A PERFORMANCE EVALUATION OF PRIVATIZATION REFORM

&

RELATED ECONOMIC EFFECTS IN NIGERIA.

[MARITIME & AVIATION GROUND HANDLING]

Louis Chete

Adebukola Daramola

Nigerian Institute of Social and Economic Research

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Acronyms and Abbreviations

ATT	Aircraft Turn-around Time
ABTL	Apapa Bulk Terminals
APMT	Apapa Container Terminal Limited
ATeWG	Assessment Technical Working Group
AMS	Associated Maritime Services
BPE	Bureau of Public Enterprises
CBN	Central Bank of Nigeria
CSR	Corporate Social Responsibility
DEA	Data Envelopment Analysis
DMUs	Decision Making Units
DFID	Department for International Development
DEA	Envelopment Analysis
FAAN	Federal Airports Authority of Nigeria
FGN	Federal Government of Nigeria
FMoT	Federal Ministry of Transport
FGD	Focus Group Discussions
GDNL	Greenview Development Nigeria Limited
MWUN	Maritime Workers Union on Nigeria
NBS	National Bureau of Statistics
NIWA	National Inland Waterways Authority
NUATE	National Union of Air Transport Employees
NAHCO	Nigerian Aviation Handling Company PLC
NCAA	Nigerian Civil Aviation Authority
NISER	Nigerian Institute of Social and Economic Research
NIMASA	Nigerian Maritime Administration and Safety Agency
NPA	Nigerian Ports Authority
NSC	Nigerian Shippers Council
ODI	Overall Distribution Index

PCHSL	Ports & Cargo Handling Services Limited
PIDF	Presidential Infrastructure Development Fund
QoS	Quality of Service
ROA	Return on Asset
ROE	Return on Equity
SAHCO	Skypower Aviation Handling Company PLC
SOEs	State Owned Enterprises
TCPC	Technical Committee on Privatisation and Commercialisation
ToR	Terms of Reference
USAID	United states Agency for International Development
VTT	Vessel Turn-Around Time

EXECUTIVE SUMMARY

Background and Methodology

The Federal Government of Nigeria (FGN) initiated a privatisation programme aimed at reducing the portfolio size of public enterprises in 1998. The first phase of the programme led to the privatisation of 55 public enterprises over the period 1989 to 1993. These included banks, cement companies and enterprises in the oil and gas sectors. The second phase of the programme covered 94 enterprises across various sectors of the economy, amongst which are port terminals in the maritime sector and ground handling companies (Skypower Aviation Company Limited and Nigeria Aviation Handling Company) in the aviation sector.

This study was inspired by the need to clarify mixed anecdotal narratives on the impact of privitisation on the Nigerian economy, ascertain the extent to which the programme achieved its intended goals, and leverage findings from this exercise to shape the future privatisation agenda of the government.

The first phase of this study covered privatized enterprises in the maritime and aviation ground handling sectors including affiliated unions and relevant regulatory bodies. Table 1.1 presents the respondents list for phase one.

The methodology was a mixed method approach, integrating document reviews, secondary data mining, survey data gathering, interviews and Focus Group Discussions (FGDs). The time dimension for the maritime sector was: pre-concession (2001-2005) and post-concession period (2013-2017) and for the aviation sector ground handling was: pre-privatization (2000-2004) and post-privatization (2013-2017). The field work was implemented in July 2019. A total of twenty-two enterprises were covered in the first phase of the study, including two aviation ground handling companies and twenty port terminal operators.

Main Findings for Terminals Operators

Efficiency

The efficiency effects of privatisation are measured through cargo throughput trends and shares and Vessel Turn-around Time (VTT), and Overall Distribution Index (ODI) of cargo. Cargo throughput experienced a steady climb in the pre-reform period, but gained upward traction from 2017. While throughput levels have been higher in the post-reform period, although declining and reaching the lowest volume experienced in 2016 during the economic recession.

In the post-reform period there is a more dispersed distribution of traffic among ports as seen in higher ODI values ranging from 0.80 to 0.88. Across all port complexes, average VTT reduced in the era of port reform.

The results of the Data Envelopment Analysis (DEA) shows that all the ports recorded higher efficiency scores in the post-concession period compared to the pre-concession period, with Tincan recording a significant increase from an average efficiency score of 0.29 in the pre-reform period where it ranked fourth, to a score of 0.87 in the post-reform period where it now ranks second. Warri ranked first, as the most efficient port in both periods, Calabar ranked sixth and was thus the least efficient port in both periods while Apapa ranked third in both periods.

The overall average efficiency score for all the terminals was 0.56 or 56 percent. Out of the 20 terminals for which analysis was conducted, nine had scores above the overall average. These include Apapa Bulk Terminal and ENL Consortium, which along with five other terminals were ranked best performers with efficiency scores of 100 percent.

Apapa has considerable input slack with respect to number of vessels calling at the port, indicating the need to further diversify traffic away from this busy port, if it is to become a more efficient unit.

Employment

The combined personnel strength of NPA and private terminal operators in the post-concession years is below the pre-concession figures on employment. There were 10,863 people employed by the NPA in 2005 (just before reform), by 2017, the combined number employed by NPA and private terminal operators was 9,875. Although this represents a slight drop in number employed, it equally reflects the fact that job losses were minimized. This was done through the instrumentation of the concession covenant which stipulated minimum number of employees to be retained by concessionaires.

Service Quality

On all the issues pertaining to Quality of Service (QoS) at the ports, a higher proportion of port users rated services as ‘good’ in the post-concession period compared to the pre-concession period. The lowest rating in the post-reform period was for ‘inspection regime’ and ‘physical access to ports’. Similar to the QoS assessment, the facility assessment also returned higher ratings for the post-concession period. Again the issue of road access to ports and road access within port areas had the lowest rating.

Financial Performance

The financial performance analysis for the period 2013 to 2017 shows that eight of the 16 terminals posted negative net profits while two did not have net profit data. The five profitable ones were Apapa Bulk Terminals (ABTL), Greenview Development Nigeria Limited (GDNL), Ports & Cargo Handling Services Limited (PCHSL), Associated Maritime Services (AMS) in Delta Port Complex and ECM Terminal Limited in the Calabar Port Complex.

AMS recorded the highest net profits in 2013-2017 of N13.18 billion, with Return on Asset (ROA) increasing from 4.46 to 9.06 and the Return on Equity (ROE) rising from 15.80 to 32.59 during the period 2013-2017. Apapa Port Complex made a total net profit of N15.8 billion in the period under review, with Return on Asset (ROA) climbing from 4.61 to 16.50 while the Return on Equity (ROE) surged from 9.35 to 22.40 during the period 2013-2017.

Revenue Generation

The highest ranking terminal in terms of revenue generation for the period under review was PCHSL, which accounted for 35.11% of total revenue generated. The least contributor to total revenue was AMS with 3.28%.

PCHSL made the highest contribution to government revenue in terms of taxes. GDNL ranks second in the payment of taxes to government amounting to N8.5billion. Both account for 7.4% of total revenue during the period.

Welfare

The focus group respondents noted that the NPA and Dockworkers branches of the MWUN enjoy good work conditions whereas working conditions were below average for the Shipping and Seamen/NIWA branches. With respect to job opportunities, the Union posited that the prospects for jobs in the industry were better prior to concession than now.

Main findings on Ground Handling Companies

In the aviation ground handling sector, data was predominantly available for the post-privatization period only. The discussion in this section therefore pertain to trends in number of employees, Aircraft Turn-around Time (ATT), aircraft loading/off-loading time, passenger processing time and volume of traffic in the post-privatization period (2013-2017).

Employment

The employment performance of NAHCO and SAHCO was rather erratic. The number of employees for the two ground handling companies for the period 2013-2017, with 2013 as base, showed a downward trend for SAHCO up to 2016, with an uptick in 2017. For NAHCO, number of employees declined in 2015, increased mildly in 2016, and accelerated substantially in 2017 as number of employees rose by 7.8 percent.

Efficiency

The trend in the volume of passengers handled by NAHCO and SAHCO fluctuated considerably. While NAHCO experienced 20 percent increase in passenger volume in 2015, which declined in 2016 and then rebounded in 2017, SAHCO started from a negative growth point (-44.8%) for passenger volume, recorded impressive growth of 53 percent in 2016, which dwindled by -36.8 percent in 2017.

Generally, there has been reduction in average time spent on virtually all the ground handling activity components in the post-privatization period. Luggage clearing and passenger boarding time per passenger remained at two minutes.

Financial Performance

Privatisation had positive impact on financial performance of NAHCO as the company experienced upswing in revenue and profit and most other service delivery parameters from 2014-2018. The

company paid taxes to the tune of N881 million to the government and invested N10 billion in infrastructure in the period; while asset turnover rose from 0.55 to 0.73. SAHCO financial data were not readily available but there was apparent improvement in the volume of business as evident from the apron/ramp utilization figures.

Recommendations

In order to ensure that private firms achieve more efficient performance, related government agencies such as NPA and FAAN should provide a conducive operating environment for firms' operations. Dilapidated Quay walls need major repairs at Tincan Island port, in addition, standard gauge rail connection can be extended to the Tincan port to ensure that it is not excluded from the competitive edge to be conferred by this intermodal connection. Road access to ports must be prioritized for repairs and traffic control by the Ministry of Transport. Airport infrastructure and equipment also need improvement to enable GHCs improve on the efficiency of ground handling services. Like airlines, GHCs need to be prioritized for incentives such as rebates and concessions in the industry.

Conclusion

This study assessed the reform/privatisation programme in the transport sector (Maritime and Ground Handling Companies). The overriding conclusion from the study is that the privatization exercise resulted in relatively improved efficiency performance of the relevant companies particularly in relation to cargo throughput levels, vessel turn-around time, port traffic, port terminal efficiency and average time spent on ground handling activities as well as in their financial performance, including revenue and profits and taxes paid to the government.

CHAPTER ONE
A BACKGROUND ON PUBLIC SECTOR REFORM IN NIGERIA

1.0 Background: Nigeria's Public Enterprises Reform

Following the dismal performance of State Owned Enterprises (SOEs) in many climes, countries have carried out varying degrees of reform of these enterprises in the last half century or more. State Owned Enterprises' reform are anticipated to yield positive impacts, including reduced fiscal risks by decreasing hidden subsidies and overstaffing and strengthening competition among firms and capital markets. In developing countries, SOE reforms began in the 1960s, prompted largely by poor operational and financial performance. Also known as public enterprises, SOEs have been multi-dimensionally problematic including poorly planned investments; politically influenced decision making; costly and inefficient application of public funds; increased budgetary burdens to the state; over-extension of government managerial capacity and diversion of credit and other resources from the private sector (Gugong, 2000 quoted in Adaramola *et al*, 2018).

1.1 Nigerian policy on privatization and commercialization

Flowing from the above therefore, the Federal Government of Nigeria (FGN) in 1998 initiated a privatisation programme aimed at reducing the portfolio size of public enterprises. Consequently, the Technical Committee on Privatisation and Commercialisation (TCPC) now Bureau of Public Enterprises (BPE) was established in 1988. The BPE derived its powers from the Public Enterprises (Privatisation and Commercialisation) Act of 1999 with the mandate to privatise, commercialise and restructure Public Enterprises on behalf of the FGN. During the first phase of the programme, 55 Public Enterprises were privatised in the period 1989-1993. These include banks, cement companies and enterprises in the oil and gas sectors. The second phase of the privatisation program involved larger and more complex enterprises in 94 public enterprises across various sectors of the economy, amongst which are port terminals in the maritime sector and ground handling companies (Skypower Aviation Company Limited and Nigeria Aviation Handling Company) in the aviation sector. During the process of reforming these enterprises, the BPE sought and obtained the support of the United States Agency for International Development (USAID), the Department for International Development (DFID) and the World Bank for both technical and financial assistance in implementing the reforms and strengthening its institutional capacity.

As at August 2018, the BPE had privatised 142 public enterprises across different sectors of the economy through various modalities such as core investor sale, liquidation, public offer, private placement, debt/equity Swap, asset sales and concession.

1.2 Rationale for the study

With the background of several years of implementing the privatization policy in various sectors of the economy, there is need to evaluate the performance of privatized enterprises and assess related sectoral effects. Have the objectives of the reform been achieved in the various sectors? and to what extent? Which of the sectors appear to have fared better under the privatization/deregulation reform? What lessons can be learnt from enterprise performance and sectoral effects in a regulated

and deregulated economic space? How can these findings be leveraged to ensure better performance of enterprises and optimise gains for the future? These are the rationale for the study.

1.3 Study Objectives

Broadly speaking, the study was designed to:

I. Undertake an evaluation of reform/privatisation programme of transport sector (Maritime & Ground Handling Companies), Cement, Oil & Gas and Hospitality sector on the economy.

More specifically, the study team set out to:

1. Determine employment effects of privatization in related sectors
2. Ascertain effects of enterprise operations on government revenue
3. Analyse the efficiency of privatized enterprises
4. Evaluate quality of service provided by them
5. Assess welfare provisions for their employees, and;
6. Undertake an analysis of enterprises' financial performance

1.4 Scope of Work

The study covers privatized enterprises in the maritime and aviation ground handling sectors in the first phase of the study, including relevant unions and associations affiliated with the sectors. Regulatory agencies of government relevant to the enterprise businesses were also covered. The list of enterprises, unions/associations and government agencies covered in the study are listed in Table 1.1

Table 1. 1: Enterprises, Unions and Government Agencies Covered (Phase 1)

Ground Handler/Terminal	**Core Investor/Terminal Operator**	**Year Concessioned/Privatized**
AVIATION		
Nigerian Aviation Handling Company PLC (NAHCO)	Share floatation	November, 2005
Skypower Aviation Handling Company (SAHCO) PLC	Skypower Aviation Handling Company Ltd	December, 2009
MARITIME		
Apapa:		
Apapa Container Terminal Limited (APMT)	AP Moller Terminals	19 September, 2005
Apapa Terminal A &B	Apapa Bulk Terminal Limited	24 October, 2005
Apapa Terminal C & D	ENL Consortium Limited	3 June, 2005
Apapa Terminal E	Greenview Development Nigeria Limited	24 October, 2005
Tincan:		
Roro Container Terminal	Five star Logistics Ltd	2 May, 2006
Tincan Island Terminal A	Josepdam Port Services Nig Ltd.	11 May, 2006

Ground Handler/Terminal	Core Investor/Terminal Operator	Year Concessioned/Privatized
Tincan Island Terminal B	Tincan Island Container Terminal Ltd (TICT).	11 May, 2006
Tincan Island Terminal C	Ports and Cargo Handling Service Ltd.	11 May, 2006
Rivers Port:		
Port Harcourt Terminal-A	Port and Terminal Operators Nig Ltd. (PTOL)	11 May, 2006
Port Harcourt Terminal-B	BUA Ports & Terminals Ltd.	11 May, 2006
Onne Port:		
ONNE FOT	INTELS Nigeria Ltd.	24 October, 2005
ONNE FLT-A	BRAWALS Oil Services Ltd.	11 May, 2006
ONNE FLT-B (INTELS)	INTELS Nigeria Ltd.	24 October, 2005
Delta Ports:		
Warri New Terminal-A	Associated Marine Services (AMS)	28 August, 2006
Warri Old Terminal-A & New Terminal-B	INTELS Nigeria Ltd.	24 October, 2005
Warri Canal Berth	Julius Berger Nigeria Ltd.	2006
Calabar Port:		
Calabar New Terminal	INTELS Nigeria Ltd	24 October, 2005
Calabar New Terminal B	ECM Nigeria Ltd)	May, 2007
Calabar Old Terminal	Shoreline Logistics	April, 2007
Unions/Associations		
National Union of Air Transport Employees (NUATE)		
Maritime Workers Union of Nigeria (MWUN)		
Government MDAs		
Nigerian Civil Aviation Authority (NCAA)		
Federal Airports Authority of Nigeria (FAAN).		
Nigerian Ports Authority (NPA)		
Nigerian Maritime Administration and Safety Agency (NIMASA).		
Nigerian Shippers Council (NSC)		
Federal Ministry of Transport (FMoT)		

Source: ATeWG Document Reviews, 2019

The time dimension for the study was 2001-2005 (pre-concession period for maritime) and (2013-2017) post-concession period for maritime. In aviation ground handling, pre-privatization data was for 2000-2004, while post-privatization data was for 2013-2017. The field survey was conducted in July 2019.

The second phase of the study covered enterprises in the hospitality and telecoms sectors as well as cement companies.

1.5 Study Approach: Design & Data Analysis

The study employed a mix method approach which combines document reviews, secondary data mining, survey data gathering, interviews and Focus Group Discussions (FGD). Research

instruments and protocols were carefully designed and defined, guided by the study Terms of Reference (ToR) to ensure credibility of data. The mix method approach facilitated triangulation of issues and objective interpretation of the data. Data analyses were done at the macro and micro levels.

Table 1.2 describes the research protocols for primary data gathering for different target respondent groups based on the study objectives.

Table 1. 2: Target Respondent groups and Research Protocols Deployed

	Study objective	Target respondent/data source	Data collection method	Analysis type
1	Determine employment effects of privatization in related sectors	Nigerian Ports Authority, NCAA FAAN Enterprises	Secondary data mining from NPA documents, Survey questionnaire for NCAA/FAAN/Enterprises.	Trends/ Growth in employment figures.
2	Ascertain effects of enterprise operations on government revenue	Enterprises	Survey questionnaire for enterprises.	Trends/growth in taxes
3	Analyse the efficiency of privatized enterprises	Enterprises	Survey questionnaire for enterprises	Change in KPIs Data Envelopment Analysis
4	Evaluate quality of service provided by them	Port users Airport users	Survey questionnaire for users	Descriptive analysis
5	Assess welfare provisions for employees, and;	MWUN NUATE	Focus Group Discussion (FGD)	Qualitative analysis of FGD
6	Undertake an analysis of enterprises' financial performance	Enterprises	Survey questionnaire for enterprises	Trends/growth in financial KPIs

The primary data obtained from ports and aviation ground handlers was subjected to descriptive statistical analysis as well as a non-parametric analytical procedure known as Data Envelopment Analysis (DEA).In order to enable probes of issues of concentration/diversion of traffic among the ports, an Overall Distribution Index (based on nodes) was conducted. Details of the data analytic techniques are included in the annexure as methodological notes.

Secondary data for the sectors were sourced largely from National Bureau of Statistics (NBS), Central Bank of Nigeria (CBN) and the Bureau of Public Enterprises (BPE). The analysis of macro level secondary data was basically descriptive in nature.

1.6 Study Team

The study team comprised resource persons from the Bureau of Public Enterprises (BPE), the Nigerian Institute of Social and Economic Research (NISER), and the National Bureau of Statistics. This inter-agency team formed the Assessment Technical Working Group (ATeWG) that carried out the study. Team members are listed in Table 1.3.

Table 1. 3: Assessment Technical Working Group (ATeWG) Members

	NAMES	ORGANIZATION
1	Louis Chete	NISER
2	Vivienne Edozie	NISER
3	AdebukolaDaramola	NISER

1.7 Study Limitations

In the maritime sector, pre-concession data was in a form different from the post-concession data, albeit available by ports and not by terminals. This is understandable as there were no private terminal operators in the pre-concession period. In the aviation sector, data for pre-privatization period was not available, as such data analysis for SAHCO/NAHCO was for the post-privatization period. There were also gaps in macro level secondary data as sector break-downs inclusive of transport sector was not available for some of the data provided, foreclosing interrogation along such lines. These constraints nonetheless, the research team optimized available data as much as possible to generate a meaningful output.

1.8 Structure of the Report

Subsequent sections of the report are structured as follows:

- Chapter two provides an overview of the transport economy in Nigeria.
- Chapter three discusses survey and secondary data findings on enterprises in the pre-reform and post-reform periods. These include operational data as well as financial data.
- Chapter four articulates some recommendations based on discussions and findings in chapters two and three.

CHAPTER TWO
OVERVIEW OF THE TRANSPORT ECONOMY

2.1 Transport Output Levels and Trends

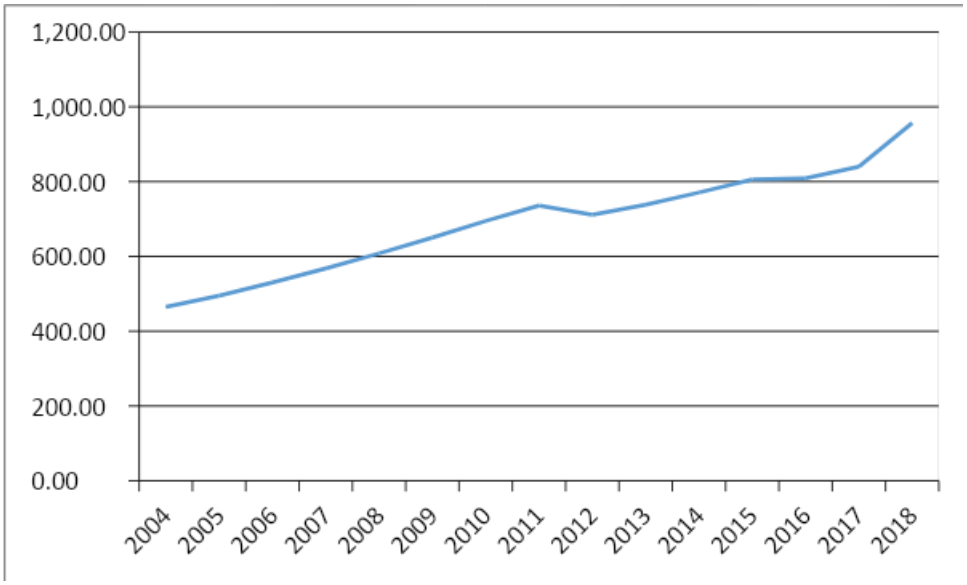
The transport sector in Nigeria encompasses road, water and air transport, rail and pipelines; transport services; and post and courier services. Table 2.1 and Figure 2.1 shows increase in transport GDP in monetary value terms from N465.19 billion in 2004 to N956.64 billion in 2018. This significant nominal uptrend reflects inflationary pressures in the economy. However, when normalized by Gross Domestic Product, the contribution of transport sector remained below1.5 per cent over the period 2004 to 2018. Specifically, the share of transport sector in GDP stood at 1.33 per cent in 2004, declined to 1.19 percent in 2012, and climbed to 1.37 per cent in 2018 (Figure 2.2).

Table 2. 1: Transport GDP

Year	Transport GDP	Real GDP	% share	% growth
2004	465.19	35020.55	1.33	
2005	495.13	37474.95	1.32	6.44
2006	529.99	39995.50	1.33	7.04
2007	567.51	42922.41	1.32	7.08
2008	607.81	46012.52	1.32	7.10
2009	650.21	49856.10	1.30	6.98
2010	694.77	54612.26	1.27	6.85
2011	736.24	57511.04	1.28	5.97
2012	711.08	59929.89	1.19	-3.42
2013	738.08	63218.72	1.17	3.80
2014	770.69	67152.79	1.15	4.42
2015	805.46	69023.93	1.17	4.51
2016	808.60	67931.24	1.19	0.39
2017	839.85	68490.98	1.23	3.86
2018	956.64	69810.02	1.37	13.91

Source: CBN, Statistical Database; National Bureau of Statistics

Figure 2. 1: Trend of total transport GDP

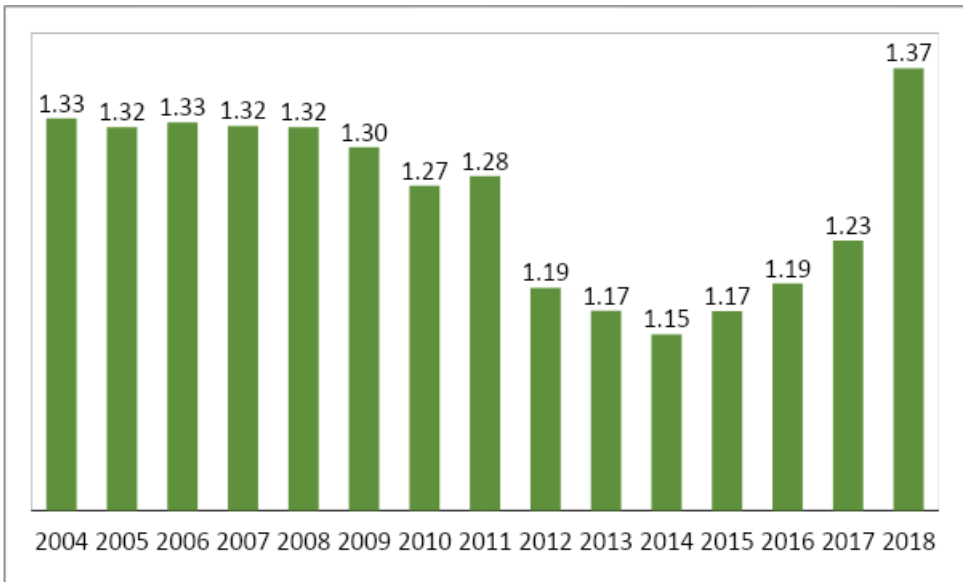


Source: CBN, Statistical Database

The contribution of transport to GDP kept rising in the recession years 2016 and 2017, up to 2018, mirroring the deliberate government policy of ramping up infrastructural spending to address historical neglect and decay of the country's infrastructure and also to strategically stimulate recovery from the recession. In general, the infrastructure sector, particularly the road and rail subsector has witnessed increased budgetary activity, although with a large injection of external funding in the last five years and through other funding mechanisms like the Presidential Infrastructure Development Fund (PIDF), Sovereign Sukuk Fund, as well as tax credit and other facilities from multilateral institutions.

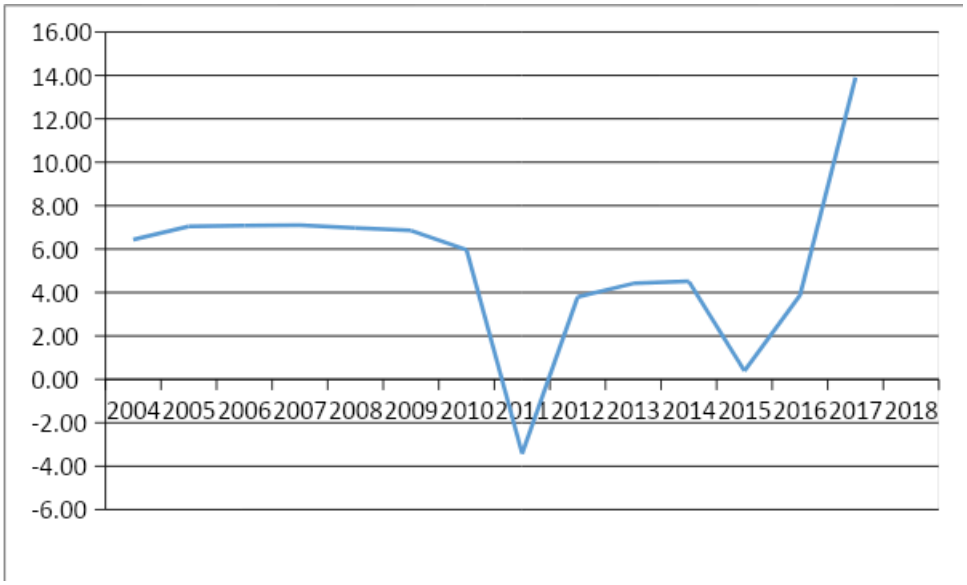
The growth rate of aggregate transport GDP has largely been good, hovering around 7 per cent from 2007 to 2010. Growth decelerated in 2011 to 6 per cent and became negative at -3.4 per cent in 2012. The swing back to positive growth of 3.8 per cent in 2013 and steady rise to 4.4 and 4.5 per cent in 2014 and 2015, was truncated by the oil price-induced recession, with transport GDP growth plunging to 0.4 per cent in 2016. As oil prices improved and the country exited recession, the government rekindled its commitment to infrastructural development, with sector growth rising to 3.8 per cent in 2017 and 13.9 per cent in 2018 (Figure 2.3).

Figure 2. 2: Transport share of GDP



Source: CBN, Statistical Database

Figure 2. 3: Growth rate of transport GDP



Source: CBN, Statistical Database

The trend of transport GDP components reported in Table 2.2 broadly mimics that of aggregate transport GDP as they increased over the years, except for post and courier services that fluctuated considerably. Although there was a slight dip for some components of transport GDP such as rail, air and services in the economically difficult years 2015/2016, the sub-sectoral GDP performance remained generally robust. The road subsector GDP has been particularly strong and consistently

incremental from 2006 to 2018 as has water transport. However, the fortunes of the post and courier services have been unstable as the subsector grappled with dwindling funding and relevancy in the wake of customers' preference for cheaper services provided by private transport companies.

Table 2. 2: Transport GDP and components (N' million)

Year	Total Transport	Road Transport	Rail Transport & Pipelines	Water Transport	Air Transport	Transport Services	Post and Courier Services
2004	465.19	415.91	0.08	3.01	21.42	16.08	8.70
2005	495.13	442.53	0.08	3.18	22.66	17.03	9.65
2006	529.99	473.40	0.09	3.37	24.37	18.07	10.70
2007	567.51	506.58	0.09	3.58	26.21	19.18	11.86
2008	607.81	542.20	0.10	3.80	28.20	20.36	13.16
2009	650.21	579.68	0.10	4.01	30.44	21.48	14.51
2010	694.77	619.14	0.11	4.23	32.67	22.65	15.98
2011	736.24	637.00	0.12	3.81	51.89	26.96	16.45
2012	711.08	601.85	0.15	3.75	54.10	33.39	17.83
2013	738.08	616.13	0.16	3.92	59.14	39.14	19.60
2014	770.69	639.30	0.17	4.26	60.87	44.69	21.39
2015	805.46	667.81	0.18	4.62	63.12	47.11	22.62
2016	808.60	679.31	0.18	4.69	60.05	46.58	17.79
2017	839.85	712.17	0.18	4.75	61.16	46.68	14.92
2018	956.64	815.24	0.18	4.88	73.81	47.60	14.93

Source: CBN, Statistical Database

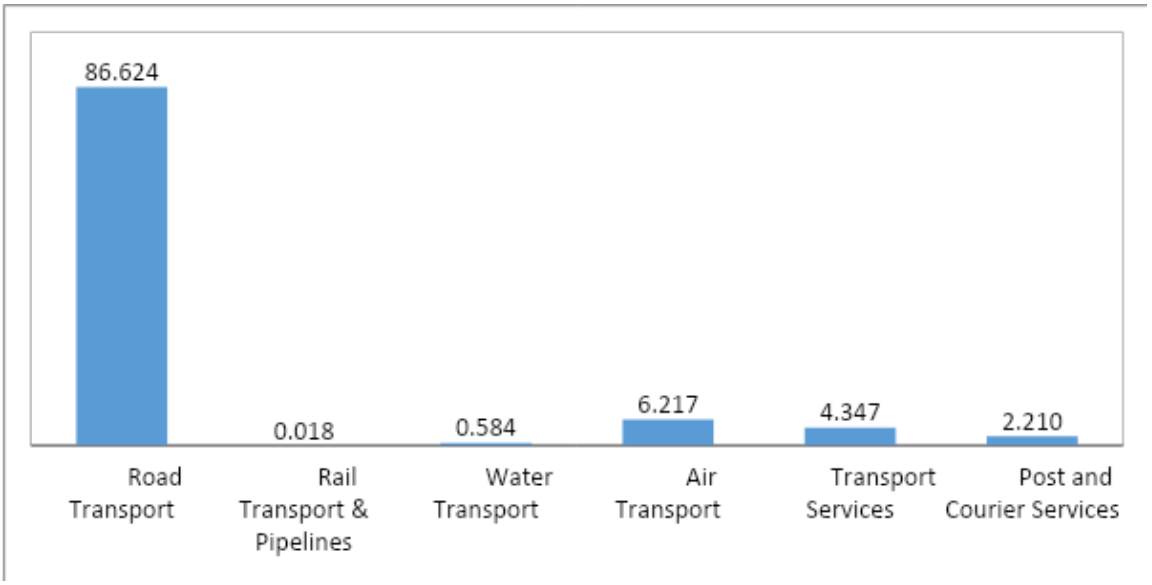
Table 2.3 shows that transport GDP is overwhelmingly dominated by the road transport, with average share of 86.6 per cent. Nigeria extensive transport network streches through urban, periurban and rural conurbations by land, sea and air. The three levels of government superintend over the country's transport system, with the state governments in charge of intra-state roads; the local governments, managing and regulating intra-urban and rural feeder roads, which constitute 60% of total road infrastructure; while the federal government supervises national highways (17% of overall road system), and also exercises responsibility over Inland waterways/river ports, sea ports, railways, airports and pipelines through designated agencies (FGN, 2010). For completeness, the shares of air transport GDP, transport services GDP and post and courier services GDP stood at 6.47, 4.48 and 2.26 per cent respectively, while water and rail transport GDP were a tiny 0.57 and 0.02 per cent respectively. Overall, the results show no dramatic changes in shares for the pre- and post-privatisation periods.

Table 2. 3: Average shares of transport GDP components (%)

Year	Road Transport	Rail Transport & Pipelines	Water Transport	Air Transport	Transport Services	Post and Courier Services
2004	89.406	0.016	0.646	4.605	3.456	1.871
2005	89.376	0.016	0.643	4.577	3.439	1.949
2006	89.321	0.016	0.637	4.598	3.409	2.019
2007	89.265	0.016	0.631	4.619	3.379	2.090
2008	89.205	0.016	0.624	4.640	3.350	2.165
2009	89.153	0.016	0.617	4.681	3.303	2.231
2010	89.114	0.016	0.608	4.703	3.260	2.300
2011	86.521	0.017	0.518	7.048	3.662	2.235
2012	84.640	0.021	0.527	7.608	4.696	2.508
2013	83.477	0.022	0.531	8.013	5.302	2.655
2014	82.952	0.022	0.553	7.898	5.799	2.776
2015	82.911	0.022	0.574	7.837	5.849	2.808
2016	84.010	0.022	0.580	7.427	5.761	2.200
2017	84.797	0.021	0.565	7.282	5.559	1.776
2018	85.219	0.019	0.510	7.716	4.976	1.561
average	86.624	0.018	0.584	6.217	4.347	2.210

Source: CBN, Statistical Database, NBS

Figure 2. 4: Average share of components of transport GDP, 2006-2018 (%)



Source: CBN, Statistical Database, NBS

Table 2.4 shows growth rate of transport GDP for the period 2004 to 2018. Overall, the transport sector recorded decent growth, averaging 6 per cent or more for all the subsectors between 2005 and 2010. Significantly, rail transport & pipelines, air transport and transport services experienced massive growth spikes in 2011 and 2012. However, growth declined steadily across all subsectors from 2013 until 2017, reflecting the economic recession that occurred around that time. By 2018, there was evidence of a recovery as growth surged especially for road and air transport subsectors by 14.47% and 20.70% respectively.

Table 2. 4: Growth rate of transport GDP (%)

Year	Transport	Road Transport	Rail Transport & Pipelines	Water Transport	Air Transport	Transport Services	Post and Courier Services
2004							
2005	6.44	6.40	6.30	5.90	5.80	5.90	10.85
2006	7.04	6.97	6.31	6.03	7.54	6.12	10.88
2007	7.08	7.01	6.32	6.04	7.56	6.14	10.89
2008	7.10	7.03	6.08	6.05	7.59	6.18	10.91
2009	6.98	6.91	5.75	5.66	7.92	5.47	10.24
2010	6.85	6.81	5.73	5.37	7.35	5.45	10.17
2011	5.97	2.89	13.04	-9.74	58.81	19.05	2.95
2012	-3.42	-5.52	20.56	-1.67	4.26	23.86	8.38
2013	3.80	2.37	8.72	4.50	9.32	17.20	9.90
2014	4.42	3.76	7.60	8.74	2.92	14.20	9.16
2015	4.51	4.46	2.67	8.45	3.70	5.41	5.72
2016	0.39	1.72	-0.65	1.40	-4.86	-1.12	-21.33
2017	3.86	4.84	0.80	1.25	1.83	0.22	-16.16
2018	13.91	14.47	2.86	2.87	20.70	1.96	0.09

Source: CBN, Statistical Database

Table 2.5 reports the dynamics of transport GDP growth in the period immediately prior to privatization and the post-privatisation period. Transport GDP growth averaged 6.74% between 2004 and 2006, edged up to 7.05% in the three years following privatization in 2006, but declined to 3.13 on average from 2010-2012. Again growth recovered slightly to an average of 4.24% in the period 2013-2015. With recession in 2016-2017, transport GDP growth collapsed to -2.13% on average. Significantly, as noted earlier, 2018 witnessed a strong rebound of growth by 13.9%.

Table 2. 5: Average growth rate of transport GDP

Year	Transport GDP	Growth rate	Average growth	Period
2004	465.19			
2005	495.13	6.44		
2006	529.99	7.04	6.74	2004-2006
2007	567.51	7.08		
2008	607.81	7.10		
2009	650.21	6.98	7.05	2007-2009
2010	694.77	6.85		
2011	736.24	5.97		
2012	711.08	-3.42	3.13	2010-2012
2013	738.08	3.80		
2014	770.69	4.42		
2015	805.46	4.51	4.24	2013-2015
2016	808.60	0.39		
2017	839.85	3.86	-2.13	2016-2017
2018	956.64	13.91	13.90	2018

Source: NBS and authors' computation

Table 2. 6: Average transport sector share of GDP

Year	Transport share of GDP	Average Share	Period
2004	1.33		
2005	1.32		
2006	1.33	1.32	2004-2006
2007	1.32		
2008	1.32		
2009	1.30	1.32	2007-2009
2010	1.27		
2011	1.28		
2012	1.19	1.25	2010-2012
2013	1.17		
2014	1.15		
2015	1.17	1.16	2013-2015
2016	1.19		
2017	1.23	1.21	2016-2017
2018	1.37	1.37	2018

Source: NBS and authors' computation

Table 2.7 shows that transport components generally recorded better growth performance after privatisation (2007-2018) relative to the pre-privatisation period (2004-2006), with rail, air and transport services recording some huge growth leaps in the intervening periods.

Table 2. 7: Average growth rate of transport components

Year	Total Transport	Road Transport	Rail Transport & Pipelines	Water Transport	Air Transport	Transport Services	Post and Courier Services
2004-2006	6.74	6.69	6.31	5.96	6.67	6.01	10.87
2007-2009	7.05	6.98	6.05	5.92	7.69	5.93	10.68
2010-2012	3.13	1.39	13.11	-2.01	23.47	16.12	7.17
2013-2015	4.24	3.53	6.33	7.23	5.31	12.27	8.26
2016-2017	8.89	9.66	1.83	2.06	11.27	1.09	-8.03
2018	13.91	14.47	2.86	2.87	20.70	1.96	0.09

Source: Authors' computation

2.2 Foreign Direct Investment in the Transport Sector

Table 2.8 provides insights on foreign direct investment in the transport sector. The behavior of capital importation to the sector has been erratic over the course of 2007 to 2019, with sharp increases in 2009 and 2012 to $50 billion and $74.5 billion, respectively; as well as steep declines in 2011 and 2013 to $264.9 million and $675.3 million, respectively. As expected, it trended down during the economic turbulence of 2015-2017, from a little less than $10 billion in 2015 to slightly below $3 billion in 2017. The recovery to $14.8 billion in 2018 and $24.6 billion in 2019 is remarkable. Despite the intermittent strong inflow of capital importation into the transport sector, its share of total capital importation into the Nigerian economy remained poor, peaking at 0.9% in 2009. Unfortunately, more disaggregated data showing FDI inflows to the ports/maritime and aviation sectors are not available.

Table 2. 8: Capital importation to transport sector

Year	Capital importation ($' million)	% of total
2007	13,465,740.03	0.141
2008	16,831,545.49	0.151
2009	50,010,097.00	0.877
2010	3,996,351.50	0.067
2011	264,935.00	0.003
2012	74,518,645.00	0.448
2013	675,287.07	0.003
2014	2,467,770.10	0.012
2015	9,992,827.00	0.104
2016	5,171,647.00	0.101
2017	2,979,965.00	0.024
2018	14,827,514.00	0.088
2019	24,596,524.90	0.105
		Average 0.163

Source: CBN, Statistical Database

2.3 Summary

This chapter describes the transport sector generally and its contribution to output, thus providing a broad contextual background for discussing subsequent research findings. The study is however focused specifically on the maritime and aviation sectors. Subsequent sections of the report therefore narrows down to reflect this focus.

CHAPTER THREE
TRANSPORT SECTOR ENTERPRISES EVALUATIONS

3.0 Transport Sector Reforms

The reform of the transport sector was in the form of concession for port terminal operators while the ground handling companies were privatized. SAHCO was privatized through a core investor arrangement and NAHCO through share floatation. Concessions in the maritime sector range from 10 to 25 years. Both sub-sectors (maritime and aviation ground handling) are evaluated in this chapter. As much as data permits, there are comparative analyses for pre and post reform periods.

3.1 Maritime Sub-Sector

3.1.1 Employment Trends and Effects

In the pre-concession period, employments in the maritime sector related mostly to NPA. The average annual number of people employed during this period was 12,304 (Table 3.1). This reduced drastically by 67 percent in the post-concession period as average annual employment by NPA fell to 4,040. This drop was expected, given the concession of ports to private terminal operators.

Table 3. 1: Employment in the Maritime Sector

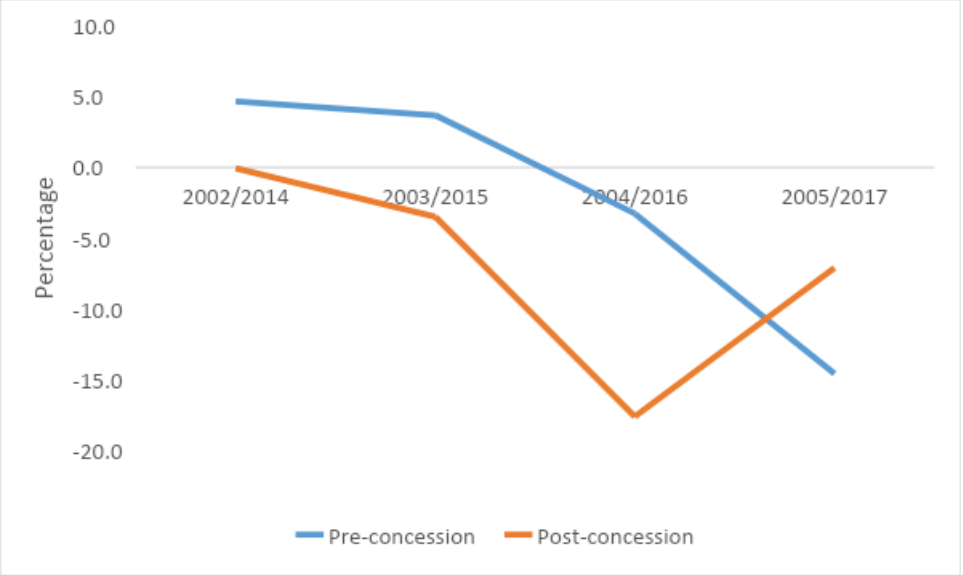
Year	Number of Employees		
	Pre-concession		
	NPA	Private terminal operators	NPA&Private terminal operators
2001	12,116	-	12,116
2002	12,680	-	12,680
2003	13,146	-	13,146
2004	12,716	-	12,716
2005	10,863	-	10,863
Average	**12,304**		**12,304**
	Post-concession		
2013	4,252	9,127	13,379
2014	4,146	9,223	13,369
2015	4,009	8,894	12,903
2016	4,004	6,627	10,631
2017	3,792	6,083	9,875
Average	**4,040**	**7,990**	**6,015**

Source: Computed based on NPA (2017) and BPE (Undated)

In the five year period under review in the post-concession period, private terminal operators employed an average of 7,990 persons annually, higher than the NPA post-concession average, but lower than pre-concession employment levels by NPA. The combined employment figures by NPA and private terminal operators shows an annual average employment figure of 6,015 (Table 3.1).

Figure 3.1 shows trend in employments for the pre-concession[1] and post-concession[2] periods in the maritime sector. 2001 and 2013 were used as base years for calculating growth in employment for the pre-concession and post-concession periods respectively.

Figure 3. 1: Trend in Employment (Maritime Sector)



Source: Computed based on NPA (2017) and BPE (Undated)

Employment trend in the pre-concession period showed positive growth in the first two years but turned negative in the last two years. Growth in employment was in the negative zone during the entire post-concession period under review. Growth in 2017 compared to 2016 was however better (-7.1%) than that in the 2005 (-14.6%) which was the corresponding year for the pre-concession period. The fact that employee growth is trending negative in the post-concession is related to the profit oriented nature of private firms. Private terminal operators have invested in new equipment and new technology for more efficient service delivery; which could mean that less people are required to work in the ports. Embracing new technology for more efficient services and retaining employees is often a sensitive balance for private firms. This notwithstanding, BPE confirms that concessionaires did retain the number of staff covenanted during concession agreements.

The Focus Group Discussions (FGD) conducted with MWUN members had mixed responses. While others thought there were more job opportunities in the pre-concession period, others thought the post-concession period offered better job prospects in the maritime industry. In their collective summary assessment of job opportunities in the maritime industry, members of the MWUN opined that there is currently minimal prospects for job opportunities in the public sector for maritime

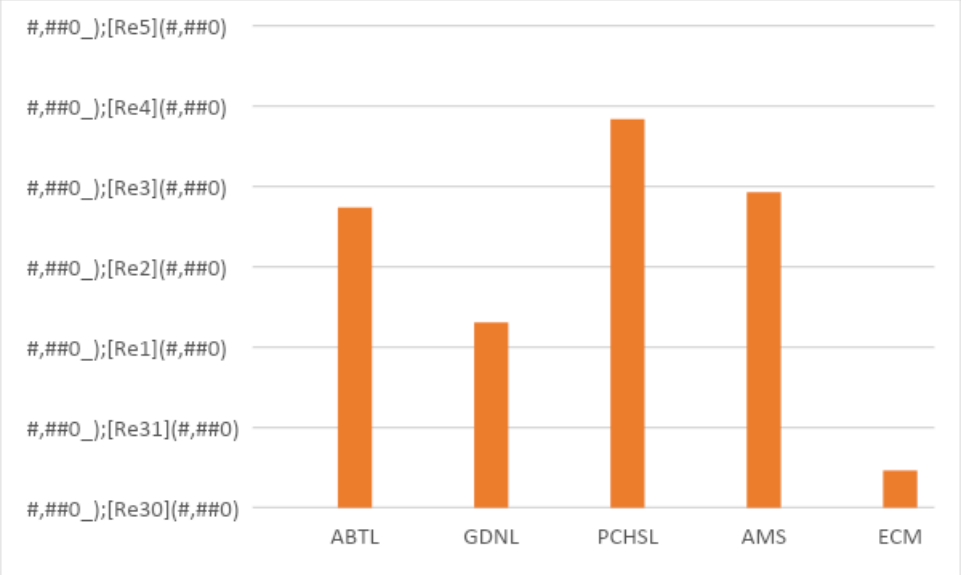
[1] NPA employment data
[2] NPA and private terminal operators data on employment.

workers, while there are no job prospects in the private sector. They concluded that employment and job prospects in the industry before 2006 (pre-concession) was far better than what obtains in the post-concession period.

3.1.2 Enterprise Contribution to Government Revenue

Five enterprises had data on tax paid to government (federal and state) between 2013 and 2017. PCHSL made the highest contribution to government revenue in terms of taxes, while AMS ranks second. (Figure 3.2). Both enterprises accounted for 57% of total tax remitted by all five terminal operators (N15.1 billion) during the period. ABTL and GDNL had the next highest amount of taxes. Both enterprises operate in the Lagos port region, which is Nigeria's commercial capital. Taxes paid by private terminal operators could not have been realised in the pre-concession period, since terminals were operated by the Nigerian Ports- an agency of government. These remittances therefore represent additional inflow into government coffers from the maritime sector.

Figure 3. 2: Taxes Paid (N' Billion)



Source: Computed, based on ATeWG Field Survey, 2019.

Tax payments pertaining to a longer time period of the post-concession phase (2006-2017) however shows that a total of N67.7 billion was paid in taxes by privatized enterprises during the period. This amounts to an average of N5.6 billion yearly (Table 3.2).

Table 3. 2: TAX PAYMENTS BY ENTERPRISE

	Tax payment (2006 to 2017)		
	NAME OF CORE INVESTOR	**Amount Paid**	**Percentage**
1	Apapa Bulk Terminal (A& B)	4,973,683,331.50	7.34
2	ENL Consortium (Apapa terminlas C& D)	680,747,100.00	1.00
3	Greenview Nigeria ltd(Termnal E)	2,307,704,000.00	3.41
4	APM Ltd (Apapa Container Terminal)	33,815,689,071.65	49.90
5	Josephdam Nigeria Ltd (Tin Can Terminal A)	1,074,790,829.02	1.59
6	TICTC (Tin Can Island B)	18,002,252,448.00	26.56
7	Port and Cargo (Tincan Island Terminal C)	5,275,000,000.00	7.78
8	Five Star Logistics (RO RO)	99,921,654.09	0.15
9	Associated Maritime Service	47,396,001.90	0.07
10	Warri Canal Berth	309,118,078.31	0.46
11	Intels Nigeria Ltd (New Warri Terminals)	63,098,315.73	0.09
12	Intels Nigeria Ltd (Old Warri Terminals)	0.00	0.00
13	BUA	417,502,094.00	0.62
14	PORTAND Terminal Operators Nig. Limited	151,663,939.35	0.22
15	INTELS (Calabar Terminal A)	11,736,000.76	0.02
16	ECM Terminals Ltd (Calabar Terminal B)	443,593,907.55	0.65
17	Shoreline Logistics(Calabar Old Port)	28,555,293.86	0.04
18	INTELS (FOTA)	0.00	0.00
19	INTELS (FLT, B)	0.00	0.00
20	Brawal Oil Services Limited (FLTA)	67,602,497.47	0.10
		67,770,054,563.19	**100.00**

Source: BPE (2020)

The highest amount of tax payed during the period (N33.8 billion), representing about 50 percent of the total amount was by APM Ltd, the concessionaire for Apapa Container Terminal; while TICT Ltd (Tincan Island Terminal B) had the second highest payment of N18 billion. INTELS Nigeria Ltd, concessionaire for old Warri Terminal, FOT A, and FLT B, had no tax payment figures recorded for the 2006-2017 period.

Aside from taxes paid, which is expected to be a recurring source of revenue to the government, other fees paid by privatized enterprises include commencement fees, lease fees and throughput fees.

Commencement fees are one off fees paid by concessionaires to the Lessor (NPA), based on agreement, with BPE as a confirming party. A total of N5.6 billion was paid as concessionaire commencement fee to the Federal Government at the outset of port reforms in 2005 and 2006. The highest amount (N1.28 billion) was paid by APM Ltd, concessionaires for Apapa Container Terminal. This represents 22.6 percent of the total amount of commencement fees paid to the Federal Government (Table 3.3)

Table 3. 3: COMMENCEMENT FEES BY TERMINAL

Payment of Commencement Fees

S/N	Name of Terminal	Period of Concession	Date of Concession	Commencement fees paid ($)	Commencement fees paid (N)	
1	Apapa Bulk Terminal (A& B)	25	2005	3,000,000.00	393,810,000.00	6.93
2	ENL Consortium (Apapa terminals C& D)	10	2005	2,000,000.00	262,540,000.00	4.62
3	Greenview Nigeria ltd (Terminal E)	25	2005	3,000,000.00	393,810,000.00	6.93
4	APM Ltd (Apapa Container Terminal)	25	2006	10,000,000.00	1,286,500,000.00	22.62
5	Josephdam Nigeria Ltd (Tin Can Terminal A)	10	2005	1,500,000.00	196,905,000.00	3.46
6	TICTC (Tin Can Island B)	15	2006	3,500,000.00	450,275,000.00	7.92
7	Port and Cargo (Tincan Island Terminal C)	15	2006	2,000,000.00	257,300,000.00	4.52
8	Five Star Logistics (RORO)	15	2006	2,000,000.00	257,300,000.00	4.52
9	Associated Maritime Service	10	2006	100,000.00	12,581,000.00	0.22
10	Warri Canal Berth	25	2006	100,000.00	12,865,000.00	0.23
11	Intels ltd (Warri New Terminals)	25	2006	100,000.00	12,865,000.00	0.23
12	Intels ltd (Warri Old Terminals)	25	2006	100,000.00	12,865,000.00	0.23
13	BUA	20	2006	1,000,000.00	128,650,000.00	2.26
14	PORTAND Terminal Operators Nig. Limited	20	2006	2,000,000.00	251,620,000.00	4.42
15	INTELS(Calabar Terminal A)	25	2006	100,000.00	12,865,000.00	0.23
16	ECM Terminals Ltd (Calabar Terminal B)	10	2006	250,000.00	32,162,500.00	0.57
17	Shoreline Logistics (Calabar Old Port)	25	2006	100,000.00	12,865,000.00	0.23
18	INTELS(FOTA)	25	2005	5,000,000.00	656,350,000.00	11.54
19	INTELS(FLT, B)	25	2005	5,000,000.00	656,350,000.00	11.54
20	Brawal Oil Services Limited (FLTA)	25	2006	3,000,000.00	385,950,000.00	6.79
	Total			**43,850,000.00**	**5,686,428,500.00**	**100.00**

Source: BPE (2020)

INTELS Nigeria Ltd paid the next highest amount of N0.65 billion for FOT A and FLT B terminals, representing 11.5 percent of total commencement fees paid to the Federal Government. Terminal operators in Apapa port account for 41 percent (N2.3 billion) of the total commencement fee of N5.6 billion.

A total amount of N196.4 billion was paid as lease fees by concessionaires during the 2006-2017 period (Table 3.4). The amount represents 61.6 percent of the covenanted amount of N318 billion. APM Limited made the highest payment sum of N110 billion, about 56 percent of lease fees paid by all terminal operators. The least payment (N0.36 billion) was by Shoreline Logistics (Calabar old port). This payment by Shoreline Logistics over the period however represents 90.4 percent compliance with covenanted lease fee amount. Payments by APM Limited on the other hand amounts to 64.8 percent of the covenanted amount. Covenanted amounts on lease and other fees reflect concession time period (number of years) and terminal viability.

Table 3. 4: LEASE FEE BY TERMINAL

		Summary of Lease fee payment 2006 to 2017					
		Covenanted	Actual	COVENANTED	ACTUAL	Average Compliance	Percentage by Terminal
1	Apapa Bulk Terminal (A& B)	35,634,726.92	35,507,754.42	6,161,548,173.31	6,176,638,351.02	97.82	3.14
2	ENL Consortium (Apapa terminlas C&D)	54,828,878.88	51,865,383.50	10,431,203,325.32	9,390,173,761.23	96.79	4.78
3	Greenview Nigeria ltd (Temnal E)	30,120,000.00	31,497,000.00	5,147,633,500.00	5,388,315,545.00	104.57	2.74
4	APM Ltd (Apapa Container Terminal)	992,806,322.00	602,610,771.42	193,005,167,127.24	110,104,481,773.14	64.80	56.04
5	Josephdam Nigeria Ltd (Tin Can Terminal A)	27,164,932.32	27,921,769.49	5,097,201,036.68	5,209,464,567.66	103.72	2.65
6	TCTC (Tin Can Island B)	92,534,543.74	59,532,174.44	16,980,594,017.94	10,833,876,280.13	74.75	5.51
7	Port and Cargo (Tincan Island Terminal C)	103,002,650.64	33,501,632.92	19,537,830,539.21	6,804,602,669.27	40.60	3.46
8	Five Star Logistics(RORO)	103,884,605.00	73,927,165.66	20,038,284,741.01	11,973,707,244.40	83.14	6.09
9	Associated Maritime Service	4,512,829.07	4,386,020.27	903,355,118.35	884,852,911.37	95.12	0.45
10	Warri Canal Berth	2,451,584.00	2,291,070.64	545,787,885.53	506,301,809.66	93.83	0.26
11	Intels Nigeria Ltd (Warri NEW Port)	6,455,509.27	7,615,611.53	1,165,215,717.76	1,429,370,610.44	92.25	0.73
12	Intels Nigeria Ltd (Warri Old Port)	2,499,532.09	2,454,066.81	451,171,737.29	443,359,987.89	97.74	0.23
13	BUA	14,323,000.00	14,006,627.00	2,416,493,950.00	2,584,151,677.95	103.82	1.32
14	PORTAND Terminal Operators Nig. Limited	109,680,000.00	60,480,000.00	19,712,332,000.00	9,187,776,000.00	62.11	4.68
15	INTELS (Calabar Terminal A)	2,521,733.87	2,475,183.18	456,408,689.74	452,266,357.02	97.70	0.23
16	ECM Terminals Ltd (Calabar Terminal B)	13,362,720.14	9,992,477.41	2,562,612,641.49	1,816,721,585.25	79.90	0.92
17	Shoreline Logistics (Calabar Old Port)	2,310,707.85	2,081,180.71	407,270,571.04	367,172,924.74	90.44	0.19
18	INTELS (FOTA)	35,780,224.08	35,465,311.08	6,893,057,529.47	6,866,914,962.56	99.33	3.49
19	INYELS (FLT, B)	18,410,033.00	18,112,719.00	3,797,489,420.74	3,733,089,222.12	99.73	1.90
20	Brawal Oil Services Limited (FLTA)	12,700,000.00	12,745,875.19	2,327,830,500.00	2,335,104,011.37	100.00	1.19
	TOTAL	**1,664,984,532.87**	**1,088,469,794.67**	**318,038,488,222.11**	**196,488,342,252.23**		**100.00**

Source: BPE (2020)

A total of N61.4 billion, representing over 100 percent of covenanted throughput fees amount of N59.6 billion was paid over the period 2006-2017 (Table 3.5). Apapa contributed the highest amount of throughput fees (N30.4 billion) which represents almost 50 percent of payments by all ports. Throughput fees from Tin Can Island Port amounted to N17 billion. Together the two Lagos ports account for 77 percent of total throughput fees paid across ports. Calabar port contributed the lowest amount of throughput fees during the period (N1.9 billion) representing 3.1 percent of the total.

Table 3. 5: THROUGHPUT FEES BY PORTS

	Summary of Payment of throughput fees by Ports			
Description	Amount Covenanted (N)	Amount Paid (N)	% Complaince level	% of paym,ent made
Apapa Port	29,887,050,682.02	30,471,249,407.89	101.95	49.58
Tin Can Island Port	16,025,515,158.04	17,073,576,849.36	106.54	27.78
Warri Port	2,793,183,170.43	2,642,757,536.16	94.61	4.30
Port Harcourt Port	9,112,061,076.89	9,366,072,961.48	102.79	15.24
Calabar Porrt	1,874,929,991.66	1,904,045,485.44	101.55	3.10
Total	59,692,740,079.04	61,457,702,240.32		**100.00**

Source: BPE (2020)

About 70 percent of throughput fees realized during the entire 2006-2017 period is attributed to the last five years (2013-2017) which is our focal period for the study (See Table 3.6). This indicates that throughput fees realised via the ports have increased in these last five years of the post-concession phase. This is likely due more to the fact that throughput fees are adjusted based on the Consumer Price Index for Urban consumers (CPI-U).

Table 3. 6: THROUGHPUT FEES (2006-2017)

	Summary of Throughput payment by Years					
Year	Covenented ($)	Paid ($)	Covenanted (N)	Paid (N)	Yearly %Complain ce Level	% of payment by year
2006	12,798,498.64	12,219,876.82	1,646,526,850.04	1572087152.89	95.48	2.51
2007	23,035,007.72	21,969,856.36	2,898,034,321.25	2764027628.65	95.38	4.37
2008	25,959,121.61	25,921,348.82	3,069,666,130.38	3065199497.97	99.85	4.85
2009	28,561,517.89	28,281,942.62	4,252,810,013.82	4211181256.12	99.02	7.02
2010	19,862,938.08	19,218,760.44	2,985,399,593.42	2888579694.13	96.76	4.89
2011	22,133,595.94	21,842,043.18	3,405,475,071.33	3360616763.67	98.68	5.62
2012	4,599,753.27	4,596,842.44	724,461,140.03	724002684.30	99.94	1.16
2013	41,379,736.08	42,085,674.91	6,509,446,282.74	6620497520.09	101.71	11.09
2014	38,316,398.00	39,449,630.29	6,075,064,902.90	6254738882.48	102.96	10.37
2015	40,574,392.33	43,396,054.32	7,808,136,059.99	8351136693.34	106.95	13.49
2016	30,839,069.98	35,421,859.15	7,817,395,849.23	8979087075.93	114.86	14.38
2017	40,878,785.65	41,422,372.84	12,500,323,863.91	12666547390.74	101.33	20.25
Total	**328,938,815.19**	**335,826,262.19**	**59,692,740,079.04**	**61457702240.32**		**100.00**

Source: BPE (2020)

Generally speaking, contribution to government revenue by private terminal operators has been driven by operators in the Lagos ports (Apapa and Tin Can Ports). As shown in Table 3.7 the combined fiscal effects of taxes and fees from the maritime sector in the 2006-2017 period, totalling 331.18 billion, amounts to about 1.2 percent of Nigeria's non-oil revenue (N2.7 trillion) over the period. The Lagos Chamber of Commerce and Industry (LCCI) in a 2016 report noted that over N1 trillion revenue losses occurred annually across Nigerian ports due to port inefficiencies (LCCI, 2016). Port inefficiencies may compel shippers to divert consignments to neighbouring ports for clearance leading to losses in revenue to operators and by extension to government.

Table 3. 7: Revenue Generated from Private Terminal Operators (2006-2017)

Revenue sources	Naira billion
Tax	67.7
Commencement fees	5.68
Lease fees	196.4
Throughput fees	61.4
Total revenue from terminal operators	331.18
Total Non-oil revenue[3] (Nigeria)	27,206

Aside from revenue generated directed from private terminal operators, there were also savings to government as a result of port concessions in respect of payment of salaries/wages, pension contribution, insurance, staff training, staff medical expenses and Corporate Social Responsibility (CSR). These amounted to N133.08 billion naira. These amounts are for mostly for the period 2013 to 2017 (BPE, 2020).

3.1.3 Port Performance and Efficiency of Privatized Enterprises

This section analyses the efficiency of ports as well as of terminals using a Data Envelopment Analysis (DEA) approach. Some performance measures as well as background issues on investments by terminal operators are however discussed prior to the DEA analysis.

Performance measures discussed in the maritime sector relate to cargo throughput trends and shares, Vessel Turn-around Time (VTT), and overall distribution index of cargo.

Adequate infrastructure and equipment in the port environment represents the foundation for enhanced performance and efficiency of operations. Figures on investment in infrastructure shows that a total of N66.6 billion[4] was spent by concessionaires in various terminals and ports as at August 2020 (BPE, 2020). As shown in Table 3.8 the highest amount spent was by BUA (Port Harcourt Terminal B) closely followed by APM for Apapa container terminal. Clearly, at the point of concession, infrastructure development needs would differ across terminals and ports, and would determine the level of investment required by concessionaires.

[3] Central Bank of Nigeria, 2017 Statistical Bulletin.

[4] The amount may not represent the true value of investments in port infrastructure by private terminal operators as several operators did not indicate a corresponding amount for some infrastructure projects.

Table 3. 8: Investment in Infrastructure by Terminal

	Infrastructure		
	NAME OF CORE INVESTOR	Amount Paid	Percentage
1	Apapa Bulk Terminal (A& B)	2,316,970,000.00	3.48
2	ENL Consortium (Apapa terminlas C&D)	4,462,686,847.53	6.70
3	Greenview Nigeria ltd (Termnal E)	2,212,740,607.02	3.32
4	APM Ltd (Apapa Container Terminal)	12,413,619,662.50	18.63
5	Josephdam Nigeria Ltd (Tin Can Terminal A)	3,107,009,324.00	4.66
6	TICTC (Tin Can Island B)	2,323,190,040.00	3.49
7	Port and Cargo (Tincan Island Terminal C)	3,641,935,790.01	5.47
8	Five Star Logistics (RO RO)	187,005,902.15	0.28
9	Associated Maritime Service	1,151,143,714.75	1.73
10	Warri Canal Berth	511,000,000.00	0.77
11	Intels Nigeria Ltd (New Warri Terminals)	502,980,040.00	0.76
12	Intels Nigeria Ltd (Old Warri Terminals)	0.00	0.00
13	BUA	21,218,000,000.00	31.85
14	PORTAND Terminal Operators Nig. Limited	9,877,932,239.87	14.83
15	INTELS (Calabar Terminal A)	545,129,534.37	0.82
16	ECM Terminals Ltd (Calabar Terminal B)	80,343,020.86	0.12
17	Shoreline Logistics (Calabar Old Port)	711,126,180.00	1.07
18	INTELS (FOTA)	196,374,111.28	0.29
19	INTELS (FLT, B)	104,480,773.58	0.16
20	Brawal Oil Services Limited (FLTA)	1,052,991,000.00	1.58
		66,616,658,787.92	100.00

Source: BPE (2020)

The value of investments in new equipment by private terminal operators totalled N139.9b[5]. APM had the highest share (22.2%) of this investment, followed by Port & Cargo at 20.4 percent. Table 3.9 shows details of investment in new equipment by enterprises.

[5] Again there was missing data for amount spent on some equipment. This amount therefore does not fully represent the amount spent on new equipment.

Table 3. 9: Investments in New Equipment by Terminal

	Investment on Equipment		
	NAME OF CORE INVESTOR	Amount Paid	Percentage of the amount spent
1	Apapa Bulk Terminal (A& B)	7,751,499,015.21	5.54
2	ENL Consortium (Apapa terminlas C&D)	2,253,367,389.58	1.61
3	Greenview Nigeria ltd (Termnal E)	1,210,761,286.25	0.86
4	APM Ltd (Apapa Container Terminal)	31,165,924,825.00	22.26
5	Josephdam Nigeria Ltd (Tin Can Terminal A)	1,672,642,689.00	1.19
6	TICTC (Tin Can Island B)	17,751,313,155.74	12.68
7	Port and Cargo (Tincan Island Terminal C)	28,659,937,075.00	20.47
8	Five Star Logistics (RORO)	5,642,729,371.92	4.03
9	Associated Maritime Service	2,184,653,682.15	1.56
10	Warri Canal Berth	0.00	0.00
11	Intels Nigeria Ltd (New Warri Terminals)	487,152,070.00	0.35
12	Intels Nigeria Ltd (Old Warri Terminals)	509,418,933.90	0.36
13	BUA	6,294,517,852.50	4.50
14	PORTAND Terminal Operators Nig. Limited	3,910,694,014.50	2.79
15	INTELS (Calabar Terminal A)	1,043,710,346.25	0.75
16	ECM Terminals Ltd (Calabar Terminal B)	880,176,117.85	0.63
17	Shoreline Logistics (Calabar Old Port)	90,558,210.00	0.06
18	INTELS (FOTA)	1,260,157,696.55	0.90
19	INTELS (FLT, B)	27,222,190,717.96	19.45
20	Brawal Oil Services Limited (FLTA)	0.00	0.00
		139,991,404,449.36	

At the level of ports, Apapa had the highest number of equipment (558), but Tin Can Island Port had the highest figure in terms of amount spent on new equipment (N53.7b). This is shown in Table 3.10

Table 3. 10: Investments in New Equipment by Port

S/N	Name of Port	Number of Equipment	Amount Spent
1	Apapa Port	558	42,381,552,516.03
2	Tin Can Island Port	383	53,726,622,291.66
3	Warri Port	127	3,181,224,686.05
4	PortHarcourt/Onne	80	38,687,560,281.51
5	Calabar Port	60	2,014,444,674.10
Total		**1208**	**139,991,404,449.36**

3.1.3.1 Cargo throughput trends

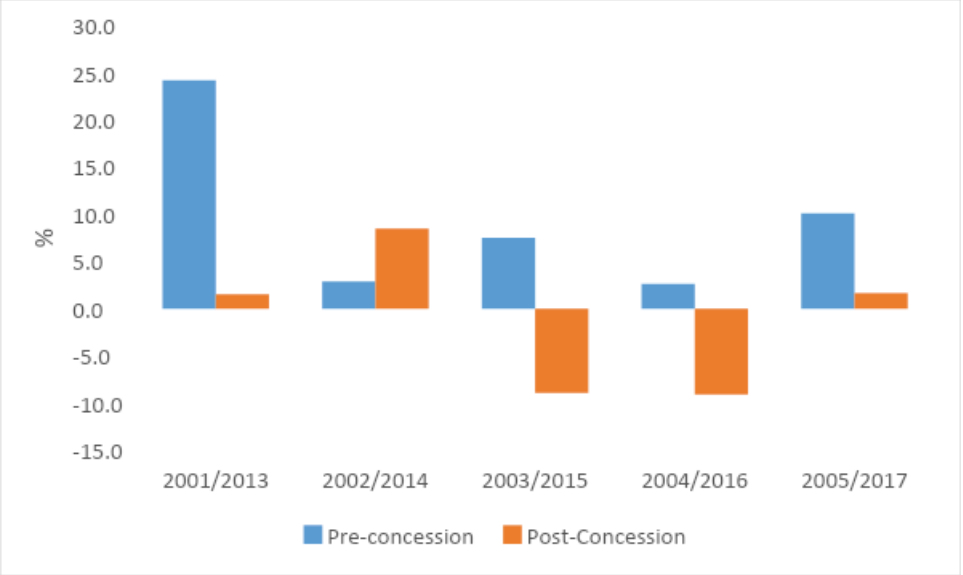
Cargo throughput experienced a steady climb in the pre-reform period. While throughput levels have been higher in the post-reform period, the trend has been a gentle downswing, with lowest volume experienced in 2016 at the height of the economic recession. Cargo throughput has been on upward traction again from 2017 (Figure 3.3).

Figure 3. 3: Volume of Cargo Throughput

Source: ATeWG Field Survey, 2019; NPA, 2013.

While cargo throughput levels (in terms of volume) have been higher in the post-concession period, growth in cargo throughput year on year for corresponding periods in pre and post-concession years shows that higher growth rates were recorded in the pre-concession phase. Except in 2002/2014 when growth in cargo throughput was higher for the post-concession year, pre-concession years growth rate have been much higher. Growth in throughput of cargo was negative in two post-concession years (2015 and 2016). This could have been associated with the economic downturn and subsequent recession (Figure 3.4).

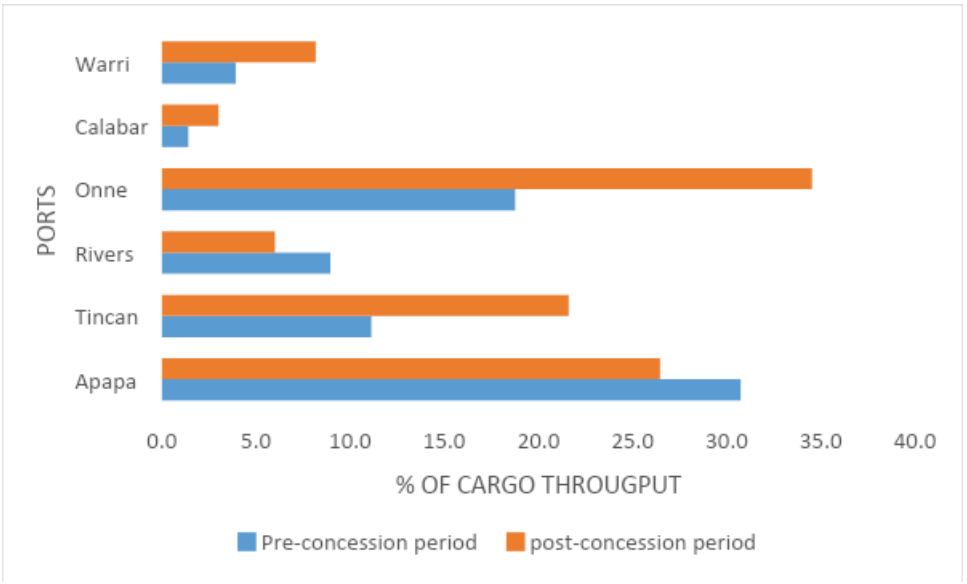
Figure 3. 4: Growth in Cargo Throughput



3.1.3.2 Port Shares of Cargo Throughput

With respect to port shares of cargo throughput, there has been a change in dynamics when we compare pre-reform and post-reform periods (Fig 3.5)

Figure 3. 5: Port Shares of Cargo Throughput



Source: Calculated based on ATeWG Field Survey, 2019; NPA, 2013.

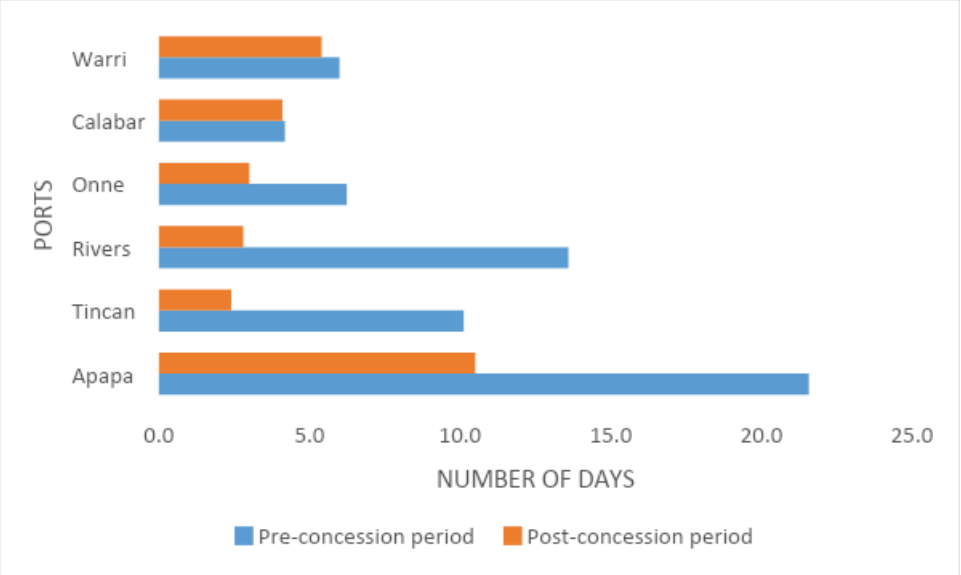
Apapa port accounted for about a third of cargo throughput across the six ports in the pre-concession period, representing the highest share of cargo. Sequel to port reforms however, Apapa port now accounts for just a quarter of total cargo thoughput, with Onne port recording the highest share (35% of total cargo). Onne port accounts for over 65 percent of export cargo through Nigerian seaports [NPA website, Nigerian ports.gov.ng] and supports oil and gas production and

exploration. In addition to oil and gas exploration and equipment, the port also caters to general cargoes, bulk cargoes, containerized cargoes and other logistics services.

3.1.3.3 Vessel Turn-Around Time

Average VTT is a critical performance measure as it shows the speed with which vessels are unloaded/loaded and can make a turn around. The lower the VTT; all things equal; the more efficient is the port. The VTT measure reckons with inward bound vessels which form a preponderantly large share of Nigeria's vessel traffic at the ports. Figure 3.6 depicts average VTT for ports before and after the reform.

Figure 3. 6: Vessel Turn-around Time



Source: ATeWG Field Survey, 2019.

Across all port complexes, average VTT has reduced in the era of port reform. Rivers port complex experienced a reduction in VTT by almost 80 percent, Tincan port by 76 percent and Apapa port[6] by half the time from 21.6 to 10.5 days. While Calabar port had the least VTT in the pre-concession period (4.2 days), Tincan ports now has the least VTT (2.4 days) in the post-reform period. At Onne FLT A (Brawals), which has an export oriented terminal, average outward VTT was 2.5 days for the post-concession period.

3.1.3.4 Port Traffic Distribution

The fact that Apapa ports now account for relatively less share of cargo throughput does not mean that there has been diversification of port traffic away from the Lagos area or that traffic is now more evenly distributed across the ports. In order to probe the pattern of port traffic distribution an Overall Distribution Index (ODI) was calculated for each year under review. The ODI is an entropy

[6] In the post-concession period (2013-2017), VTT records for Apapa ports were available for Apapa bulk terminal (A&B) as well as terminals C&D(ENL). There were no VTT records for Apapa container terminal (APMT) and Terminal E (GDNL).

measure that reflects the extent to which total interaction (in this case port traffic represented by cargo throughput) is distributed evenly across all ports in the entire national port network.

ODI values range from 0-1, whereby 1 indicates an equal distribution across all ports (a fully polycentric structure) and small values point to the concentration of traffic in a few ports. An ODI value of 0 would refer to a fully monocentric structure where all the traffic is concentrated in one node (or port as is the case here). ODI values thus help us to gauge the level of dispersal or concentration of traffic in a network. Table 3.11 presents ODI measures for the years under review

Table 3. 11: Overall Distribution Index of Port Traffic in Nigeria.

Pre-concession	2001	2002	2003	2004	2005
	0.75	0.77	0.76	0.62	0.65
Post-concession	2013	2014	2015	2016	2017
	0.87	0.88	0.86	0.80	0.80

Source: Calculated based on ATeWG Field Survey, 2019; NPA, 2013.

Prior to reform, ODI values range from 0.62 to 0.75. In the post-reform period however, there has been a more dispersed distribution of traffic among ports as seen in higher ODI values ranging from 0.80 to 0.88. Port traffic was most evenly dispersed in 2014.

3.1.4 Port Efficiency Analysis

Beyond the subjective, yet important assessment carried out by firms, the study team embarked on an efficiency analysis using objective criteria based on input and output variables supplied for ports and for terminals in the pre and post-reform periods. Results are presented in the subsequent section.

3.1.4.1 Data Envelopment Analysis

There were six ports in focus namely- Apapa, TinCan, Port Harcourt, Onne, Calabar and Warri. The output variable used in the analysis was cargo throughput (tons), while input variables used were total quay length (metres), Berth area (hectares), number of vessels berthed, Berth occupancy (%) and Vessel Turn-around Time (days). Results are presented for the pre-concession and post-concession periods.

3.1.4.2 Results and Discussion: Ports Efficiency in the Pre- Concession and Post-concession Period

The annexure (Tables 1 and 2) contain the details of the analysis for each year covered, however, Table 3.12 below gives a summary of average port efficiency in the pre-concession and post-concession periods.

Table 3. 12: Port Based Efficiency Analysis.

	Pre-concession (2001-2005)			Post-concession (2013-2017)	
	PORTS (DMUs)	Average efficiency score (Θ)	Rank	Average efficiency score (Θ)	Rank
1	Apapa	0.38	3rd	0.7	3rd
2	Tincan	0.29	4th	0.87	2nd
3	Port-Harcourt	0.26	5th	0.33	5th
4	Onne	0.46	2nd	0.66	4th
5	Calabar	0.11	6th	0.18	6th
6	Warri	0.89	1st	0.96	1st
	ALL	**0.39**		**0.61**	

Source: Computed, based on ATeWG Field Survey, 2019.

Warri ranked first, as the most efficient port in both periods, Calabar ranked sixth and was thus the least efficient port in both periods while Apapa ranked third in both periods. Beyond the rankings each of the ports recorded higher efficiency scores in the post-concession period compared to the pre-concession period. Tincan had a significant increase from an average efficiency score of 0.29 in the pre-reform period where it ranked fourth to a score of 0.87 in the post-reform period where it now ranks second. The overall efficiency score in the pre-concession period was 0.39 (39%), this increased to 0.61 (61%) in the post-concession years, signifying a substantial increase in efficiency at the ports.

Tables 1 and 2 in the annexure also provide details of input and output slacks in each year. Input slacks refers to the amount of input that were underutilized, which otherwise used could have produced better efficiency scores. Output slacks point to the additional amount of output (in this case cargo throughput) that would have been achieved had the inputs been optimally utilized. In the pre-concession period, Apapa – Nigeria's busiest port had input slack with respect to number of vessels berthed (ranged from 162 to 201), Quay length (140-432m), Berth area (3.7 ha), VTT (3-7.5 days) In other words, if inputs were reduced by these amounts, the same level of output could have been achieved. Output slack for Apapa port in the pre-reform period ranged from 243,364-751,063 tons of cargo. This means that these volumes of cargo could have been recorded as additional throughput if inputs were utilized optimally. Slacks essentially reflect input under-utilization and output sub-optimization; slack measures also point to the additional improvement needed (decrease in input or increase in output) for a unit (ports in this case) to become more efficient. Clearly, Apapa needs less vessel calls to attain higher efficiency.

In the post-concession periods, input slacks for Apapa port were vessels berthed (ranged from 502-800), quay length (1362-1517m), berth area (50.8-55.7 hectares), berth occupancy (5.8-10.8%), VTT (7.4-18.4 days). Output slack ranged from 0.18-0.77 tons of cargo, showing remarkable improvement in output optimization in the post-concession period.

Warri port, which was the best performer in both periods, recorded an output slack of only 0.02 tons of cargo in the post-concession period, and this only in 2014. There was no slack recorded on Berth Area, meaning this input was fully utilized. Other input slacks recorded for Warri port in the post-concession period are VTT (0,08 days) only in 2015, berth occupancy (1.3-12.2%), vessels berthed (67-151) and quay length (735-770m).

3.1.4.3 Terminal Based Efficiency Analysis

Further to the port based efficiency analysis which enabled comparisons of efficiency in the pre-concession and post-concession periods, the team carried out a terminal based efficiency analysis for 17 terminal operators in the post-concession period (2013-2017). There was more data on input variables available for terminal operators in the post-concession period and this enabled a more robust DEA. Cargo throughput was the output variable, while input variables used are:

- Total Quay Length (Metres)
- Stacking Area (Square Metres)
- Storage Area (Square Metres)
- Draught (Metres)
- Number of Vessels Berthed
- Berth Occupancy (%)
- Vessel Turn Around Time (Days)

Details of analysis of the terminal based DEA are contained in the annexure (Table 3). Seven terminals emerged as best performers, with efficiency scores of 1 (100%). These are

1. Apapa Bulk Terminal (A&B)
2. ENL Consortium (Apapa terminal C&D)
3. Greenview Nigeria Limited (Apapa terminal E)
4. Josepdam Nigeria Limited (Tincan Terminal A)
5. TICT (Tincan terminal B)
6. Intels Nigeria Limited (Warri old port)
7. Brawal oil services (Onne FLT A)

Shoreline logistics Calabar had the least efficiency score of 0.032 or 3.2 percent efficiency as shown in Table 3.13.

Table 3. 13: Terminal Based Efficiency Analysis

	Terminal	Efficiency Score	Rank
1	Apapa Bulk Terminal (A&B)	1	1st
2	ENL Consortium (Apapa terminal C&D)	1	1st
3	Greenview Nigeria Limited (Apapa terminal E)	1	1st
4	Josepdam Nigeria Limited (Tincan Terminal A)	1	1st
5	TICT (Tincan terminal B)	1	1st
6	Intels Nigeria Limited (Warri old port)	1	1st
7	Brawal oil services (Onne FLT A)	1	1st
8	BUA (Port-Harcourt terminal B	0.77	8th
9	PTOL (Port-Harcourt terminal A),	0.66	9th
OVERALL AVERAGE TERMINAL EFFICIENCY =0.56			
10	Apapa Container Terminal Limited (APMT)	0.43	10th
11	Onne FOT (INTELS)	0.24	11th
12	Five star Logistics (RoRo)	0.22	12th
13	AMS (Warri new terminal A)	0.208	13th
14	Onne FLT-B (INTELS)	0.204	14th
15	INTELS (Calabar terminal A)	0.19	15th
16	Ports & Cargo (Tincan terminal C)	0.118	16th
17	INTELS (Warri new port)	0.117	17th
18	Warri canal berth	0.09	18th
19	ECM (Calabar terminal B)	0.05	19th
20	Shoreline Logistics, (Calabar)	0.03	20th

Source: Computed, based on ATeWG Field Survey, 2019.

The overall average efficiency score for all the terminals was 0.56 or 56[7] percent. Out of the 20 terminals for which analysis was conducted, nine had scores above average score. These include BUA (Port-Harcourt terminal B) and PTOL (Port-Harcourt terminal A), along with the seven best performers. Other terminals listed from 10-20 in Table 3.5. had efficiency scores below the average. Details of input and output slacks for sub-optimal performers are contained in the annexure (Table 3).

[7] This figure differs from the score recorded in the port based post-concession efficiency analysis because the units of analysis (DMUs) were different. One utilized port level data while the other used terminal level data.

It should be noted that the efficiency or otherwise of terminal operators is also determined to some degree by factors outside their control. Some terminal operators pointed out issues of dilapidating infrastructure, such as collapsing quay walls and weak drainage systems. These infrastructure issues are within the purview of the NPA and will impact on the operational efficiency and effectiveness of terminal operators concerned. Some of the terminal operators also signified their intention to fix these infrastructure deficits, but they claim this has not been possible given NPA processes. Another challenge noted by terminal operators at Tincan Island was the non-linkage of the port to the standard gauge rail. This in their opinion will make the port less competitive than Apapa once the rail becomes operational.

3.1.5 Quality of Service Assessment

The study team carried out a survey of port users and their assessment of issues relating to Quality of Service (QoS) at the ports, as well their assessment of port facilities. Thirty-nine port users responded to the questionnaire, consisting of freight-forwarding firms, stevedoring firms and shipping agents. These groups represent the frontline users at the ports.

Table 3.14 presents ratings of port users' satisfaction levels in the pre-reform and post-reform periods.

Table 3. 14: Quality of Service Assessments by Port Users

	Issues Rated	% of respondents satisfied 2001-2005	2013-2017
1	Cargo handling equipment (quantity)	33.3	84.6
2	Cargo handling equipment (quality)	33.3	82.0
3	Cargo loading/Unloading time	23.1	77
4	Cargo clearing time	23.1	64.1
5	Access to information on ship arrivals	37.9	77
6	Access to information on ship departures	28.2	77
7	Customs clearance	20.5	64.1
8	Documentation process	15.4	64.1
9	Inspection regime	18.0	53.8
10	Security of port facility	25.7	74.3
11	Safety and Security of shipments	25.6	66.7
12	Cost of port services	15.4	61.6
13	Physical access to ports	33.4	59
14	Fire prevention and control	25.6	74.4
15	Power supply	33.3	79.5
16	Water supply	28.2	71.8
17	First aid and health services	28.2	59.5

Source: ATeWG Field Survey, 2019.

On all the issues pertaining to QoS at the ports, a higher proportion of port users rated services as ‘good’ in the post-concession period compared to the pre-concession period. The lowest rating in the post-reform period was for ‘inspection regime’ and ‘physical access to ports’. Only 53 and 59 percent of respondents respectively rated these as ‘good’.

The firms also assessed port facilities, this is presented in Table 3.15.

Table 3. 15: Port Facility Assessments

	Issues Rated	% of respondents that rated ‘good’ 2001-2005	2013-2017
1	Quay side facilities	41	92.3

	Issues Rated	% of respondents that rated 'good' 2001-2005	2013-2017
2	Condition of warehouses	43.6	84.6
3	Berthing facilities	48.7	84.6
4	Terminal capacity	43.6	79.5
5	Road access to ports	41	66.7
6	Road Access within ports	41	66.7

Source: ATeWG Field Survey, 2019.

Similar to the QoS assessment, the facility assessment also returned higher ratings for the post-concession period. Again the issue of road access to ports and road access within port areas had the lowest rating (Table 3.3)

3.1.6 Welfare Analysis

The study team conducted a Focus Group Discussion (FGD) with the Maritime Workers Union on Nigeria (MWUN) at the headquarters in Lagos. The FGD presented opportunity for members to give a stakeholder assessment. According to the respondents' spokesperson, the MWUN is an amalgam of four defunct unions namely:

- Nigerian Ports Authority (NPA) Workers Union
- Dockworkers Union of Nigeria
- Union of Shipping, Clearing and Forwarding Agency Workers
- Nigerian Union of Seamen/National Inland Waterways Authority (NIWA) and Transport Workers

Most of the issues for discussion were engaged along the lines of these defunct groups. The group of respondents noted that the NPA and Dockworkers branches of the MWUN enjoy good work conditions whereas working conditions were below average for the Shipping and Seamen/NIWA branches. The NPA was said to have a well defined salary structure, commendable conditions of service and clear paths for promotion and advancement of workers which helps to motivate the workers. Dockworkers were said to have a negotiated Collective Bargaining Agreement which had replaced the previous regime of 'hire and fire' according to the MWUN respondents. Shipping agency workers and seamen were said to be bedevilled with:

- Poor remuneration
- Stagnation/lack of promotion
- Poor medical facilities/services
- Absence of an open appraisal system
- Non-existent job grading
- Non recognition of educational qualifications
- Casualization and job outsourcing

These challenges are more pronounced with Shipping, Clearing and Forwarding unions but slightly better with the Seamen and NIWA branches of the union. The group noted a generally poor

working environment for the MWUN especially the condition of access roads to ports which is characterized by deep pits, gullies and craters. They bemoaned the lack of holding bays to accommodate laden and empty containers being conveyed to and out of the ports. Thus, in their view, access roads to ports are perpetually blocked with unquantifiable man hour losses per day in a bid to access the ports. These challenges of infrastructure impedes their performance as shipping, clearing and forwarding agents.

With respect to job opportunities, the Union submitted that there were minimal prospects for job creation in the public sector component of MWUN, and absolutely none in the private sector component. They posited that the prospects for jobs in the industry were better prior to concession than now. The MWUN respondent summarized his assessment of maritime workers' welfare condition as follows:

> *For NPA and the dock labour industry, workers welfare condition is quite good but needs improvement, whilst working conditions in the other two branches is below average. A comprehensive upward review of conditions of service for workers in the Shipping, Seamen/NIWA and transport branches is recommended. Casualization and job outsourcing should be proscribed*. (Respondent, MWUN).

Both subjective and objective assessments of port performance converge on the fact that ports have become more efficient units in the post-concession period. Except in terms of employment prospects in the maritime sector where MWUN surmised that job prospects were better in the pre-reform period, stakeholders in the transport sector generally ascribe better performance to the post-concession period.

3.1.7 Financial Performance Analysis: Port Terminal Operators

The financial performance analysis was conducted for the top 5 terminals for the period 2013 – 2017. These five were selected based on highest net profit figures (Table 3.16)

Table 3. 16: Key Financial Performance Variables for All Terminal Operators

TERMINALS	REVENUE	% TOTAL REVENUE	COST OF SALE	NET PROFIT
Apapa Bulk Terminal (A& B)	32,499,170,000.00	7.15%	15,700,551,000.00	7,304,787,000.00
ENL Consortium (Apapa terminlas C&D)	0.00	0.00%	0.00	0.00
Greenview Nigeria ltd	19,421,047,000.00	4.27%	4,076,402,677.00	8,562,809,000.00
APM Ltd	248,267,949,000.00	54.63%	101,464,809,000.00	86,886,300,000.00
Josephdam Nigeria Ltd	13,749,373,745.00	3.03%	9,907,531,111.00	870,006,957.00
TICTC (Tin Can Island B)	0.00	0.00%	0.00	0.00
Port and Cargo (Tincan Island)	70,810,701,432.00	15.58%	46,884,276,290.00	3,853,305,313.00
Five Star Logistics (RORO)	19,855,068,962.00	4.37%	29,332,236,332.00	-5,120,884,350.00
Associated Maritime Service	6,612,743,422.00	1.46%	4,923,075,288.00	20,237,824.00
Warri Canal Berth	7,343,902,000.00	1.62%	4,733,680,000.00	-174,488,000.00
Intels Nigeria Ltd (Warri NEW)	448,459,361.00	0.10%	2,156,151,615.00	-2,831,476,559.00
Intels Nigeria Ltd (Warri Old)	0.00	0.00%	0.00	0.00
BUA	5,817,871,896.00	1.28%	3,587,383,079.00	619,219,167.00
PORT & Terminal Operators Nig. LTD	9,818,021,000.00	2.16%	15,051,581,000.00	-4,730,114.00
INTELS (Calabar Terminal A)	379,638,846.00	0.08%	660,001,318.00	-676,582,093.00
ECM Terminals Ltd (Calabar)	7,121,447,076.46	1.57%	4,177,573,742.23	1,435,067,000.00
Shoreline Logistics (Calabar)	0.00	0.00%	0.00	0.00
INTELS (FOT A)	5,323,700,914.00	1.17%	5,738,771,475.00	-6,593,543,052.00
INTELS (FLT, B)	4,197,636,693.00	0.92%	4,248,234,657.00	-3,838,617,250.00
Brawal Oil Services Limited (FLT A)	2,808,711,000.00	0.62%	1,488,361,000.00	-663,017,000.00
TOTAL	**454,475,442,347.46**	**100.00%**		

Source: Computed, based on ATeWG Field Survey, 2019.

Eight of the terminals posted negative net profits. Figure 3.5 shows net profit figures for terminal operators for the post-reform period.

3.1.7.1 Revenue Generation

The highest ranking terminal in terms of revenue generation for the period under review was APM Limited (Apapa Container Terninal), which accounted for 54.63% of total revenue generated. Some terminals have no data available. (Figure 3.7).

Figure 3. 7: Terminal Shares of Revenue (2013-2017)

Source: Computed, based on ATeWG Field Survey, 2019.

Based on Net Profit performance, the five enterprises chosen are as listed in Table 3.17 below

Table 3. 17: Selected Terminal Operators for Financial Performance Analysis

Terminals/Enterprises	Port location
APM LTD (Apapa Container Terminal)	Lagos port complex
Greenview Development Nigeria Limited (GDNL	Lagos port complex
Apapa Bulk Terminal Limited (ABTL)	Lagos port complex
Ports & Cargo Handling Services Limited (PCHSL)	Tin Can Island port
ECM Terminal Limited	Calabar port complex

Figure 3. 8: Total Net Profit (2013-2017) for All Terminal Operators

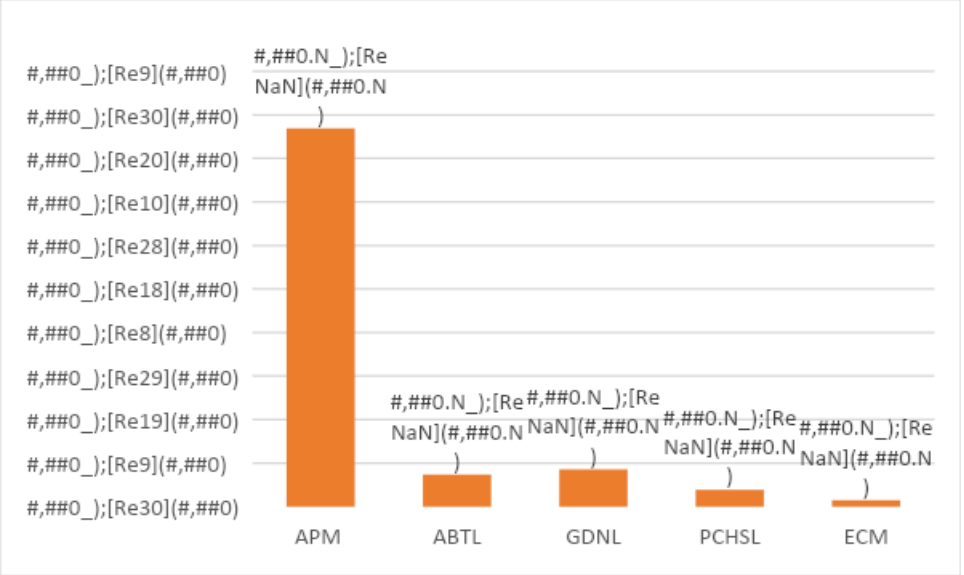
Source: Computed, based on ATeWG Field Survey, 2019.

3.1.7.2 Total Net Profit

The terminal with the highest total net profit during the period 2013-2017 is APM to the tune of N86.88 billion (Figure 3.9). This may be due to the fact that the terminal has higher volume of business (turnover) and less costs relative to larger ports in terms of personnel. Besides, APM spent the most on infrastructure (N26 billion) compared to the next highest earner GDNL (N8.5 billion) which expended N2.2 billion on same.

The Western Ports (Lagos port complex and Tin Can Island Port Complex) made a total net profit of N102.36 billion in the period under review. They have the advantage of being largely insulated from political agitations and militant disruptions associated with the Niger Delta area which engenders frequent closures and higher maintenance costs. Moreover, Lagos as the commercial hub of the country trafficks a broad spectrum of products besides petroleum products through the ports. Return on Asset (ROA) and Return on Equity (ROE) was on the increase for most of the terminals in the Western Ports during the period 2013-2017

Figure 3. 9: Net profits (N' Billion) for the Five Selected Terminals



Source: Computed, based on ATeWG Field Survey, 2019.

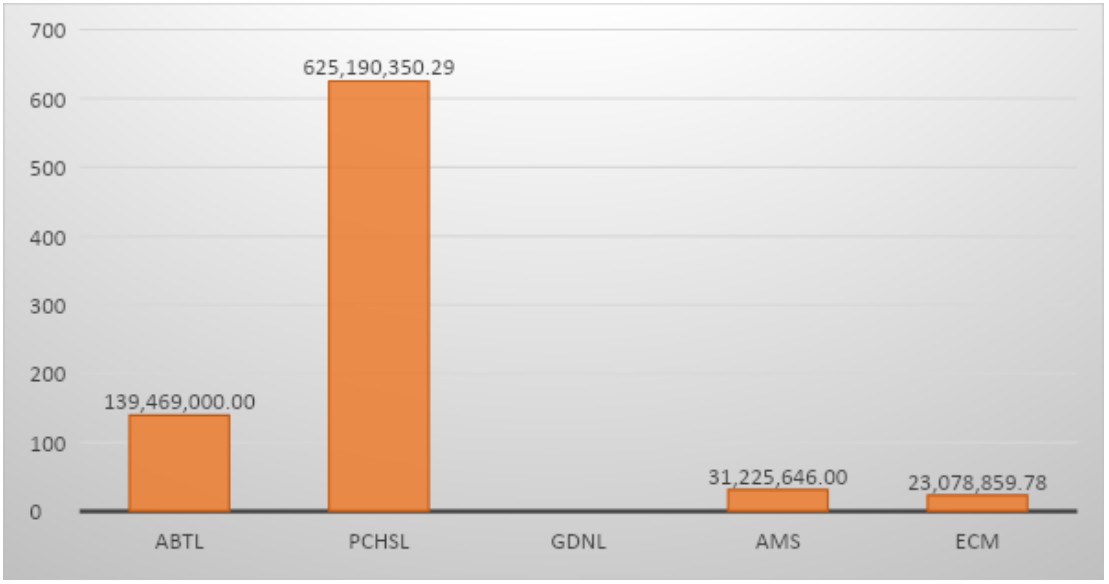
3.1.7.3 Corporate Social Responsibility

The two terminals located in Apapa which are the highest revenue generators, have huge capital investments, which enhances efficient service delivery. They have also expended the sum of N139 million on CSR (Figure 3.10).

In general, Apapa Port Complex has been most impacted by privatisation as evidenced by business growth and investments in facility upgrades, which in turn will lead to higher turnover and profits and more incomes for the state and federal government.

AMS terminal accounts for 3.28% of revenue and paid taxes amounting N4.9 billion. It has grown its revenue and profits over the period under review. It has also spent considerably on infrastructure (N310 Million) and CSR (N31million). Thus, there has been a positive impact of privatization on the terminal. In perspective, Julius Berger, which operates in the same environment, has expended the sums of $9.2 million and N205million on infrastructure and CSR, respectively and continue to generate revenue, although its overheads are eroding its profit considerably.

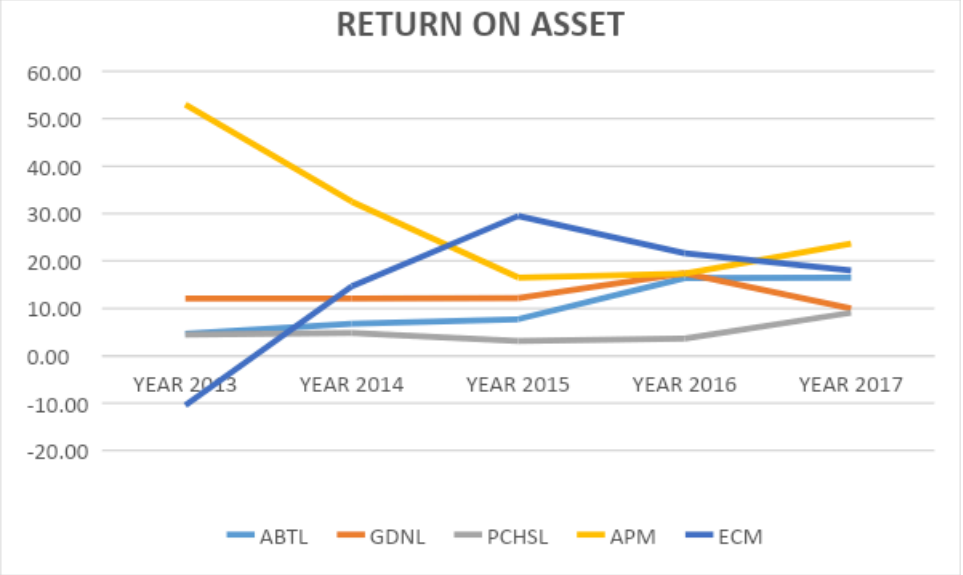
Figure 3. 10: Corporate social responsibility expenditure (N' Billion)



Source: Computed, based on ATeWG Field Survey, 2019.

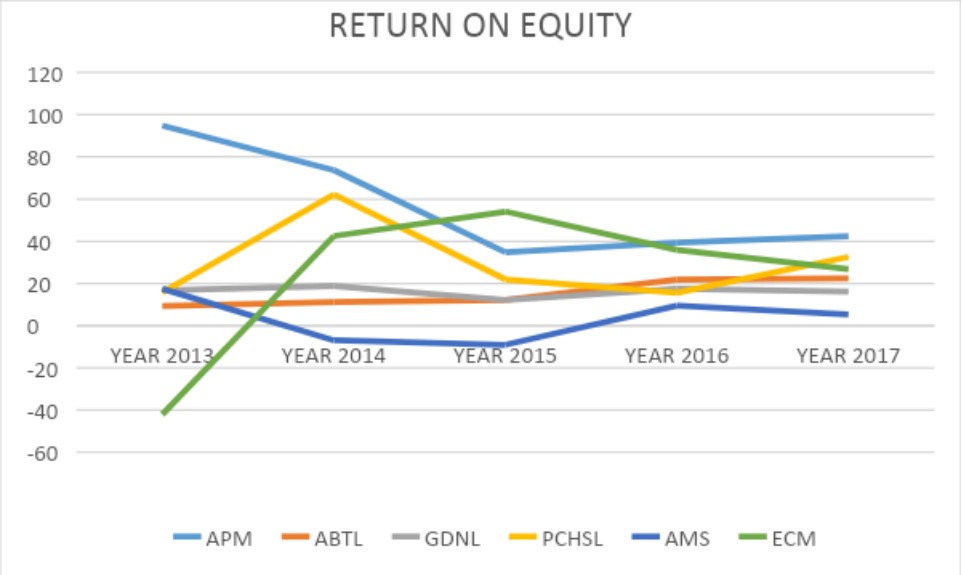
ECM in the Calabar Port Complex is also doing well. ECM commenced operations in 2013 from a negative net profit position, but has turned its fortunes around and now account for 3.53% of revenue generated by the top terminals. It has also spent the sum of N1.45 Billion on infrastructure. By contrast, Intels terminals have been on a downward spiral due more to the prevailing political climate and issues within the company, than to failure of the privatisation project. For ECM, the Return on Asset (ROA) went from **-10.45 to 17.97** and the Return on Equity (ROE) went up from **-42.04 to 26.88** during the period 2013-2017. Figures 3.11 and 3.12 show trends in return on asset and return on equity for the terminal operators.

Figure 3. 11: Return on Assets



Source: Computed, based on ATeWG Field Survey, 2019.

Figure 3. 12: Return on Equity



Source: Computed, based on ATeWG Field Survey, 2019.

The Onne Port Complex terminals have been the least performers financially speaking. This is probably due in large part to turbulence in the Niger Delta Region and associated security concerns. Even though some revenue are being generated, they were swamped by higher expenses, precipitating operating losses. The number of vessels berthing at this complex has greatly reduced over time due to the same security concerns rather than quality of service delivery.

3.2 Aviation Sub-Sector

In the aviation ground handling sector, data was mostly available for the post-privatization period only. Discussions in this section therefore pertain to trends in number of employees, Aircraft Turn-around Time (ATT), aircraft loading/off-loading time, passenger processing time and volume of traffic in the post-privatization period (2013-2017). Some airline operators that have operated long enough were however able to provide data to enable comparative assessments for the pre and post privatization periods. The data available did not accommodate an efficiency analysis of ground handling enterprises in the pre-reform and post-reform periods.

3.2.1 Employment Trends and Effects

Table 3.18 shows trends in number of employees for the two ground handling companies covered in the study. Employments increased for both enterprises- NAHCO and SAHCO, from 2013 until 2015. In 2016, number of employees shrunk in both aviation ground handling companies. 2016 was a recession year, and was characterized by reduced employment across sectors. The number of employees for both enterprises declined from 2016 through 2018.

Table 3. 18: Number of Employees (GHCs)

	2013	2014	2015	2016	2017	2018
NAHCO	1738	1887	1889	1747	1708	1673
SAHCO	1101	1554	1650	1415	1379	1238
Total	2839	3441	3539	3162	3087	2911

Source: ATeWG Field Survey, 2019.

NAHCO had the higher share of employees over the six year period, its share ranged from 53 percent in 2015 to 61 percent in 2013. The combined contribution of both enterprises to employment was highest in 2015, with a total of 3,539 persons employed. The gender[8] classification of employees' data showed that the aviation ground handling industry is a male dominated one. Male employees accounted for an average of 82 percent of NAHCO staff over the six year period and for 78 percent of SAHCO staff over the same period, showing that SAHCO had a slightly more inclusive employee structure in terms of gender.

3.2.2 Enterprise Contribution to Government Revenue- Aviation Ground Handling Companies

Data from NAHCO show that taxes paid to the Federal Government between 2014 and 2018 ranged from N86.6 million to N257.9 million. The highest tax paid by NAHCO was in 2017 (N257.9 million). NAHCO contributed a total of N881.5 million naira in taxes to the Federal Government between 2014 and 2018 (Table 3.19).

[8] Gender breakdown of employees for NAHCO and SAHCO contained in annexe

Table 3. 19: Taxes paid to FG (NAHCO)

Year	Amount (Naira million)
2014	149.8
2015	185.5
2016	201.4
2017	257.9
2018	86.6
Total	881.5

Source: ATeWG Field Survey, 2019.

Data on contribution to government revenue by SAHCO pertained to a different time period (2011-2016), and is thus analysed separately in Table 3.20

Table 3. 20: SAHCOL: Taxes and Concession Fees (2011-2016)

Year	Taxes (N Million)	Concession Fees (N Million)
2011	409.04	164.3
2012	410.5	164.3
2013	461.4	365.02
2014	28.05	401.3
2015	929.9	526.4
2016	832.2	557.2
Total	2,178	3,071

Source: ATeWG Field Survey, 2019.

Taxes paid by SAHCOL over the 2011-2016 period amounted to a total of N3.071 billion. The tax components include VAT, income tax, education tax, PAYE and stamp duty, with VAT accounting for 68.8 percent of total tax paid during the period. Payment of concession fees to FAAN and to other relevant agencies amounted to N2.17 billion over the period 2011-2016.

3.2.3 Performance and Efficiency of Privatized Enterprises- aviation ground handling companies

Performance and efficiency measures considered include volume of traffic (passenger, aircraft, cargo and mail) per annum, aircraft turnaround time, check-in processing time per passenger, boarding processing time per passenger and foundational issues of availability of aviation ground handling equipment. These are presented in Table 3.21 and discussed subsequently.

Table 3. 21: Performance Measures for Aviation Ground Handling Companies (NAHCO/SAHCO Self Assessment)

Performance measure	2013	2014	2015	2016	2017	2018
NAHCO						
Passenger movement	na	3,458,508	4,161,212	3,549,496	5,000,559	5,341,226
Aircraft movement	na	31,004	35,557	39,699	37,209	na
Cargo/Mail (kg)		54,156,279	69,813,757	42,371,077	44,558,762	62,301,592
Check-in processing time per passenger (minutes)	4	4	4	4	4	4
Loading/unloading time per flight (minutes)	50	50	40	40	40	na
Aircraft turnaround time (minutes)	82	80	70	70	70	na
Ground handling equipment availability (number)	1,570	1,701	1,670	1,733	1,631	na
SAHCO						
Passenger movement	na	3,099,499	1,711,060	2,617,093	1,655,152	na
Check-in processing time per passenger (minutes)	3	3	3	3	3	na
Boarding processing time per passenger (minutes)	1	1	1	1	1	na
Loading/unloading time per flight	5	5	5	5	5	na

Source: ATeWG Field Survey, 2019.

NAHCO moved a total of 21.5 million passengers over the five year period 2014-2018, while SAHCO moved a total of 9.08 million passengers over a four year period (2014-2017). NAHCO's 21.5 million represents 27.6 percent of total passenger movement (77.7 million) across Nigerian airports over the period, while SAHCO's 9.08 million passengers represent 15 percent of total passenger movement (60.5 million) over the four year period of analysis.

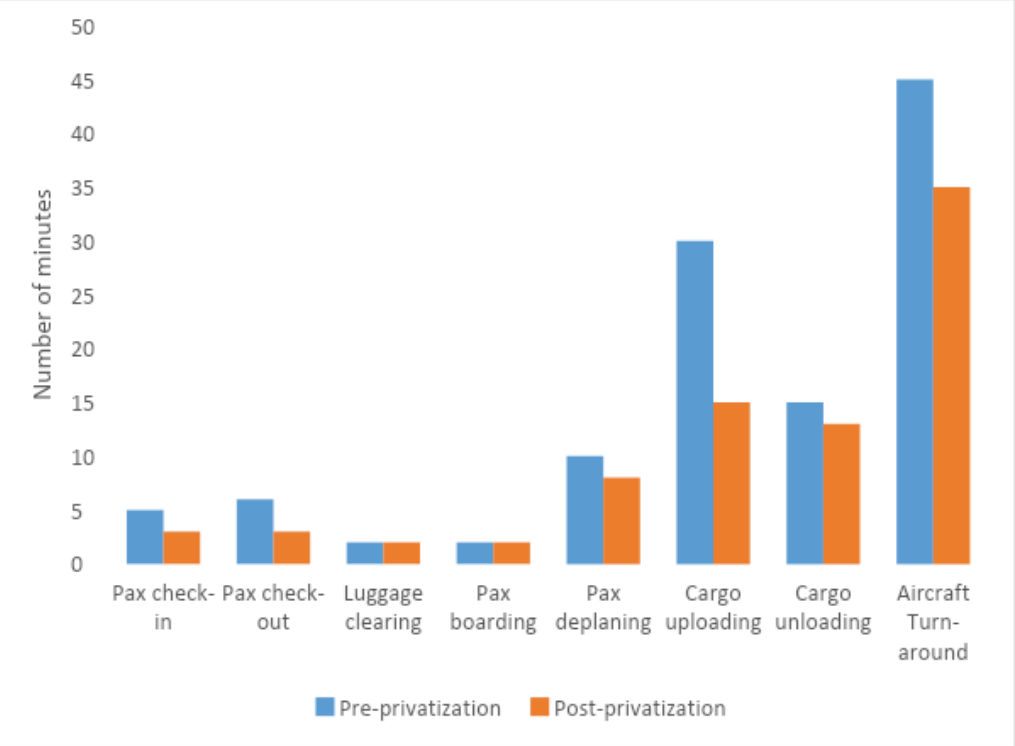
With respect to ground handling equipment availability, NAHCO recorded 1,570 as the least number of equipment available across all airports in 2013 and. The highest number available (1,733) was recorded in 2016. Meanwhile data from BPE on the performance evaluation of SAHCOL for 210-2016 showed that the core investor acquired and installed 411 geound handling equipment during the period, representing 96 percent compliance of the proposed 478 number of

equipment proposed. The least compliance level was recorded in the area of Ground Power Unit (140 kva) and with respect to bus for passengers and crew.

Check in processing time for passengers was similar for both enterprises (four minutes for NAHCO and three minutes for SAHCO). Aircraft Turnaround Time (ATT) as given by NAHCO ranged from 70-80 minutes. Several components contribute to ATT including ground handling equipment availability which could affect deplaning/unloading time, check out and baggage clearance. These all contribute to the speed with which aircrafts can turnaround. Loading/unloading time per flight differed substantially for both enterprises, while NAHCO reported 50 minutes loading time per flight, SAHCO reported five minutes.

The average time taken to complete ground handling activities was provided by one of the older airlines- Dana Air for the pre-privatization and post-privatization period, and this is illustrated in Figure 3.13. Dana Air started domestic operations in 2002.

Figure 3. 13: Passenger/Cargo Processing Time



Source: Computed, based on ATeWG Field Survey, 2019.

Generally, there has been reduction in average time spent on virtually all the ground handling activity components in the post-privatization period. Luggage clearing and passenger boarding time per passenger remained at two minutes. This indicates some improvements in efficiency of ground handlers.

3.2.4 Quality of Ground Handling Service Assessment

The quality of service assessment for NAHCO/SAHCO was done by the airlines and by the industry regulator- NCAA.

There were returns of survey questionnaires from three airlines, these are African World Airline (managed by SAHCO), Air France-KLM and Lufthansa, both managed by NAHCO. NAHCO managed airlines (both located at MMIA, Lagos) had similar rating on some services, and differed in others. Lufthansa's rating of Ground Services Equipment (GSE) shows that virtually all the GSEs listed[9] were hardly ever available for use (rating for all GSEs in terms of availability was 1 point on a 5 point scale). That notwithstanding, the airline rated several ground handling services as 'Good' (4 points on a five point rating scale). These include ratings for ground handling infrastructure, aircraft arrival/departure related tasks, passenger boarding/deplaning, cargo loading/unloading, catering removal, toilet services and airport safety/security. The airline also rated NAHCO highly on aircraft ramp maintenance and absence of incidences/accidents at airports, ascribing the full five points on the rating scale.

Air France-KLM responded that some GSEs were available based on request, it noted that baggage tractors, container and pallet dollies were insufficient. The airlines rating of ground handling services is presented in Table 3.22

Table 3. 22: Ground Handling Services Rating by Air France-KLM

Ground handling services	Very poor 1	Poor 2	Average 3	Good 4	Very Good 5
Ground handling infrastructure	x				
Aircraft arrival related tasks		X			
Aircraft departure related tasks			X		
Passenger deplanning				X	
Passenger boarding				X	
Cargo unloading			x		
Cargo loading				X	
Catering removal				X	
Catering provision				X	
Cabin cleaning				X	
Cabin preparation				X	
Refuelling				X	
Toilet services				X	
Potable water				X	
Airport safety				X	
Airport security				X	
	Very high 1	High 2	Average 3	Low 4	Very low 5

[9] GSEs listed include Passenger boarding bridge (with GPU and airconditioned systems attachments), passenger stairs, passenger shuttle bus, cargo loaders, belt loaders, catering trucks and cleaning trucks. Others listed are refuelling/hydrant vehicle, potable water/toilet servicing truck, tow tractors and baggage tractors.

Ground handling services	Very poor 1	Poor 2	Average 3	Good 4	Very Good 5
Aircraft ramp damage				X	
Personnel/passenger incidents& accidents at airport.				X	
Security breaches at airports				x	

Source: ATeWG Field Survey, 2019.

Generally speaking, Air France-KLM gave lower ratings on ground handling services provided by NAHCO, compared to ratings by Lufthansa. KLM opines that aircraft handling is an area needing improvements, it suggests investment in more equipment by the Ground Handling Company (GHC), training for GHC staff in customer service delivery and a policy stipulating maximum hours of work per staff, to ensure that GHC personnel are not overstretched. Lufthansa noted challenges of team coordination with respect to passenger handling as well as inadequate equipment for aircraft and ground handling. The airline's respondent suggests behaviour and attitude re-orientation, training and design thinking for GHC staff.

Information provided by African World Airlines (AWA) indicates that GSEs listed are available for use most times (rating for GSEs availability was 4 points out of 5). AWA covers regional routes and operates from MMIA, Lagos. The airlines' rating of ground handling services is shown in Table 3.23.

Table 3. 23: Ground Handling Services Rating by AWA

Ground handling services	Very poor 1	Poor 2	Average 3	Good 4	Very Good 5
Ground handling infrastructure				X	
Aircraft arrival related tasks				X	
Aircraft departure related tasks					X
Passenger deplanning					X
Passenger boarding					X
Cargo unloading				X	
Cargo loading				X	
Catering removal					
Catering provision					
Cabin cleaning				X	
Cabin preparation				X	
Refuelling				X	
Toilet services					X
Potable water					X
Airport safety			X		
Airport security		X			
	Very high 1	High 2	Average 3	Low 4	Very low 5

Ground handling services	Very poor 1	Poor 2	Average 3	Good 4	Very Good 5
Aircraft ramp damage					X
Personnel/passenger incidents& accidents at airport.					x
Security breaches at airports	x				

Source: ATeWG Field Survey, 2019.

Apart from airport security which was rated 'poor' and airport safety which had an average rating, other services were rated 'good' and 'very good'. The airline noted that airport security and safety services were not under SAHCO's purview. The major challenge noted by the airline with respect to passenger handling relates to the grooming and appearance of SAHCO staff. The airline respondent noted that SAHCO staff needed better grooming both in terms of appearance and attitude for improved customer service. Other challenges observed include the smallness of the cargo ramp at MMIA, inadequate number ABVSEC security personnel, lack of perimeter fencing, and the multiplicity of agencies at the airports which leads to conflicting functions. AWA suggested complete autonomy for the NCAA, noting that this would pave way for improved airport infrastructure. Currently, its situation under a ministry presents several red tape challenges. The need for better data gathering, documentation and analysis to ensure better planning in the aviation industry was also raised.

The Nigerian Civil Aviation authority (NCAA) in their position as the aviation industry regulator also rated some of the ground handling services at the airports for the pre-privatization and post-privatization period. This is contained in Table 3.24.

Table 3. 24: NCAA Rating of Ground Services (Pre & Post-Privatization)

Services	Very poor 1	Poor 2	Average 3	Good 4	Very Good 5
Pre-Privatization (2000-2004)					
Toilet services				x	
Potable water					X
Airport safety					X
	Very high 1	High 2	Average 3	Low 4	Very low 5
Aircraft ramp damage				x	
Personnel/passenger incidents& accidents at airport.					x
Security breaches at airports				x	
Post-Privatization (2013-2017)					
Toilet services					X
Potable water					X
Airport safety					X
	Very high 1	High 2	Average 3	Low 4	Very low 5

Services	Very poor 1	Poor 2	Average 3	Good 4	Very Good 5
Aircraft ramp damage				x	
Personnel/passenger incidents& accidents at airport.					x
Security breaches at airports				x	

Source: ATeWG Field Survey, 2019.

Apart from toilet services which had improved rating in the post-privatization period, other services had similar ratings for pre and post privatization periods. Ground handling services had good ratings in the pre-privatization period as given by the NCAA. Additionally, the NCAA estimated airline departure variance at five minutes for both the pre-privatization and the post-privatization periods.

NAHCO recommends improvement in airport infrastructure and better crowd control at airport terminals (by FAAN). Duty waivers/forex purchase concessions for spare parts and equipment purchase was also advocated; for ground handling companies to perform optimally. On its part, SAHCO requested for a minimum floor for ground handling rates to be enforced by regulators in the industry - NCAA. The company also observed that ground handling companies need to be included in government priority list, as the attention currently, appears to tilt toward airlines, which enjoy rebates and concessions. There are facilities that statutorily should be provided by the landlord (FAAN), but which have been provided by SAHCO in some cases. There were complaints on the slowness of processes involved in seeking approval from FAAN for projects, which essentially slows down the effectiveness of the ground handling operations. Similar to some of the challenges highlighted by terminal operators, ground handling companies still have constraints within the landlord and regulatory environment which ultimately impacts their performance.

3.2.5 Welfare Analysis (Aviation Ground Handling Employees)

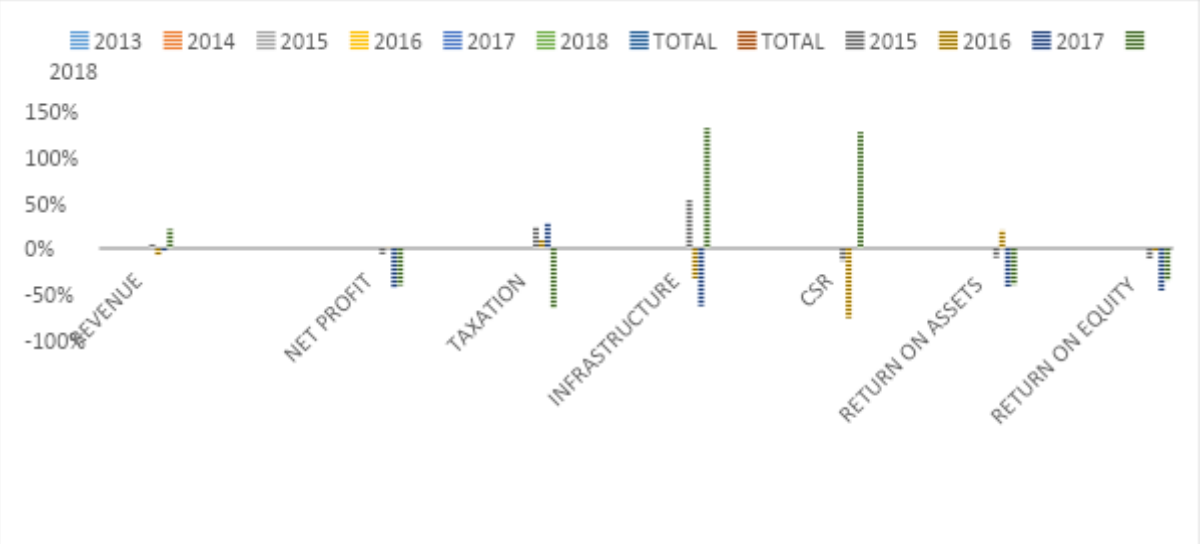
There was no output from the National Union of Air Transport Employees (NUATE), but a few issues pertaining to staff welfare (specifically training) were mentioned during interviews with GHCs. Both companies affirmed that their staff are made to undergo periodic training sessions. United Airlines is responsible for training SAHCO staff, while in-house instructors handle training on operating equipment at NAHCO. SAHCO stated categorically that there were no labour issues in the company.

3.2.6 Financial Performance Analysis: Aviation Ground Handling Companies

NAHCO provided financial data which seem to indicate that they have grown revenue since privatization. The organization has paid taxes in the sum of N881 Million. Investment in infrastructure to the tune of N10 Billion has been made and this conceivably improved efficiency in service delivery. Privatisation has had a positive effect on the service delivery for NAHCO as they have maintained an upswing in revenue generation and profit and most service delivery parameters. The Asset turnover for NAHCO went from 0.55 to 0.73 during the period 2014 – 2018. Figure 3.14

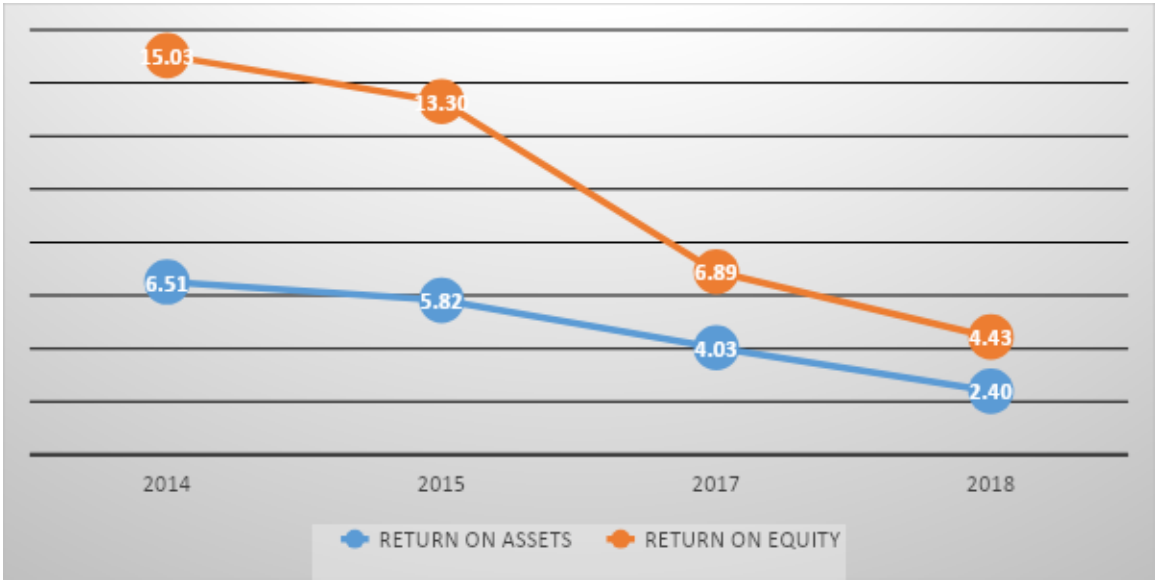
shows growth in NAHCO's financial indicators with investments in infrastructure and CSR recording the highest growth rates, while Figure 3.15 shows trend in returns on assets and equity.

Figure 3. 14: Growth in NAHCO Financial Indicators (%)



Source: Computed, based on ATeWG Field Survey, 2019.

Figure 3. 15: NAHCO Returns on Assets and Equity



Source: Computed, based on ATeWG Field Survey, 2019.

SAHCO financial data were not readily available but there has been a rise in the volume of business as evident from the Apron/Ramp utilization figures.

CHAPTER FOUR
SUMMARY & CONCLUSIONS

4.0 Summary of findings

4.1 Macro Level Analysis

- Aggregate transport GDP growth in the post-reform period generally surpassed its pre-privatisation growth trajectory
- Transport GDP components of road, rail, air, water and transport services, largely recorded better growth performance, post-privatisation relative to pre-privatisation
- Despite the intermittent strong inflow of capital importation into the transport sector, its share of total capital importation into the Nigerian economy remained less than 1% all through the period.
- Nigeria's overall infrastructural index on a global scale remains low with the cumulative gains improving from 2.43 in 2009/2010 to 3.23 in 2012/2013, but eroding in subsequent years to 2.32 in 2017/2018.

4.2 Maritime Sub-Sector

- The combined personnel strength of NPA and private terminal operators in the post-concession years is below the pre-concession figures on employment. When put in context, we opine that private firms investments in new equipment and new technologies may explain this trend. We expect however that several indirect jobs would have been created given the trend in increased cargo throughput in post-concession years
- Private terminal operators contributed a total of N331.18billion naira to government revenue over a 12 year period (2006-2017). In addition, the firms saved government N133.08billion in recurrent expenditure during the period.
- Cargo throughput levels have been higher in the post-reform period and trended up again since 2017
- The dynamics of port shares of cargo throughput have changed slightly in the post-reform period relative to pre-reform as Apapa port share of total cargo thoughput declined from one-third to a quarter over both periods; with Onne port now leading with 35% share of total cargo. This finding relates to the post reform period defined in the study (2013-2017).
- Average Vessel Turn-Around Time (VTT) has reduced in the post-concession period across all port complexes.

- Port traffic mirrored by cargo throughput show a more dispersed distribution of traffic among ports in the post-reform relative to pre-reform period, suggesting that ports other than Apapa are becoming more active.
- The port based efficiency analysis returned an average score of 39 percent in the pre-reform period, and 61 percent in the post reform period. The terminal based average efficiency score for the post-concession period was 56 percent. Post-reform efficiency scores, whether based on ports or on terminals are higher than pre-reform years.
- All of the ports captured in this study recorded higher efficiency scores in the post-concession period compared to the pre-concession period
- All of the ports still have considerable input slacks, while output slacks have declined significantly in the post-concession period indicating improved output optimization in the latter period.
- Apapa has considerable input slack with respect to number of vessels calling at the port, indicating the need to further diversify traffic away from this busy port.
- Some private terminal operators have challenges with infrastructure, especially the quay area, and this has compromised their processes.
- There were complaints of the non-linkage of Tincan Island Port to the standard gauge rail.
- Majority of port users' rated all issues germane to quality of service at the ports as 'good' in the post-concession period compared to the pre-concession period.
- Maritime Workers Union noted that workers' welfare conditions need improvement. Moreover, road access to ports are a tedious challenge for maritime workers and affect their efficiency in service delivery to end users.
- The financial performance analysis for private terminal operators in the period 2013-2017 was mixed. While some posted negative net profits, others were posted net profits in the positive zone. while two did not have net profit data.

4.3 Aviation Ground Handling

- Employment in aviation ground handling increased between 2013 and 2015 and declined from 2016 (during the recession), through to 2018.
- Available data showed a combined revenue contribution of about N6billion to the Federal Government from GHCs over the period 2011-2016
- Number of passengers handled by GHCs trended upward for most of the period
- There is reduction in average time spent on most ground handling activities in the post-privatization period, relative to the pre-privatization period.

- GHCs have challenges with airport infrastructure which statutorily fall under the purview of FAAN. They also complained that the companies are not prioritized in policies regarding incentives such as rebates or concessions.
- Privatisation had positive impact on financial performance of the aviation Ground Handling Companies. NAHCO experienced upswing in revenue and profit and most other service delivery parameters from 2014-2018. SAHCO equally experienced improvement in the volume of business as evident from the apron/ramp utilization figures.

4.4 Conclusion

This study assessed the reform/privatisation programme in the transport sector (Maritime & Ground Handling Companies). The overriding conclusion from the study is that the privatization exercise is positively associated with relatively improved enterprise performance particularly in relation to cargo throughput levels, vessel turn-around time, port traffic, port terminal efficiency and average time spent on ground handling activities.

4.5 Recommendations

Private terminal operators and Ground Handling Companies (GHCs) in the maritime and aviation sub-sectors operate within the wider sectors context. In order to ensure that private firms achieve more efficient performance, related government agencies such as NPA and FAAN should provide a conducive operating environment for firms' operations. Dilapidated Quay walls need major repairs at Tincan Island port, in addition, standard gauge rail connection can be extended to the Tincan port to ensure that it is not excluded from the competitive edge to be conferred by this intermodal connection. Road access to ports must be prioritized for repairs and traffic control by the Ministry of Transport. Airport infrastructure and equipment also need improvement to enable GHCs improve on the efficiency of ground handling services. Like airlines, GHCs need to be prioritized for incentives such as rebates and concessions in the industry.

An improved operating environment for private enterprises will enhance enterprise efficiency and improve their performance on all fronts. Improved financial performance of enterprises will result in increase in remittances by these firms to government in the form of taxes and will propel positive sectoral and ultimately economy wide effects.

ANNEXURE 1
METHODOLOGICAL NOTES

PORT TRAFFIC DISTRIBUTION

The Overall Distribution Index (ODI) based on nodes is an entropy measure that measures the extent to which total interaction (in this case port traffic represented by cargo throughput) is distributed evenly across a network. Our nodes in this case refer to each of the six port locations, and the network is the entire national port network comprising all six ports.

The equation is given as:

$$ODI_n = -\sum_{i=1}^{n} \frac{(Zi)\ln ln\,(Zi)}{In(n)}$$

Where Zi is the share of traffic associated with port i in the total quantity of traffic and n is the number of nodes in d network. A value of 1 indicates an equal distribution over the n nodes, while small values point to the presence of hierarchical differentiation or concentration of traffic in a few nodes.

PRE-CONCESSION VERSUS POST-CONCESSION PORT- BASED EFFICIENCY ANALYSIS

Data Envelopment Analysis (DEA), developed by Charnes et al (1981) uses a linear programming approach to measure efficiency of Decision Making Units (DMUs) based on input and output variables. DEA allows for the estimation of inputs and outputs as a non- parametric method of measuring efficiency as against the use of parametric methods making use of a frontier which represents the best practice. DEA represents production units and or firms as DMU. It provides analyses of efficiency by evaluating each DMU and measuring performance relative to an envelopment surface comprising of other DMUs. Efficiency scores (theta) range from 0-1, with 1 (100%) representing the most efficient DMU and 0, the least efficient. In this first DEA analysis which compares port efficiency in pre-concession and post-concession periods, each port is reckoned as a DMU.

Assuming we have X inputs and Y outputs used by P DMUs (ports), for the i^{th} DMU, we will represent X and Y as vectors of input and output respectively, and as such the vectors could be represented as x_i and y_i. Thus, the X x P input matrix will be X, and the Y x P output matrix will be Y together representing the data of all Ports (DMUs). Data Envelopment Analysis (DEA), being a non-parametric method of measuring efficiency uses the linear programming or mathematical programming in determining the efficiency of decision making units (DMUs). DEA provides

analyses of efficiency by evaluating each DMU and measuring performance relative to an envelopment surface comprising of other DMUs.

1) **Variables for relative efficiencies of ports**

$\max z = vx_j - (v_j)^*$ (1)

subject to. $uy_j = 1$

$-vX - uY - (v_j e)^* \geq 0$ (2)

$u \geq 0,\ u \geq 0$, (v_j is free in sign)

however the dual is max μ

subject to: $x_j - X\lambda \geq 0$ (3)

$\mu y_i - Y\lambda \leq 0$ (4)

$((e\lambda = 1)^*$ for $\lambda \geq 0$.

Variables for input-oriented DEA

	OUTPUT
1	CARGO THROUGHPUT (TONS)
	INPUT (FIXED)
1	TOTAL QUAY LENGTH (METRES)
2	BERTH AREA (HECTARES)
	INPUT (VARIABLE)
3	NUMBER OF VESSELS BERTHED
4	BERTH OCCUPANCY (%)
5	VESSEL TURN AROUND TIME (DAYS)

Table A. 1 VRS-OUTPUT Oriented DEA Port Based Efficiency Results: Pre Concession Years (2001-2005)

S/N	Ports	Year	RANK 1	Theta (Θ)	Average (Θ)	Rank 2 by ports	Slacks						Return to Scale (RTS)
							No. Of vessels	Quay length (m)	Berth Area (ha)	Turnaround time (days)	Berth Occupancy (%)	Cargo Through Put	
							I_V	I_Q	I_E	I_T	I_B	O_C	RTS
1	Apapa	2001	14	0.3439	0.387	3rd	189.9500	0	0	3.0302	8.0232	352668	IRS
2	Apapa	2002	13	0.3592			162.1320	0	0	7.5732	9.6779	363039	IRS
3	Apapa	2003	12	0.3737			0	140.2930	0	6.1065	2.9653	243364	IRS
4	Apapa	2004	10	0.4359			0	432.8940	3.7423	5.0612	7.1925	751063	IRS
5	Apapa	2005	11	0.4225			201.6970	0	0	5.1733	0.9569	324140	IRS
6	Tincan	2001	24	0.1175	0.2957	4th	0	99.0674	3.6537	0.5359	0.7784	0.1289	
7	Tincan	2002	22	0.1277			0	180.633	6.6337	0.7803	2.4238	0.0728	
8	Tincan	2003	1	1.0000			0	0	0	0	0	0	
9	Tincan	2004	25	0.1052			6.6643	78.5859	2.8982	0	0.4237	0.0014	
10	Tincan	2005	21	0.1279			3.8970	117.9070	4.3485	0	0.9846	0	
11	Port Harcourt	2001	17	0.2658	0.2608	5th	44.9137	0	2039.49	2.5463	18.6214	0.0940	
12	Port Harcourt	2002	16	0.2770			51.2375	0	2125.39	3.1355	19.9902	0.0547	
13	Port Harcourt	2003	15	0.2797			54.8195	0	2146.34	4.0532	21.1831	0	
14	Port Harcourt	2004	18	0.2426			27.1630	0	1861.33	2.6126	16.0293	0	

15	Port Harcourt	2005	19	0.2391			22.7082	0	1834.60	2.3551	14.9192	0	
16	ONNE	2001	9	0.5090	0.4622	2nd	127.8580	0	0	1.1360	10.6670	0.014	
17	ONNE	2002	8	0.5722			168.9270	0	0	3.3544	22.5905	0.1678	
18	ONNE	2003	5	1.0000			317.2080	0	0	0.8519	50.8880	5798690	IRS
19	ONNE	2004	23	0.1213			48.0640	0	0	0.1155	5.9609	0	
20	ONNE	2005	20	0.1436			28.0227	0	0	0.3649	6.7625	0	
21	Calabar	2001	30	0.3082	0.1138	6th	1.2116	0	6155.01	0.1198	0.0130	0.0027	
22	Calabar	2002	29	0.0399			0	1.8773	7966.21	0.1552	0.0958	0.0005	
23	Calabar	2003	28	0.0456			12.7480	0	9114.35	0.1249	0.1452	0	
24	Calabar	2004	26	0.0942			0	21.5633	18806.00	0.3918	0.9484	0.0049	
25	Calabar	2005	27	0.0814			13.1269	0	16250.70	0.0835	0.5038	0	
26	Warri	2001	1	1.0000	0.8938	1st	0	0	0	0	0	0	
27	Warri	2002	1	1.0000			0	0	0	0	0	0	
28	Warri	2003	6	0.8391			0	0	0	1.6240	3.3821	0.3490	
29	Warri	2004	1	1.0000			0	0	0	0	0	0	
30	Warri	2005	7	0.6301			31.8867	0	0	1.3241	3.4486	0	

Table A. 2 VRS-OUTPUT Oriented DEA Port Based Efficiency Results: Post Concession Years (2013-2017)

	Ports	Year	Rank 1	Theta (Θ)	Average (Θ)	Rank 2	Slacks						
							No. Of vessels	Quay length (m)	Berth area (ha)	Turnaround time (days)	Berth Occupancy (%)	Cargo Through Put	Returns To Scale
S/N							I_V	I_Q	I_E	I_B	I_T	O_C	RTS
1	Apapa	2013	15	0.7274			794.3040	1495.5000	55.7613	9.2014	7.2739	0.7774	IRS
2	Apapa	2014	14	0.7382			800.8950	1517.6400	56.5867	9.8397	8.2673	0	IRS
3	Apapa	2015	16	0.7241			718.2550	1488.6400	55.5055	18.4270	10.8607	0.6943	IRS
4	Apapa	2016	18	0.6629			514.4240	1362.9600	50.8192	7.4578	5.8337	0	IRS
5	Apapa	2017	17	0.6829	0.7071	3rd	502.608	1404.0200	52.3504	7.8601	9.6288	0.1842	IRS
6	Tincan	2013	19	0.6419			819.3140	1632.4300	78.7395	20.2161	0	0.3843	IRS
7	Tincan	2014	11	0.9593			533.0300	813.16300	39.2226	29.5804	0	0.7440	DRS
8	Tincan	2015	13	0.7540			949.5590	1757.7400	84.7839	18.1781	0	773492.0000	IRS
9	Tincan	2016	1	1			0	0	0	0	0	0	CRS
10	Tincan	2017	8	1	0.8710	2nd	0	602.0700	25.8461	2.5183	0	241968.0000	IRS
11	Port Harcourt	2013	21	0.3290			69.3268	0	2529.1300	9.2964	0.0573	0	CRS
12	Port Harcourt	2014	20	0.3290			89.0916	0	3189.6300	20.2000	0.8854	0	CRS
13	Port Harcourt	2015	22	0.4149			57.1590	0	2459.7400	11.4112	0	0	CRS
14	Port Harcourt	2016	23	0.3199			37.1921	0	2049.7000	6.2947	0	0	CRS
15	Port Harcourt	2017	24	0.2666	0.3319	5th	21.8926	0	1841.4300	3.5342	0	0	CRS
16	ONNE	2013	9	0.2395			128.0350	0	0	0	0	0	CRS

17	ONNE	2014	1	0.9679			0	0	0	0	0	0	CRS
18	ONNE	2015	30	0.1048			0.5940	0	0	0.2463	0	0	CRS
19	ONNE	2016	1	1			0	0	0	0	0	0	CRS
20	ONNE	2017	1	1	0.6624	4th	0	0	0	0	0	0	CRS
21	Calabar	2013	29	0.1450			5.8608	0	28953.3000	1.6957	0.3914	0.0245	CRS
22	Calabar	2014	25	0.1976			17.8713	0	39469.6000	1.8985	0.5731	0.0888	CRS
23	Calabar	2015	28	0.1780			7.1971	0	35554.9000	9.097	0.0534	0.0546	CRS
24	Calabar	2016	26	0.1950			53.5130	0	38943.2000	1.5007	0.0974	0	CRS
25	Calabar	2017	27	0.1831	0.1800	6th	41.0904	0	36564.9000	0.7371	0.1830	0	CRS
26	Warri	2013	1	1			0	0	0	0	0	0	CRS
27	Warri	2014	10	0.9648			151.079	0	0	0	12.2446	0.0257	DRS
28	Warri	2015	12	0.8485			67	735.475	0	0.0849	1.3577	0	IRS
29	Warri	2016	1	1			0	770.0950	0	0	0	0	CRS
30	Warri	2017	1	1	0.9627	1st	0	0	0	0	0	0	CRS

POST-CONCESSION TERMINAL BASED DEA

	OUTPUT
1	CARGO THROUGHPUT (TONS)
	INPUT (FIXED)
1	TOTAL QUAY LENGTH (METRES)
2	STACKING AREA (SQUARE METRES)
3	STORAGE AREA (SQUARE METRES)
4	DRAUGHT (METRES)
	INPUT (VARIABLE)
5	NUMBER OF VESSELS BERTHED
6	BERTH OCCUPANCY (%)
9	VESSEL TURN AROUND TIME (DAYS)

Table A. 3 VRS-OUTPUT Oriented DEA Terminal Based Efficiency Results: Post Concession Years by Port Terminals (2013-2017)

	Terminals	Rank 1	Theta (Ɵ)	Averag e (Ɵ)	Rank 2	Slacks								
						No. of vessels	Berth Occupanc y (%)	Average Turnaround time (days)	Quay length (m)	Storage Area (square meters)	Staking Area (square meters)	Draught (meters)	Cargo Through Put	Returns To Scale
S/N	Name of Terminal/Core Investor			0.5654		I_V	I_BT	I_TT	I_QL	I_STA	I_SK	I_DT	O_C	RTS
1	Apapa Bulk Terminal (A& B)	1	1		1st	0	0	0	0	0	0	0	0	CRS
2	ENL Consortium (Apapaterminlas C&D)	1	1		1st	0	0	0	0	0	0	0	0	CRS
3	Greenview Nigeria ltd(Termnal E)	1	1		1st	0	0	0	0	0	0	0	0	CRS
4	APM Ltd (Apapa Container Terminal)	10	0.434		4th	956.46	0	20.8857	103.756	794.5210	57957..3000	0.1556	0.0613	CRS
5	Josephdam Nigeria Ltd (Tin Can Terminal A)	1	1		1st	0	0	0	0	0	0	0	0	CRS
6	TICTC (Tin Can Island B)	1	1		1st	0	0	0	0	0	0	0	0	CRS
7	Port and Cargo (Tincan Island Terminal C)	16	0.1187			30.3837	0	0	39.2273	0	12523.8000	0.0833	0	CRS
8	Five Star Logistics (RORO)	12	0.2220		6th	78.2353	0	0	12.0599	0	15046.7000	0.7076	0.0569	CRS
9	Associated Maritime Service (AMS)	13	0.2089			0	20.0463	2.6006	64.3167	1743.1100	6395.0100	0	7725.74	IRS
10	Warri Canal Berth	18	0.0921			0	14.5845	3.4129	28.8125	267.9040	11051.0000	0.0608	0.0162	CRS
11	Intels Nigeria Ltd (Warri NEW Port)	17	0.1178			0	3.4996	2.7658	51.8441	783.6820	15741.2000	0.6902	0	CRS

12	Intels Nigeria Ltd (Warri Old Port)	1	1		1st	0	0	0	0	0	0	0	0	CRS
13	BUA	8	0.7711		2nd	7.5850	0	0	117.8280	0	19055.8000	0.5172	32415.5	IRS
14	PORT AND Terminal Operators Nig. Limited	9	0.66626		3rd	153.2179	0	0	93.7511	1850.1800	29693.5000	0	509445	IRS
15	INTELS (Calabar Terminal A)	15	0.1952			0	7.7257	1.6382	66.0088	1068.9000	7807.8700	0.5938	0	CRS
16	ECM Terminals Ltd (Calabar Terminal B)	19	0.0501		1st	219.234	0	0	145.7920	4009.24	64344.1000	0	1636869	IRS
17	Shoreline Logistics (Calabar Old Port)	20	0.0328			22.688	7.3999	0.2632	1.0231	0	0	0	0	CRS
18	INTELS (FOT A)	11	0.2442		5th	37.0569	0	0	256.707	10558.3000	115877.0000	0	31142.6000	IRS
19	INTELS (FLT, B)	14	0.2043			0	0	0	267.804	12881.1000	249969.0000	0	24706.2000	IRS
20	Brawal Oil Services Limited (FLT A)	1	1		1st	0	0	0	0	0	0	0	0	CRS

REFERENCES

Adaramola O.A, Obalade A.A, and Adekanbi O.K (2018) Impact of Privatization on the Development of Nigerian Capital Market: A Reassessment. ACTA Universitatis Danubius, vol 14, no.6, 2018.

Bureau of Public Enterprises (BPE) (2020) Presentation to BPE management committee on 'Fiscal Benefits of the Privatization of the Nigerian Ports' by Director, Post Transaction Management Department. August 20, 2020. DG conference room, BPE.

Bureau of Public Enterprises (BPE) (undated) –R1 Ports PTMD Presentation on Port Analysis to Enterprise Business Review Committee. BPE.

Charnes, A.; Cooper,W.W.; Rhodes, E. Evaluating Program and Managerial E_ciency: An Application of Data Envelopment Analysis to Program Follow Through. Manag. Sci. **1981**, 27, 668–697.

Lagos Chamber of Commerce (LCCI) (2016) Nigeria: Reforming the Maritime Ports. LCCI and FDC. October, 2016.

Nigerian Ports Authority (NPA) (2013) Abstract of Port statistics 2013. NPA. Lagos.