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Global Recession and Shipping Revenue Performance in Nigeria: A Focus on Covid-19 Pandemic

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ABSTRACT

The purpose of the study is to verify whether the recent health and financial crises popularly known as Covid-19 Pandemic has a positive or negative effect on the revenue performance of the shipping industry in Nigeria. It adopts a quantitative research method using a multiple regressions statistical instrument to analyze the secondary data. Results demonstrate the negative impact of the great depression on the world's economy and the covid-19 pandemic on the shipping subsector of the Nigerian economy. However, there was some evidence of growth during the great depression' and Covid'19 recession. This portrays the veritable nature and the resilience of the maritime sector in cushioning the drastic influence of the great depression and covid-19 pandemic on economic activities in Nigeria. The study highlights both the negative effects of economic recession/or depression and the necessary pathways for economic reorientation, reorganization, restructuring and recovery. It took a historical path to reveal some salient measures adopted in the century past towards addressing the financial crisis during the great depression and recession. More so, the study revealed that, during periods of recession, there can be evidence of economic growth as statistically shown by the performance of the Nigerian maritime sector, specifically during 2007/08 to 2009/10 and 2019/20 to 2021/22 periods. Therefore, the government should open up the maritime sector through public private partnership and implement robust trade liberalization programmes and grant more concessions of maritime infrastructures.

1. Introduction.

A period of recession may characterize a 'double-edged sword' whose effects are not only disastrous but deflate economic activities and growth. It creates ample opportunity for rejigging strategies, restarting new ideas, plans, budgets, tasks and business forecasts, policies and programmes, etc., in an organization or the State. Economic shocks or crisis-ridden times are periods for evolving new service development, NSD, (Hsieh, 2011). It is a compelling exigency that necessitates planning or restructuring an economy or organization to ensure expedited recovery after experiencing recession or economic depression-a worst or extreme form of recurrent and prolonged economic downturn.

According to Gnuschke (2010 ; 2004), and John (2002)' recession is a period of falling or declining economic activity lasting for few months, normally visible in real GDP, real income, employment, industrial production, housing market, and wholesale-retail sales. In other words, recession simply means negative GDP growth over the period of two quarters (i.e. six months) (Gnuschke, 2004; Tejvan, 2017). Muhammad et al., (2022) define 'global economic recession' as a significant decline in economic activity over a long period of time characterized by wavering or unstable conditions while Noko (2018) uses the words, 'slow down' and 'meltdown' of economic activities to describe the effect of recession on the economy. Gnuschke's definition of recession with respect to 'a short period of time' is in contra-distinction to the definition postulated by Muhammad et al., which covers 'a long period of time'.

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In this context, the study may not subscribe to the emphasis on 'time' but focuses on the miseries and woes associated with such economic downturns or crisis-ridden period. The term 'global recession' has no universally accepted definition (Kose et al., 2020), but, the phrase tries to explain the breadth and severity of economic hardships, health challenges, panics and trauma experienced globally during financial crisis.

It has been observed that the period of recession usually throws up nefarious challenges resulting to the winding up of companies/or businesses, an upsurge in the rate of unemployment, increase in prices of goods and probably services, reduction in household incomes, and virtually reduction in every facet of economic activity and negative growth. In such dire strait, nations are coerced to seek for bail out measures which comes in form of borrowings, grants etc. Developed countries like the UK and US had experienced recession and great depression as they occurred in 1980/1990s and 2007/2008 respectively (Alyssa, 2011; Steve, 2016; Tom et al., 2014). In Muhammad et al., (2022), weakened consumption activity, and weakened international trade and investments will lead to global economic contraction.

The effects of the different set of recessions and disappointingly, their slowly recovery pathways are causing a renewed vigor and interest in investigating the cyclical turns of the global economy. Studies affirm that eight different economic downturns (recessions) which occurred from 1853-1993(i.e. within a period of 40 years) and, their common and deafening denominators are; massive job losses, reduced rates of capital formation and decreased rates of inflation (however, not always for long). This study would have contested the reduced inflation rate factor if not for the addendum- being a negative phrase. The manifest conditions of the various recessions are best explained using fiscal and monetary policies, shocks to the economy usually from exogenous developments or extraneous factors and internal dynamics during the period of recession (George and Charles, 1993).

Shipping, according to (Drobetz, 2016; Romania, 2020) is defined as the transport of goods and passengers. We, rather consider this definition of shipping as being narrow. Therefore, the contracts of constructing/building new ships, repairs and maintenance of existing ships, sales of ships (old or new), chartering of ships and the transportation of cargoes and passengers from one port to another aggregate to mean shipping business. Presently, shipping business accounts for about 90% of global trade and the shipping industry's worth is up to USD 150 million (Drobetz, 2016). Shipping business has become the lifeline for socio-economic development in Asia-Pacific countries. It stands as the doorway to the global economy and substantive efforts have been made by these countries to maintain a functioning port system and protect transport and port workers.

However, the emergence of covid-19 pandemic led to a slowdown in maritime trade, reduction in shipping demand in maritime trade, reduction in demand for shipping, decrease in Port traffic and turnover (UN, 2020). Container shipping alliances among countries adopted several strategies in responding to the covid-19 recession- stoppage of services in designated routes, outright cancelling of port calling, and rendering of unstable shipping services. Meanwhile, such restrictive measures compounded port congestion and delays in loading and unloading of cargo, regional maritime supply chain and connectivity were temporarily broken or undermined (UN, 2020).

It is observed that reactions to containing the pandemic accelerated efforts for digitalizing the shipping subsector and a temporary reduction in emitting carbon dioxide. In resolving issues arising from covid-19 recession, a coordinated regional or global response is apposite to ensuring smooth operations of the global shipping supply chain, secure good health condition and safety for workers in the shipping industry. However, the port of Bristol - the eighth largest port in Britain was significantly regarded as 'importing port' but not affected by the crunch of the economic depression the same way it affected ports in London and Liverpool during the interwar period (Frank, 2003).

2. Review of Literature.

2.1. *General Effects of Economic Recession/Depression in the World.*

The period of recession is very unfriendly to both global and national economies. Steve (2016) argues that labour market performance in the United Kingdom during the 'great recession' was distinct from other continental Europe and the flexible labour market of the United States. The 2008 recession was marked 'great' because the financial crisis had deeper and more prolonged consequences than the 1980s and 1990s. Evidence is showing that every economic downturn necessitate an economic recovery plan to cushion the effect of unemployment by creating job opportunities and viable investments. In 2008 to 2014, the United Kingdom through viable policy measures created two million private sector jobs (Steve, 2016).

In contrast to UK's expansive macroeconomic policy, the Euro-zone countries were compelled to carry out ' internal devaluation policy' as the primary instrument for instituting structural adjustment. Steve (2016) defines internal devaluation policy as a definitive strategy to secure a fall in unit labour and prices towards improving the external competition of the economy. UK also countered the demand shock in domestic and international recession using Quantitative Easing (QE). This formula made the Bank of England to covert to QE and pumped a total of GBP 375 billion into the economy between 2009 and 2012. QE was implemented through the purchase of assets, especially government gilts and the policy was expected to boost the UK's economy by one to two percent.

Tom et al., (2014) examines the effects of the recent major recession and gradual recovery on County employment rates based in rural America which showed that, there was a six percent contraction in nonfarm employment and doubling of the existing national unemployment rate between 2007 and 2009. There were geographical variations in both the employment effects on the recession and the pace of job growth during recovery in metro and nonmetro countries and between more and less in rural nonmetro countries. The 'great depression' of 2008 was the most severe recession in the world because 82 percent of U.S. counties experienced job losses, though in varying levels of hardships. As a result, National nonfarm employment fell by 6.3 percent from its peak in January, 2008 to the nadir position in February, 2010.

Tom et al., (2014) identify the cause of the 2007-09 recessions as the collapse of debt -financed speculative bubble in real estate. The rise in housing prices was so rapid that cannot be linked to the increase in human population and income. Thus, housing price inflation was largely driven by speculation. As shown in the second quarter of 2006, the high rate of loan defaults portrayed that mortgage and credit card debt cannot be sustained. The acceleration of loan defaults over the subsequent two years precipitated the financial crisis of 2008.

Alyssa (2011) contends that the 2007 recession was the longest since it lasted for 18 months (i.e., it began in December, 2007 and technically ended in June, 2009). Among the several causes of the great financial crisis were; the banking system and oversight. Catanach et al.,(2010)opine that low-savings and low interest rates are factors which fueled the financial crisis in 2007/08. The 2007 financial crisis is also known as ' the Great Depression' sparked by the collapse of the U.S. housing market (Alyssa, 2011). Sweeny (2010) supports the view that small business enterprises are forced to wind up and at other points, owners of businesses are struggling to meet up with the unpalatable challenges thrown up by the financial crisis.

Giuliani (2021) discusses the comparative effects of the great recession that lasted from December, 2007 until June, 2009 and Covid-19 pandemic which occurred as a public health crisis in January, 2020. The great recession shook the U. S. housing market and mortgages, and caused the collapse of the Lehman Brothers for over a period of two years while, employment dropped in few weeks into the covid-19 crisis causing millions to lose their jobs in April, 2020. The effects of covid-19 pandemic affected the entire strata of the global society regardless of class or social status. The study done by Akinbobola and Bada (2018) showed that economic recession impact negatively on the standard of education in Osun State, Nigeria. Specifically, teaching process, motivation and student's academic performance were drastically reduced.

2.2. *Recession and shipping business in the World/Nigeria.*

According to Lutz et al., (2021), seaborne container trade has been growing since the 1990s with 90% of non - bulk dry cargo shipped by container globally. The working paper presented by Lutz et al., 2021) at Dallas posits that exports and imports of manufactured goods are the drivers of international trade which are transported by container ships. It is observed that, unlike the 'Great Recession', the major determinant of the economic contraction of the U.S. in the early 2020 was a sharp drop in domestic demand. Also, the recent recession (i.e. the covid-19 pandemic) caused an unexpected decrease in friction in the container shipping market. In 2009, the Global Recession Watch provided five highlights on the effects/or resolutions taken by countries (CBN, 2009);

1. African leaders sought USD 7 billion to boost trade and transport links in the continent.
2. Gulf single currency was the latest casualty of the global financial crisis in the Middle East.
3. Yen dropped to 5- month low as stock gained spur demand for yield in Asia.
4. U.S. stocks slide on banking concern.
5. Brown directed Heads of Financial Regulatory Authorities to implement G-20 plan for Britain.
6. Russian inflation rate was 5- month high on import prices.

In the words of Professor Albert, ' several changes took place in the ports subsector due to technological developments which have raised the tempo of competition between ports doing transport service'. Accordingly, ports, whether maritime, inland or river ports, are important pieces of infrastructure that carry out diverse services to customers/users - freight shippers, ferry operators, and private boats. The Roundtables document states that ports facilitate domestic and international trade good, usually in a large scale (OECD, 2011).

Modern world's existence and growth is largely dependent on maritime trade (Romina, 2020). It has been observed that, the shipping market is not insulated from cyclical changes, incidents, expansion as well as external factors (international trade, political and financial trends). Such unusual occurrences manifest as lowered freight rates, lowered rental prices, lowered prices of boats/ships which in turn reduce income and wages of workers in the maritime industry. Romina (2020) suggests measures to arrest such prevalent tide and grow the sector like; adopt crisis management skills, reorientation strategies, structural reorganization, encourage investments in transport facilities, enlarge and deepen the waterways leading to ports, build new port terminals, and refurbish and maintain existing ones. Crisis times in the shipping industry are propelled by unexpected industrial cycles and global economic dynamics. As such, predictions of the unforeseen cycles are more or less difficulty. These pressures compel shipping companies to wind up during recession (Pocuca and Zanne, 2009). In Belova and Micikiene (2015), crisis management measures are grouped into short-term and long-term methods. The short-term methods include, cutting down of administrative costs, downsizing the number of employees, and temporary reduction of worker's salaries, etc., while, the long-term strategies are, reduction of custom duties, other charges, develop new marketing/promotional ideas, and reorganize the cargo structure.

In Erick et al., (2020), the effects of the coronavirus worsen the outlook of GCE Blue Maritime cluster. Before the outbreak of the deadly virus, Blue Maritime Cluster's profitability and activities were growing and largely driven by the non-profit offshore segment. However, such expectations were drastically compromised during the crisis period. The cluster experienced a fall in revenue, and employment which amount to eight billion Nok in 2020 and further 20 percent decrease in total revenue, in 2021. Recession can lead to the collapse of exports and retards economic growth. This situation was experienced in the export-led economic growth of the four Asian dragons (Hong Kong, China; the Republic of Korea; Singapore and Taipei, China) (Hsieh, 2020). Economies of the four Asian dragons are function of the service sector, exports, manufacturing, and gross fixed capital formation and every economic shock provides an opportunity for new service development, NSD,(Hsieh, 2011).

According to Kose (2020), the world has witnessed four global recessions in diverse magnitudes (i.e., in 1975, 1982, 1991 and 2009). The common episodes during these crisis periods are; contraction in annual real capita global GDP which, in turn, weakened other key or relevant indicators of economic growth. The 2009 global recession is seen as the worst, deepest and most synchronized global financial crisis. Ma et al., (2020) argue that the health and financial (with reference to; the 1968 Flu; SARs, 2003; H1N1, 2009; MERS, 2012; Ebola, 2014 and Zika, 2016) indicate a three percent fall in real GDP growth of affected countries. Specific effects of economies affected are; decline in consumption, sharp drop in investments, fall in international trade and increase in unemployment rate.

Nigeria is one of the major countries in sub-Sahara Africa engaged in maritime business due to the favorable coastal endowment. The country is transverse by two major rivers- Rivers Niger and Benue whose waters flow into the Atlantic Ocean. Edih et al., (2022a) assert that Nigeria ought to harness such coastal comparative advantage. Shipping business has become the driver of economic growth and international competitiveness in the global maritime transportation sector (Edih et al., 2022a; Essoh, 2013; Omoke et al., 2019). Activities of private operators in the transport subsector have spurred cargo handling operations and transshipments across the globe. Container port development has a positive effect on economic growth (Zhang and Zhang, 2005), and methods of operations and marketing strategies of shipping firms affect their productive capacities (Mobolaji, et al., 2012). Shipping transport provides wider markets for distribution of goods and is cost effective (Ekpo, 2012). According to the World Bank (2005), Nigeria accounts for 55% of the total private sector investments in sub-Saharan African ports. Nigeria shipping industry also, accounts for 80% out of the 70% of goods transported to West and Central African region (UNCTAD, 2015).

The prospect of the maritime is hampered by some challenges/problems. Edih et al., (2022a) itemize some bottlenecks; poor funding, lack of maritime infrastructure, and unsecured water ways. In Imide et al., (2022) identified port congestion, delays in port calls, poor computerization of data, and high turnaround time for vessels as militating factors. Others are despair funding and infrastructural dearth in Nigeria Maritime University, Okerenkoko and Maritime Academy, Oron. In the words of Hadiza (2017), ' the maritime industry has the potential of galvanizing 80, 000 jobs every year for the unemployed. Also, the UN (2021) projects a 35% growth in maritime trade and carriage of goods by sea would multiply by 11 billion tons. To attain such feat, the Nigerian shipping sector requires about 50,000 seafarers (Peretomode, 2014). The positive effects of operations on the economy have helped to attain national interests (Obed, 2016). Maritime business is a viable option for economic diversification and development in Nigeria (Imide et al., 2022). The enforcement of trade liberalization policies to accommodate more private participation is recommended (Imide et al., 2022). A public-private partnership model will assist in raising funds for the upgrade of infrastructure in the ports (Edih et al., 2022a).

However, the advent of Covid-19 Pandemic disrupted economic activities across the world. The outbreak of the covid-19 virus was unexpected and the global and national economies were devastated. More so, the imposition of covid-19 protocols /measures like lockdown, movement restrictions, closure of both international and local borders, closure of educational institutions and other public places caused monumental damage to world's economy. Sea travels were bound and disrupted resulting to delays/ port congestion (Ozturk and Turan, 2020). The closure of Australia International borders prevented companies from employing foreign workers (Lowe, 2021). There were drastic reduction in international and domestic tourism, business travels as well as carriage by sea (Verikios, 2020). In 2020, ILO predicted about 24.7 million jobs would be loss while, OECD warned that the aftermath of covid-19 pandemic would be worse than the 2008 financial crisis (BBC News, 2020; Edih et al., 2022; Panayides, 2019). During the covid-19 crisis, port's delays resulted to cargo damage, breakdown of machineries, and unsafe environment (Prosertek, 2020). In Verikios (2020), the GDP of China and Korea recovered to 6.3% and 2.8% but were below the baseline while Australia's GDP fell by 19%. Accordingly, the economic contractions in the U.S., U.K., France, Germany, Canada, Japan and the rest of EU were -35%, -34%, -32%, -31%, -29%, -21% and -29% respectively in the second quarter of 2020.

2.3. Remote and Current Causes of Global Economic Recession.

In this study, some remote and current causes of financial crisis across the globe are looked into. According to Barry (2017), the 'great recession' and 'great depression' are two separate macroeconomic events/issues of the past century. Historically, the great recession occurred in 2008-2009 while the great depression wrecked the world's economy between 1929-1933- that was 79 years apart. Whether great depression or great recession, it amounts to varying degrees of collapse of the financial support systems of the world. It was argued that, ' the lessons from the great depression, 1929-1933, shaped the reactions and methodologies/programmes applied to rescue the 2008/09 financial crisis. Summarily, the result of the two global crises were collapsed of banks, collapsed prices, collapsed trade and collapsed economic activity paraphrased as 'the great macroeconomic catastrophe of modern times'. Based on previous occurrences and lessons, since failure to provide emergency liquidity led to cataclysmic banking and financial crisis, destructive deflation, and balancing of budgets which led to a global slump, the United States in 2008 adopted different policy measures - provision of emergency assistance to boost bank's liquidity, cut interest rates and expand Central Bank balance sheets and applied fiscal stimulus package to arrest the dwindling financial tide.

Omer and Alon (1984 as cited in Barry, 2017) identified some causes of recession traceable to; failure to anticipate and head off risks, failure to reflect on 'continuity bias'- referring to the subconscious tendency to believe that failure will assume or follow the relatively immediate past. Barry argues that, the policy of Deposit Insurance in sharp reaction to the experience of the 1930s cleared off the peril of bank runs and panics. Rejected arguments against stricter regulations because of the stability enjoyed for a long period in the 1920s, styled as the ' the New Era ' or recently, known as 'the Great Moderation'. Another cause was the great banking crisis of early 1933 which led to the failure of the Reconstruction Finance Corporation to rescue Henry Ford's Guardian Group of Banks (Vicker, 2011).

In similar vein, Muhammad et al., (2022) state some current factors that may trigger economic recession - Covid'19 pandemic, Russian-Ukraine war and the increase in benchmark interest rates by Central Banks across the globe. To quicken recovery, economists have suggested among others the use of monetary policy that will promote flexibility and balancing rules and regulations of the economy (Scoot, 2017 as cited in Muhammad et al., 2022). Indonesia government opened its tourism sector amidst Covid'19 pandemic through the issuance of free visa to intending foreigners. The underlying factor is to boost foreign exchange earnings of the country (Muhammad et al., 2022).

3. Research methods and data.

The study applied a quantitative research method and the multiple regressions analysis was used to analyze the secondary time series data which represent the revenue performance of the shipping industry for 2007/08 to 2021/22 fiscal years. The ordinarily least square regression (OLS) and the Engle -Granger Co-integration (EGC)were employed to test the variables at five percent (5%) level of significance. The sample of the study comprises the revenue output of the shipping industry in Nigeria for 2007/08-2021/22 period.

3.1. Definition of Variables.

Gross Domestic Product (GDP) is a parameter that measures the economic growth in a country for an identified fiscal year. In this study, the fiscal years are from 2007/08 to 2021/22.

Gross Registered Tonnage (GRT) represents the record of volume or capacity of ships used for grouping commercial vessels in maritime transport.

Total Tonnage of Cargo is known as port's throughput. It measures the amount of cargo or number of vessels handled for a period of time.

TRGDP is the total revenue to gross domestic product

TRGRT is the total revenue to gross registered tonnage

OSTP is operating surplus to tonnage ports throughput

OSOR is operating surplus to operating revenue.

3.2. Model Specification.

We adopt the model in Imide et al., (2022) and Osadume and University (2020) with slight modifications. In this model SRP(shipping revenue performance) represents GDP or TRGDP. SRP is a function of total revenue/gross registered tonnage, operating surplus/total throughput and operating surplus/operating revenues for 2007/08 to 2021/22 fiscal years. Therefore,

$$SRP = f(TRGRT, OSTP, OSOR) \tag{1}$$

$$GDP = f(TRGRT, OSTP, OSOR) \tag{2}$$

By econometric transformation, we have a multiple regressions model;

$$SRP_t = a_0 + a_1 TRGRT_t + a_2 OSTP_t + a_3 OSOR_t + e_t \tag{3}$$

$$GDP_t = a_0 + a_1 TRGRT_t + a_2 OSTP_t + a_3 OSOR_t + e_t \tag{4}$$

Where, SRP is shipping revenue performance

$\mathbf{a}_0$ is the intercept

$\mathbf{a}_2$-$\mathbf{a}_3$ are coefficients of the independent variables

t is the trend of time

$\mathbf{e}_t$ is the stochastic error in the model

$a_0, a_1, a_2, a_3 > 0$

3.3. Model Limitation.

Generally, econometric models help to capture the average behavior of the variables and the reliability of forecast or prediction from such models decreases during crisis period. This may be due to the relationships among economic variables and the impact of economic policies can vary in time of crisis. It presupposes that, there cannot be an accurate prediction or forecast of the behavior of variables used, especially in crisis times. The ripples of Covid-19 Pandemic caused a deepened shock to global economy and its effects can better be captured using demand and supply approaches (Claudia, et al., 2020).

3.4. A Priori Expectation.

We are expecting a negative and significant relationship between global recession (i.e. great depression and Covid-19 Pandemic) and revenue performance in the shipping industry while a positive and significant relationship between revenue performance and GDP growth.

4. Results and discussions of findings.

Data are presented and analyzed using three tables in subsection 4.1, and discussion in subsection 4.2.

4.1. Results.

This section demonstrates the presentation and analysis of data in three tables.

Table 1: Data showing Revenue Performance (raw stage), 2007/08-2021/22 fiscal years.

Yrs	Amt. realized (TR, Million)	Amt. Exp. (TE, Million)	Amt. Remitted (OS, Million)	GDP (Contrib. Millions)	GRT (million)	Throughput (Million)
2008	90,100	87,050	3,050	295,630	66.2414	42.394336
2009	98,250	94,120	4,130	301,540	75,8481	56,656,142
2010	101,050	95,030	6,020	339,848	106.6896	76.744,727
2011	115,020	105,140	9,880	374,099	122.6147	83.461,697
2012	136,010	125,200	10,810	405,441	129.5069	77.104738
2013	157,310	144,140	13,170	514,966	138.6722	78.281634
2014	172,800	154,770	18,030	568,499	156.0714	84.951927
2015	177,200	158,780	18,430	481,066	144.6152	77.387638
2016	182, 420	158,550	23,870	404,650	139.4065	70.819092
2017	265,600	255,290	10,310	375,745	137.4802	71.903266
2018	270,560	245,910	24,650	398,186	128.6718	73.175127
2019	277,680	248,960	28,720	446,543	131.8975	74.698136
2020	201,360	190,150	11,210	391,010	125.4876	70.245813
2021	223,010	201,090	21,920	401,020	127.5643	69.316715

Source: Nigeria Port Authority, National Bureau of Statistics and Central Bank of Nigeria Bulletins.

Table 2: Data showing Revenue Performance (processed stage), 2007/08-2021/22 fiscal years.

Yr	OSTP	TRGRT	OSOR	SRP/GDP
2008	71.944	1,360.179	0.03385	0.30477
2009	72.896	1,295.352	0.04203	0.32583
2010	78.442	947.140	0.05957	0.29734
2011	118.378	938.060	0.08590	0.30746
2012	140.199	1050.214	0.08590	0.33546
2013	168.239	1134.402	0.07948	0.30548
2014	212.238	1107.186	0.08372	0.30396
2015	238.152	1225.321	0.10434	0.36835
2016	337.056	1304.547	0.13085	0.45081
2017	143.387	1931.915	0.03882	0.70686
2018	336.863	2120.714	0.09111	0.67948
2019	384.481	2105.271	0.10343	0.62184
2020	159.582	1,604.621	0.0557	0.51497
2021	316.229	1,748.216	0.0983	0.55611

Source: Author's computation, 2023.

Table 3: Regression Tests Results (**(Dependent Variables: SRP/GDP)**.

Method: Least Squares

Variable	Coefficient	State Error	t-statistic	Prob.
C	0.1918	0.0420	4.5609	0.0198
TRGRT (1)	0.0002	4.9805	4.9744	0.0156
OSTP (-1)	0.0002	0.0003	0.8559	0.4549
OSOR	-2.0538	0.3041	-6.7531	0.0066
R-Squared	0.3909	Mean dependent var		0.3969
Adj. R-Squared	0.3817	S.D dependent var		0.1464
F-statistic	108.368	Durbin-Watson stat		1.9246
Prob (F-Statistic)	0.0015			

Source: Author's computation, 2023.

4.2. Discussion of findings.

The two hypotheses tested in the study are;

Ho1; there is no positive and significant relationship between global recession and the revenue performance of shipping industry.

Ho2; there is no positive and significant relationship between revenue performance and GDP growth in Nigeria.

Based on these hypotheses, secondary data were collected and presented in **Table 1** above. These raw data reflect the financial status for the period of assessment, 2007/08 to 2021/22 fiscal years. It shows the movement of cash (inflows and outflows) in terms of revenues and expenditures, amount paid into the national account, contribution to GDP and port's throughput and gross registered tonnage for the period. It is deducible from the figures that, there were increments in revenues, expenditures, remittance, GDP, GRT and throughput on progressive basis from 2007/08 to 2021/22 fiscal years.

The figures in **Table 2** are derivatives of **Table 1**. The OSTP figures (i.e, operating surplus divided by total tonnage per ton), the TRGRT figures (i.e, total revenue divided by total gross registered tonnage) while the OSOR figures (i.e., operating surplus divided by operating revenue). Table 2 explains the revenue performance of the shipping industry for 2007/08 to 2021/22 fiscal years. The total revenue contributions to GDP for the entire period stood between, 29.7% and 70.68%. Revenue contribution to GDP was lowest in 2010 at 29.7% and highest in 2017 at 70.68%. There were noticeably, three financial crisis periods in this assessment such as; 2008-2009/10(the period of great recession), the 2017/2018 financial crisis and lately, 2019-2021 global economic recession (Covid-19 pandemic). The total revenue contributions to GDP was 30.47% in 2008, 32. 58% in 2009 and 29.7% in 2010, and the TRGDP was 70.68% in 2017, 67.9% in 2018 while it was 62.18% in 2019, 51.49% in 2020(the peak of Covid-19 pandemic) and 55.61% in 2021.

The upward and downward movements in contributions to GDP are attributable to the global financial crisis and health pandemic. Most importantly, the impact of Covid-19 pandemic was felt in 2020 where the contribution to GDP dropped to 51. 49% from 67.94% and 62.18% in 2018 and 2019 respectively, but rebounds in 2021, symbolizing a process of minimal recovery. However, the positive impact of revenue performance of the shipping industry on the Nigeria economy helped to curtail or cushion the negative effects associated with the financial crisis and/or pandemics. Above statistics showed that the great recession and more pronouncedly, the Covid-19 pandemic negatively affected the revenue performance of the shipping industry for the period. It is concluded that global recession has a negative and significant effect on revenue performance of shipping industry in Nigeria. The studies of Ozturk and Turan (2020), Lowe (2021), Verikios (2021) and ILO (2020) among others support the position that global recession has a negative and significant effect on revenue performance of the shipping industry.

However, in **Table 3**, TRGRT (1) at lag 1 had a t-statistic value of4.974 and a p-value of 0.015 showing a positive effect on total revenue to GDP growth. It is significant at 5% since the p-value is behind 0.05. It is on this basis we reject the null hypothesis 2 and affirm that, there is positive and significant correlation between revenue performance of the shipping industry and GDP growth in Nigeria.Avalanche of literature complement this position (Hadiza, 2017; Obed, 2016; Omoke, 2019; Osadume and University, 2020; Zhang and Zhang, 2005) among others.

The adjusted R shows a 38.1% change in GDP growth due to investments in maritime facilities and the Durbin Waston statistics which is 1.924 means there is no autocorrelation. In conclusion, the F-statistics, 0.0014 is less than 0.05 demonstrates that, at least, one of the independent variables, TRGRT, OSOR and OSTP can significantly predict the effect(s) of the dependent variables, SRP and/or GDP growth.

Conclusion and recommendations.

In the study, we examined the effects of global recessions on shipping revenue performance in Nigeria. The sample of the study was the secondary series data which dramatizes the financial performance for 2007/08 to 2021/22 fiscal years. This period accommodated or witnessed two major global recessions; the great recession of 2007-2009 and the Covid-19 recession which span from late 2019 to 2022. In these periods of financial crisis, the global economy experienced common episodes of financial crunch, meltdown of economic activities and huge rate of unemployment due to winding up of companies and temporary layoff of workers. There was a drastic reduction in households and disposable incomes, trauma, panic and numerous deaths especially during the Covid-19 Pandemic which was both a health and economic crisis. Countries across the globe were compelled to design health protocols and economic strategies to recover from the scourging and terrible menace.

The review of previous studies suggest 15 recovery measures adopted or implemented by some countries among which are; deliberate creation of two million private jobs by UK government (Steve, 2016), use of expansionary monetary and fiscal policies to stimulate aggregate demand (Guiliani, 2021; Mohammad et al., 2022 ; Steve, 2016), implementation of internal devaluation policy and quantitative easing, QE (Steve, 2016), adoption of crisis management techniques (Romina, 2020), and encourage investments in sectors having comparative advantage (Imide et al., 2022 ; Romina, 2020), Others are; reorientation and structural reorganization of the economy (Romina, 2020), specific investments to improve maritime transport infrastructures (Romina, 2020), trade liberalization and PPP policy (Edih et al., 2022a ; Imide et al., 2022), economic stimulus packages (Barry, 2017;Verikios, 2020), provision of emergency liquidity, cut interest rates and expand bank's balance sheets (Barry, 2017), anticipate reoccurrence of recession and implementation of Deposit Insurance Programme (Barry, 2017) and avoid civil wars/International war-the Russia-Ukraine War (Mohammad et al., 2022).

Based on these findings, the following suggestions are recommended specifically, to improve and rebound the maritime transport sector in Nigeria;

1.Encourage investments in the maritime sector: there should be a deliberate policy and programme to invest in the maritime transport facilities and infrastructures in the country. We advise that, existing ports and terminals have to be refurbished and maintained for optimal use. Considering the comparative advantage of the coastal features/waterways, the need to establish new ports/build terminals cannot be overstated. This measure will eliminate port congestions and delays, turnaround time and create employment opportunities for the over 120 million population in the country.

2. Expand participation: it is clear that government by itself cannot handle the business traffic in the maritime transport sector in the country. Therefore, private participation has to be encouraged and supported by implementing policy that guarantees concessions of maritime facilities and declaring tax holidays and entering Joint Venture Arrangements - public private partnership, (PPP). It is another avenue for creating jobs for the unemployed and encouraging indigenous entrepreneurs and investors in the maritime industry.

3. Save in anticipation of another recession: in order to be armed with emergency liquidity during crisis, government is advised to 'save for the rainy days'. Since, pandemics and recessions are unpredictable and inevitable, short-term and long-term saving plan will help cushion the effects of financial crisis.

4. Boost manpower for the maritime industry: the human resource, talents and skills are central and indispensable in the management of ports and shipping activities on daily basis. The lack of personnel in the maritime sector is a grave impediment to optimal operations and performance of the industry. In such dire situation, the two maritime institutions; the Nigeria Maritime University, Okerenkoko and the Maritime Academy, Oron should have a 'special fund' to build infrastructure that will facilitate research and development(R&D), teach students, and train maritime workers. It is not out of place to collaborate with World Maritime University, Sweden and International Maritime Organization (being an agency of the UN) for special training and retraining of staff and post-graduate students in the maritime transportation sector.

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