables, the gross domestic product and per capita of the Nigerian economy and independent variable, container throughputs of the Nigerian ports

industry.

Regression equation is given as y = a + bx.

Where,

y is the dependent variables

x is the independent variable

a is the intercept (y when x=0)

Hence, the formula for regression line is stated as

b= $r\frac{S_y}{S_x}$ a=$\gamma - b \underline{\times}$

Table1 Nigeria Container Port throughput, GDP & Per Capita 2008-2020

Year	Cargo throughput (tons)	GDP (US$)	Per Capita (US$)
2008	72500	339480	225910
2009	87000	295010	191160
2010	1232000	361460	228040
2011	1510900	404990	248760
2012	1723000	455500	272380
2013	1580000	508690	296150
2014	1700000	546680	309900
2015	1400000	486800	268750
2016	1404000	404650	217600
2017	1408000	375750	196860
2018	1560000	397190	202780
2019	1484000	448120	222990
2020	1528520	432900	209710

Sources: UNTAD (www.ceicdata.com) and World Bank (www.macrotrends.net)

The data presented on the table1 above shows the container throughput, Nigeria Gross Domestic Products (GDP) and per capita for the periods 2008-2020. The container throughput represents the container shipping activities in Nigerian ports. It accounts for the volume of container shipping trade that took place in Nigerian port within the periods 2008-2020. Gross Domestic Products (GDP) is amount in million USD of the economic worth of the domestic products in Nigeria which is a factor to measure the economic growth of the Nation. The per capita on the

other hand is a measure of economic growth of a nation. It tells about the economic strength of the individual citizens of the nation. The researcher intends to use this information to evaluate the relationship between container throughput of shipping activities of the Nigerian ports and each of the economic growth factors spelt out on this study, to inform if changes in container throughput affect changes in GDP and per capita of Nigeria nation.

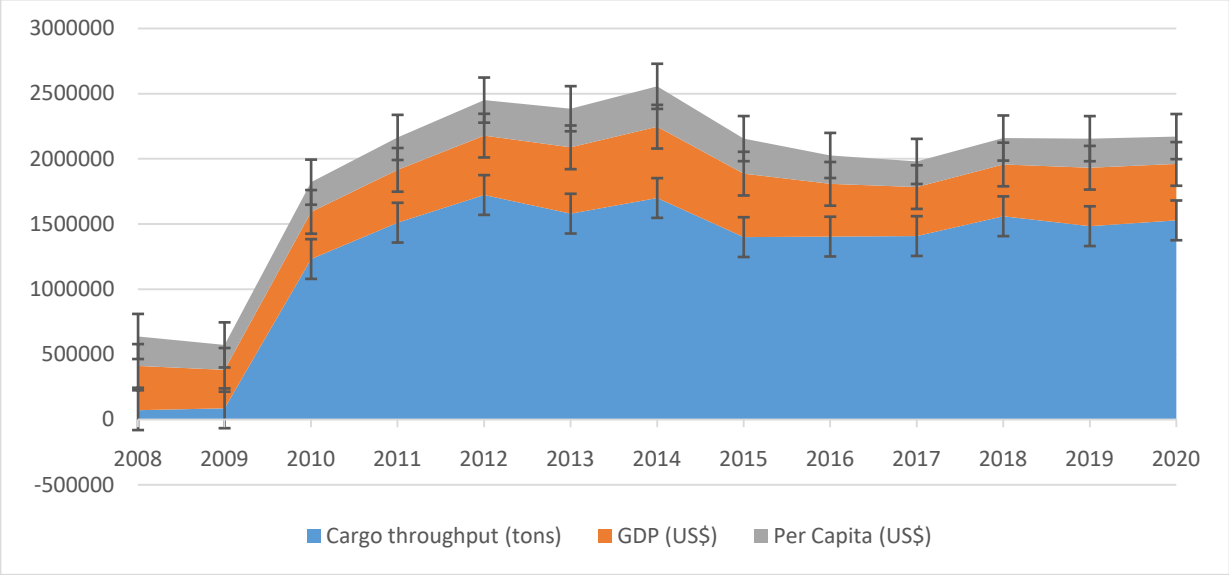

Fig1 **Trend line of Container Port throughput, GDP & Per Capita 2008-2020**

The figure1 shows the trend line of the Nigerian Ports container throughputs, GDP and per capital for the periods under review 2008-2020. The bars on the chart represent the activities in each year. This shows conformity in the behavour of the variables which implies that changes in shipping activities of container throughputs of the Nigerian ports affects the GDP and per capital of Nigeria economic growth. There is strong relationship between container throughput of the shipping activities of Nigerian ports and economic growth of Nigeria.

Model Analysis for container throughput and GDP

Model Summary

Model	R	R	Adjuste	Std. Error	Change Statistics

		Square	d R Square	of the Estimate	R Square Change	F Change	df1	df2	Sig. F Change
1	.744[a]	.553	.512	48986.146	.553	13.614	1	11	.004

a. Predictors: (Constant), Cargo_throughput

From the model summary table, the R value 0.744 represents correlation in the data series of the variables. It informs that there is a positive correlation between the predictor variable cargo throughput and dependent variable GDP. The R square value 0.553 infers that the independent variable could explain 55.3% variance in the dependent variable GDP of Nigeria economic growth, while 44.7% could be explained by the variable. However, 55.3% is a high value which means container throughput influences GDP and therefore, determines the economic growth of Nigeria economy.

ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	32668894391.575	1	32668894391.575	13.614	.004[b]
	Residual	26396067316.117	11	2399642483.283		
	Total	59064961707.692	12			

a. Dependent Variable: GDP

b. Predictors: (Constant), Cargo_throughput

The ANOVA table gives the F value of 13.614 at significance of 0.004. This implies that container throughput of the shipping activities of Nigerian ports industry significantly affect GDP of Nigeria economic growth.

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	297947.466	35706.856		8.344	.000
	Cargo_throughput	.095	.026	.744	3.690	.004

a. Dependent Variable: GDP

From the regression coefficient table, the constant of the regression is 297947 and slope is 0.095. Therefore, the regression equation for the dependent GDP is given as Y = 297947 + 0.095x.

Model Analysis for container throughput and per capita

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df 1	df 2	Sig. F Change
1	.444[a]	.197	.124	35844.452	.197	2.704	1	11	.128

a. Predictors: (Constant), Cargo_throughput

The model summary table gave the R value of 0.444 that explains the correlation between container throughputs and per capita a positive correlation which implies that changes in container throughput affect changes in per capita. On the other hand the R square value of 0.197 implies that the independent variable cargo throughput could explain only 19.7% of variance in the dependent variable per capita. That means about 80.3% could not be explained by the independent variable, it therefore implies that independent variable has no less little on effect on the dependent variable.

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3474675810.253	1	3474675810.253	2.704	.128[b]
	Residual	14133071758.978	11	1284824705.362		
	Total	17607747569.231	12			

a. Dependent Variable: Per_capita

b. Predictors: (Constant), Cargo_throughput

From the ANOVA table F value is 2.704 with the significance of 0.128. This suggest that p-value is higher than the 0.05 (95%) significance level. It then means that there is no significant relationship between the data variables of independent and dependent variables. Container

throughput of the shipping activities of Nigerian port industry has no significant impact at 95% confidence level on per capita as a factor of Nigeria economic growth. The finding simply suggests that there is a positive correlation that increase in container throughput would bring an increase in per capita and verse visa.

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	198033.286	26127.646		7.579	.000
	Cargo_throughput	.031	.019	.444	1.645	.128

a. Dependent Variable: Per_capita

The regression coefficient table output gives 198033.286 as the constant or the intercept and 0.031 as the slope of the equation. Hence, the dependent variable per capita Y= 198033 + 0.031x. Therefore, increase in container throughput of shipping activities of Nigerian port industry will effect growth in Nigeria economy by increasing the per capita.

8. Summary

This study on the evaluation of container throughput impacts on economic growth of Nigeria x-rayed data on contain throughput of the shipping activities of Nigerian ports industry, GDP and per capita of Nigeria economy for the periods 2008-2020. The GDP and per capita are the two factors for economic growth whereas the container throughput of the shipping industry is an economic activities of the maritime industry which could have effects on the economic growth of any nation. The research seeks to determine the relationship between the shipping activity of container throughput on GDP and per capita of the economic growth of Nigeria.

From the analysis of this study, the researcher could state the following as the findings of this study:

- There is positive relationship in trend line of container shipping trade and gross domestic

product of Nigeria economy. Therefore, the null hypothesis (Ho_1) there is no significant relationship in trend line of container shipping trade and gross domestic product is rejected.

- There is positive relationship in trend line of container shipping trade and per capita of Nigeria economy. Hence, the null hypothesis (Ho_2) there is no significant relationship in trend line of container shipping trade and gross domestic product is rejected.
- The container throughput significantly affects GDP, therefore, the null hypothesis (H_{03}) Container shipping trade has no significant effects on gross domestic product is rejected.
- The container throughput has no significant influence on per capita at 95% confidence level. Therefore, the null hypothesis (Ho_4), container shipping trade has no significant effects on per capita is accepted.

9. Conclusion

The study has shown a great significance of the impacts of shipping on economic growth of Nigeria. It is no gain saying that effects of maritime activities especially shipping has imperative influence on the global economy which this study has proven that Nigeria economy is no exemption. This study has informed that container throughputs of the Nigerian ports industry influence the GDP as well as per capita. This will encourage domestic activities which will enhance the flow of import and export container shipping trades in Nigeria economy. Container trade has demonstrated a great deal of its effects on Nigeria GDP and per capita given in the regression equations, which implies that increasing container trade will give rise to economic growth through increasing GDP and per capita of Nigeria economy.

10. Recommendations

Based on the findings of study, the researcher suggested the following recommendations:

- Domestic industries should be encouraged to produce goods and services that have international value which can be shipped to other countries as well as importation of foreign made goods which are needed in the country to ensure swift flow of container trade which has great positive influence on economic growth of the Nation.
- The findings of this study could call for policy reform in the shipping industry to ensure that policies are made to foster growth and quality shipping trade in Nigeria economic system to enhance economic growth.

- The findings of the study enlightens everyone on the overarching benefits of shipping activities to Nigeria economy, hence, Nigeria as a nation needs to develop its shipping industry, own vessels like other developed nations to facilitate movement of import and export goods into the country to earn more foreign exchange for the economic growth of the Nation.

REFERENCES

Badejo D. (2001): *Future of shipping in Nigeria*. A paper Presented at the maritime summit, February (20-24) at Abuja

Bai, X.; Zhang, X.; Li, K.X.; Zhou, Y.; Yuen, K.F. Research topics and trends in the maritime transport: A structural topic model. Transp. Policy 2021, 102, 11–24.

Daniel M. *et al*., (2012): Estimating the effects of the container revolution on world trade. School of Economics, University of Nottingham, UK

Elem R. (2008). Economic opportunities available in the Nigerian Maritime Sector. The Voyage Magazine by NIMASA April 2008 p.12

European Conference of Ministers of Transport (2001): *"Transport and economic development" Annual reports held in Paris on 29-30 March, 2021 pg 198. Available on https://www.itf.oecd.org*

Frankel, J., Romer, D. & Cyrus, T. (2001) Trade and growth in East Asian Countries; Cause and Effect: *NBER Working Paper5732 August.*

Gius O. (2009). Wet Cargo Lifting and the Nigerian Economy, Abuja. Being a paper presented at the Maritime Summit, February (24-26).

Lane, J.M.; Pretes, M.(2020). Maritime dependency and economic prosperity: Why access to oceanic trade matters. Mar. Policy 2020, 121, 104180.

Martin Placek (2022). Container shipping - statistics & facts. Transport & logistics. Available online at https://www.statista.com/topics/1367/container-shipping/

Nwoloziri, C.N., Nduisi, K.E., & Ebere, Nwabueze (2021). Evaluation of container shipments in Nigerian maritime industry. Volume 9, Issue 6, pp55-584. June 2021, ISSN 2320-9186. Available Online: www.globalscientificjournal.com

Psaraftis, H.N. (2021). The Future of Maritime Transport. In International Encyclopedia of Transportation; Elsevier: Amsterdam, The Netherlands, 2021; pp. 535–539. ISBN 9780081026724.

Skorobogatova, O.; Kuzmina-Merlino, I. (2017). Transport infrastructure development performance. Procedia Eng. 2017, 178, 319–329.