Fitch Solutions

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# Nigeria

## Logistics Risk Report

### Includes the Fitch Solutions Operational Risk Index

# Contents

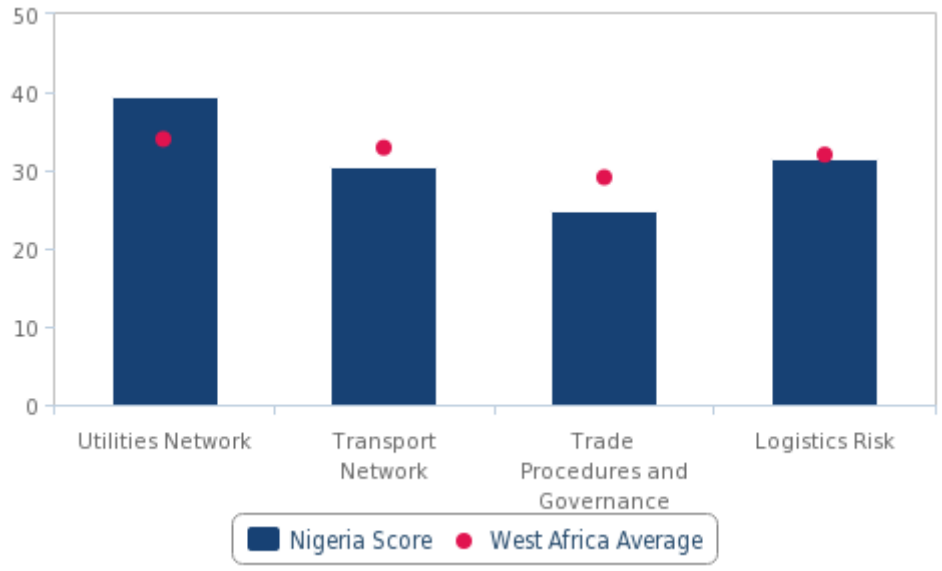
# Logistics Risk

## Logistics Risk Key View

***Key View:*** *Nigeria's large, young and fast-growing urban population presents significant retail and e-commerce opportunities for investors, while rich natural resources, including oil and agricultural commodities make it an important trade hub in West Africa. However, the country's attractiveness to investors is impaired by the poor logistics sector, which has been strained by the country's severe energy crisis and years of under-investment in utilities and transport infrastructure. The transport network suffers from severe capacity constraints with delays prevalent across all modes, and the utilities sector remains vastly inadequate and unable to keep pace with growing demand. Trade bureaucracy is extensive and investors face additional costs due to pervasive corruption and security costs, further encumbering the ease of importing and exporting goods through the country. Nigeria therefore receives a low overall score in our Logistics Risk Index, at 31.5 out of 100 ranking it in a middling ninth place out of 16 West African states below Ghana and Senegal.*

Weak Utilities, Sub-Par Transport Quality And Onerous Trade Barriers Weigh On Score

Nigeria & Regional Average – Logistics Risk Scores




*Note: 100 = lowest risk; 0 = highest risk. Source: Fitch Solutions Logistics Risk Index*

**Trade Procedures And Governance (24.8/100):** Complex and costly trade compliance requirements, inadequate transport infrastructure and pervasive corruption at key entry points and along inland routes significantly dent Nigeria's logistical appeal. In addition to high levels of trade bureaucracy, firms operating in the country are exposed to hidden variable costs associated with congestion at the country's ports and on major inland routes. High security risks, rampant smuggling and extensive border controls further elevate logistical costs and raise risk of delays and rent-seeking activities. These risks further inflate the price of goods along the value chain and significantly erode competitiveness in import-reliant sectors such as commercial farming, retail and manufacturing activities.

**Transport Network (30.5/100):** Nigeria's supply chains are overly reliant on the country's poor-quality road network and congested ports, which heighten costs for businesses due to the high likelihood of disruption caused by congestion, traffic accidents, security issues and energy and fuel shortages. Businesses have limited alternatives, as shown by the current parlous state of its railways, although we note that ongoing large-scale investment will make rail freight an increasingly attractive alternative option in the long run. As competition to establish regional leadership for port capacity ramps up, mainly from expansive projects taking place in nearby Ghana, Cameroon and Côte d'Ivoire, Nigeria is also hoping that once its new megaports come online,

combined with the increasing involvement of global logistics firms, it too will be able to secure a position as one of the region's major trans-shipment destinations. For the time being, some goods bound for Nigeria are being routed inland through its neighbours, rather than arriving directly on its shores due to these interlinking risks, which raising lead times due to frequent congestion.

**Utilities Network (36.3/100):** Nigeria offers investors one of the largest and fastest growing consumer markets in the wider SSA region, however investor sentiment towards the country has cooled in recent quarters, with electricity and fuel shortages proving to be a costly impediment to industrial activity, while the economic impact of the volatility in global oil prices has exacerbated FX liquidity challenges, which in turn affects energy imports. The inconsistency of the utilities supply causes significant disruption to business activity and raises costs as most firms are reliant on private electricity generators and water facilities. Over the short to medium term, the utilities shortfall is likely to intensify due to rapid urban population growth and increasing demand from Nigeria's energy-intensive industries, while investment in supporting infrastructure fails to keep pace with demand due to fiscal and regulatory constraints.

**NIGERIA - LOGISTICS RISK**

| | Utilities Network | Transport Network | Trade Procedures and Governance | Logistics Risk |
|---|---|---|---|---|
| Nigeria Score | 39.5 | 30.5 | 24.8 | 31.5 |
| West Africa Average | 34.0 | 32.9 | 29.1 | 32.0 |
| West Africa Position (out of 16) | 2 | 8 | 12 | 9 |
| SSA Average | 36.6 | 32.8 | 30.4 | 33.5 |
| SSA Position (out of 48) | 16 | 24 | 31 | 24 |
| Global Average | 49.0 | 48.8 | 49.4 | 49.3 |
| Global Position (out of 201) | 145 | 150 | 177 | 165 |

*Note: 100 = lowest risk; 0 = highest risk. Source: Fitch Solutions Logistics Risk Index*

The Operational Risk Index quantitatively compares the challenges of operating in 201 countries worldwide. The index scores each country on a scale of 0-100, with 100 being the lowest risk state. The entire index consists of 24 sub-index scores and 84 individual surveys and datasets, which all contribute to the headline score. A full methodology can be found at the end of the report.

# Logistics Risk SWOT

## SWOT Analysis

**Strengths**

- Nigeria has vast natural resources such as oil and freshwater.
- Relatively extensive road networks offer connections between major cities and ports.
- Good internet connectivity and a large telecommunications market improve the ease of doing business.

**Weaknesses**

- A range of largely weak regulation and security-related issues affecting the oil and gas sector lead to frequent shortages of power and fuel.
- Fuel prices are comparatively high, despite the country's oil wealth.
- The road network is poorly maintained and suffers from chronic congestion, while a high rate of traffic accidents and security issues such as armed robbery significantly increase risks of supply chain disruption.
- High levels of trade bureaucracy lead to long delays, increasing costs for businesses exporting and importing.

**Opportunities**

- The development of the air cargo sector will offer investors new supply chain opportunities.
- Ongoing reform of port services and investment in new infrastructure will shorten export and import lead times.
- Investment in the railway network will reduce the burden on Nigeria's roads and provide some diversification options for supply chains.

**Threats**

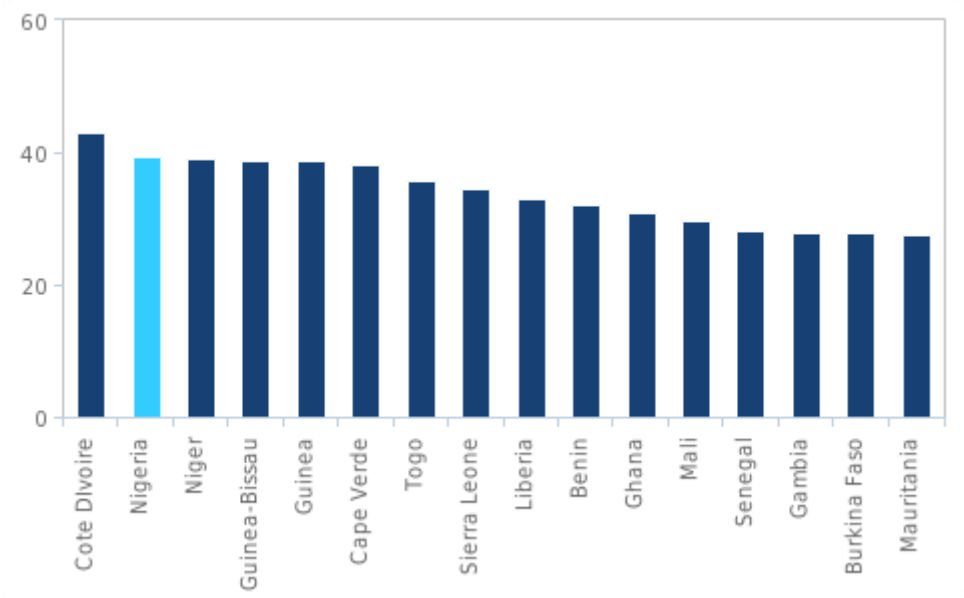
- Nigeria's struggling transport and utilities infrastructure will be put under further pressure by expanding energy-intensive industries and a growing population, increasing the likelihood of shortages, while infrastructure developments slowly come online.
- Security threats in some parts of the country hinder the maintenance of roads and utilities, and increase the likelihood of supply chain disruption due to attacks.
- Strikes and chronic fuel and FX liquidity challenges continue to disrupt activity at Nigeria's ports and airports.

# Utilities Network Analysis

***Key View:*** *Nigeria offers investors one of the largest and fastest growing consumer markets in the wider SSA region, however investor sentiment towards the country has cooled in recent quarters, with electricity and fuel shortages proving to be a costly impediment to industrial activity, while the economic impact of the volatility in global oil prices has exacerbated FX liquidity challenges, which in turn affects energy imports. The inconsistency of the utilities supply causes significant disruption to business activity and raises costs as most firms are reliant on private electricity generators and water facilities. Over the short to medium term, the utilities shortfall is likely to intensify due to rapid urban population growth and increasing demand from Nigeria's energy-intensive industries, while investment in supporting infrastructure fails to keep pace with demand due to fiscal and regulatory constraints. Consequently, Nigeria earns a low score of 39.3 out of 100 for Utilities Network, reflecting the severe deficit of adequate utilities infrastructure, placing it in a low 19th place out of 48 states in SSA, behind Ghana, Kenya, Uganda and Cameroon. The country's sub-regional ranking of third place in West Africa reflects the fact that these risks are endemic to the region, which further underpins the lack of reliable electricity and fuel import sources in close proximity.*

Unreliable Utilities And High Energy Costs Remain Key Pain Points

West Africa – Utilities Network




*Note: 100 = lowest risk; 0 = highest risk. Source: Fitch Solutions Logistics Risk Index*

### Latest Utilities Network Analysis

- Economic volatility, gas supply shortages and power utilities' liquidity problems will remain the largest barriers to improved power supply over 2018-2022. Furthermore, we maintain that investment in the power sector is unlikely to be forthcoming even as some of the economic challenges recede - on account of the huge risks to market entry and major structural problems all along the power sector value chain. Electricity distributors remain under significant financial pressure as they struggle to access power due to gas shortages at generation companies, and collect payment for what little electricity they can provide. This state of affairs has had a significant impact on Nigeria's government-owned power sector clearing house - Nigerian Bulk Electricity Trading (NBET).
- While Nigeria has a large refining capacity, a trend of poor maintenance, as well as supply disruptions, will keep utilisation rates low (where they averaged 16.5% in 2017). The removal of gasoline subsidies will give the refineries a measure of relief, incentivising production and making profits more achievable. The **Dangote** refinery is forecast to come online by 2022, adding 650,000b/d of extra capacity. Given the large size of the refinery, this should enable the country to become a net refined fuels exporter past 2020, provided the refinery does not encounter delays or crude supply outages and manages to function at a

relatively high utilisation rate.

- The enforcement of stricter fuel quality standards in Nigeria will provide a modest drag on diesel demand due to elevated import prices of high-quality fuel being passed to the consumer. Headwinds to gasoline demand will be negated by state-set gasoline prices, with the government set to shoulder the burden of higher import costs. Businesses can expect shortages of fuel in the formal market, particularly while domestic refining capacity remains limited.
- The outlook for the power distribution sector will hold a negative outlook in the near term, as distribution companies (DISCOs) struggle to access power (due to gas shortages at generation companies) and collect payment for what little electricity they can provide due in part to a culture of non-payment for electricity. This dynamic, which has left the companies with huge revenue shortfalls, has been exacerbated by the fact that tariffs reviews have not kept pace with rising dollar costs (which have been worsened by weakness in the naira) and have been challenged in the Nigeria courts. Despite government cash injections, these circumstances will continue to starve the sector of the cash liquidity needed to operate efficiently, which in turn will feed into unreliable supplies for end-users. Recent changes to government policies relating to the DISCOs are unlikely to solve any of these liquidity problems. The DISCOs have reportedly declared force majeure after the Nigerian Electricity Regulatory Commission (NERC) stated that eligible electricity customers will now be able to bypass the distribution companies completely and buy electricity directly from the generation companies themselves. The government has pursued this legal change in an effort to open up the electricity supply market to greater numbers of third parties and create competition to the underperforming DISCOs. The DISCOs have, however, argued that the change prevents them from fulfilling their obligations under the performance agreements they have signed with the Bureau of Public Enterprises. Amid confusion about how exactly consumers will bypass the DISCOS and Transmission Company of Nigeria, the government will have to allay concerns that the policy will not lead to the collapse of the electricity grid - something that will remain a central issue over 2019.

## Utilities Cost And Availability

Nigeria's underdeveloped power sector remains a significant bottleneck to broad-based economic development. Businesses face chronic shortages of electricity and fuel, with supply currently failing to reach the majority of the population. The dearth of reliable cost-efficient energy supplies means Nigeria's manufacturing sector will see only a slow improvement over the medium term which will significantly drag on real GDP growth. The country has been unable to take advantage of its vast oil and gas resources for electricity generation and petroleum production due to a range of issues, which include a lack of investment, inadequate infrastructure, poor regulation and management as well as damage to pipelines from vandalism, terrorism, thefts and flooding. The use of ICT in trade and retailing activity continues to rise in Nigeria, with technology platforms now widely accepted as a means of doing business. Over the medium term a combination of rapid population growth, rising literacy and income levels as well as increasing investment in telecoms and sector liberalisation will boost financial inclusion and internet access, thereby driving e-commerce growth. With regard to water, however, a growing population, weak infrastructure, security risks and the adverse effects of climate change are exacerbating water shortages. Consequently, these risks combined with poor water management and rising pollution levels have led to over extraction and high pollution, which will continue to deplete the country's water resources. Overall, Nigeria is ranked between Ghana and Senegal in second from last place out of 16 states in West Africa (and 187th out of 201 state worldwide)for Availability of Utilities, with a score of 23.9 out of 100.

The costs of utilities from the main distribution networks are low, however high reliability risks, particularly in terms of power, necessitate electricity auto-production via solar panels and diesel generators. The need for back-up power capacity and the additional cost of procuring diesel fuel significantly weigh on profitability in the country's non-oil sectors. The rise in demand for water services has not been accompanied by an increase in the delivery of water supply, sewerage and sanitation services which in turn raises labour risks and risks for firms in water-reliant sectors. Although internet penetration is growing, the energy shortage and regulatory rigidity keep connectivity costs high. Consequently, Nigeria scores 54.7 out of 100 for Cost of Utilities, ranking first in West Africa, yet a low 93rd out of 201 countries globally. Though Nigeria's energy sector is being reformed, investor confidence has been shaken by tariff and regulatory uncertainty, indicating that larger-scale reform will be necessary to bridge the energy deficit in the long run.

## Electricity

Despite considerable hydrocarbon wealth, Nigeria's power infrastructure is significantly inadequate as a result of years of chronic maladministration and underinvestment in the power generating sector. Manufacturers and businesses regularly cite unreliable power supply as the biggest constraint to doing business in Nigeria - with reports in early 2016 indicating that power supply had fallen dramatically as a consequence of oil and gas shortages. Rising demand, ageing transmission facilities and gas supply shortages, exacerbated by pipeline vandalism in the Niger Delta, are the primary problems that have proven to be a major disincentive for investors given that blackouts are frequent. Even in urban areas, many businesses rely on diesel generators that are expensive to run and maintain, increasing cost outlays for investors. Going forward, the process of increasing private sector participation in the power sector is expected to increase generation and capacity. However, without adequate reforms and improved revenue collection mechanisms, progress in this regard will remain slow, keeping operating costs high for end-users.

## ELECTRICITY RISKS

### Source

Energy mix (2018 **Fitch Solutions** estimates): Hydropower (24.8%)Thermal: (74.7%) Non-hydropower renewables generation (0.5%)

- Nigeria is predominantly reliant on thermal energy from natural gas. While Nigeria's wealth of natural resources means that the country has the potential to be energy self-sufficient; electricity generation continues to fall well short of demand, leading to frequent blackouts.
- Over-dependence on gas-fired power generation has resulted in electricity supply disruptions due to gas shortages as some gas producers favour exports, while militant attacks can sporadically cut off supplies. Due to the country's grid and capacity limitations the use of private fuel-powered generators and solar panels is common, raising operating costs.
- Nigeria's Economic Recovery and Growth Plan (ERGP) for 2017-2020 outlines the government's plan to invest in the construction of the Mambilla hydropower project, improved transmission grid infrastructure, as well as to reach financial close on 15 solar projects.
- The **Fitch Solutions** Key Projects Database shows Nigeria currently has 20GW of capacity in the planning phase. However, little of this capacity is moving into the construction phase, such that progress towards bridging Nigeria's huge power deficit is likely to be slow.

### Availability

45% of the population has access to electricity (2017 **IEA** estimates)

- Nigeria has the fifth highest electrification rate in West Africa, ranking below Cape Verde, Ghana, Cote d'Ivoire and Senegal. Years of underinvestment in utilities means that gas pipelines, transmission networks and power plants are of low quality, and the supply does not reach the majority of the population, where rural electrification is particularly low at 36%. As a result, businesses will be limited to establishing bases in larger cities, and even then will most likely be reliant on private generators due to the inconsistency of the power supply.
- According to a World Bank survey on manufacturing firms operating in the country, an average of 77.6% of firms report experiencing frequent power outages. As a result, 70.7% of firms own or share a private generator.
- Businesses setting up in Nigeria face an average of 149 days to get connected to the electricity grid, which is uncompetitive against regional peers where it ranks fourth from last out of 16 West African states, ahead of only Liberia and Guinea-Bissau.
- Despite privatisation efforts, many distribution companies continue to struggle to access power (due to gas shortages at generation companies, as well as grid inefficiencies) and collect payments, thereby raising viability concerns.

### Reliability

Typical monthly power outages: 32.8 Value lost to electrical outages: 15.6% of total sales Transmission and distribution losses: 8.7% of total output

- Gas shortages can cause blackouts. In addition, natural gas is plagued by risks, including a lack of ability to efficiently capture the resource, which leads to a high level of wastage and flaring, and damage to pipelines.
- Much of the country's transmission system is ageing and increasingly unreliable and often causes system collapses. Power shortages mean that businesses experience frequent load shedding with almost daily power outages. This necessitates back-up generation and considerable machinery maintenance costs, particularly in the manufacturing sector. Power shortages can typically last around 11-12 hours each day and, according to the World Bank, 58.8% of power is derived from a generator (for those firms that use generators).
- Unreliable electricity supply raises the cost of doing business and creates a huge burden on the country's industrial development and the wider economy. As demand for electricity continues to rise, the slow pace of power plant developments heightens the risk of outages, extending potential losses over the medium term.

### Cost

### Source

| | |
|---|---|
| USD0.11 per kilowatt hour (KWh) | • Though official electricity costs are moderate, standing below the regional average of USD0.19/KWh for West Africa, the lack of a reliable mains electricity supply is an impediment to growth in Nigeria's industrial sector in particular. Companies frequently need to rely on backup diesel-fuelled generators, which run at a cost of USD0.30-0.50/KWh (2016 estimate).<br>• Such significant initial outlays and running costs are unsustainable for energy-intensive and many smaller firms. This may draw more firms to countries such as Ethiopia where the face cheaper (USD0.02/KWh) more reliable mains electricity supplies.<br>• Other key aims of the EGRP include: introducing cost-reflective electricity tariffs, resolving debts between ministries, departments and agencies (MDAs) and the distribution companies and supporting the rollout of a nationwide metering programme.<br>• Though privatisation in the energy sector will improve operational efficiency in the long run, corruption remains a major problem, making policy implementation difficult, while tariff reform (which will lead to higher prices for end-users) will have to be introduced in order to raise turnover for independent power suppliers and make investment in new generation capacity more attractive. |

### Other Risks

- The country faces risk of attacks from regional terrorist groups and especially militants in the Niger Delta that may target critical infrastructure or kidnap and endanger key personnel, stalling development and constraining fuel supplies. Violent attacks by extremist militants, cyclical inter-ethnic violence as well as regulatory weakness across the patchwork of federal states in Nigeria are key factors deterring investment in power generation and transmission assets across vast swathes of the north.
- Skewed pricing policies, liquidity constraints, burdensome regulations and an inefficient billing and metering system dent the attractiveness of the power sector to foreign investors, which will prolong capacity constraints.
- Vested interests have played a part in slowing the reform process, especially as the generator and diesel market in the country is worth an estimated USD14bn annually. Gas producers also favour exporting gas due to its higher price value on international markets, which contributes to further shortages.

### Planned Projects

- Over 2017 and 2018, we expect direct government financing of transmission grid infrastructure along with small-scale renewables projects to be bright spots in the Nigerian utilities sector. In Nigeria's ERGP for 2017-2020, the government notes that goals for the power sector include direct investment in the Mambilla hydropower plant as well as in transmission grid infrastructure. However, growth will remain tepid as we expect that other areas of the ERGP, aimed at attracting private sector capital into financing new IPPs, will fall short as investors remain on the side-lines. Gas shortages, disputes with the new owners of privatised assets over tariffs, concerns about security and deep-rooted corruption and the country's much-maligned business environment all have the potential to stall progress.
- In August 2017, The Transmission Company of Nigeria (TCN) secured close to USD2bn for the rehabilitation of the national grid infrastructure and expansion of its power transmission capacity. This also will involve the revival of projects such as the Abuja Transmission Ring Project. The TCN is targeting up to 20,000 megawatts by 2020 and move such as these will improve energy security in the medium term.
- According to reports from November 2018, Russian nuclear energy corporation, Rosatom, stated that its negotiations for the construction of two 2.4GW nuclear power plants as well as a nuclear science and technology centre in Nigeria have reached an advanced stage.
- The Nigerian Federal Executive Council awarded a contract to **China Civil Engineering Construction**

**Source**

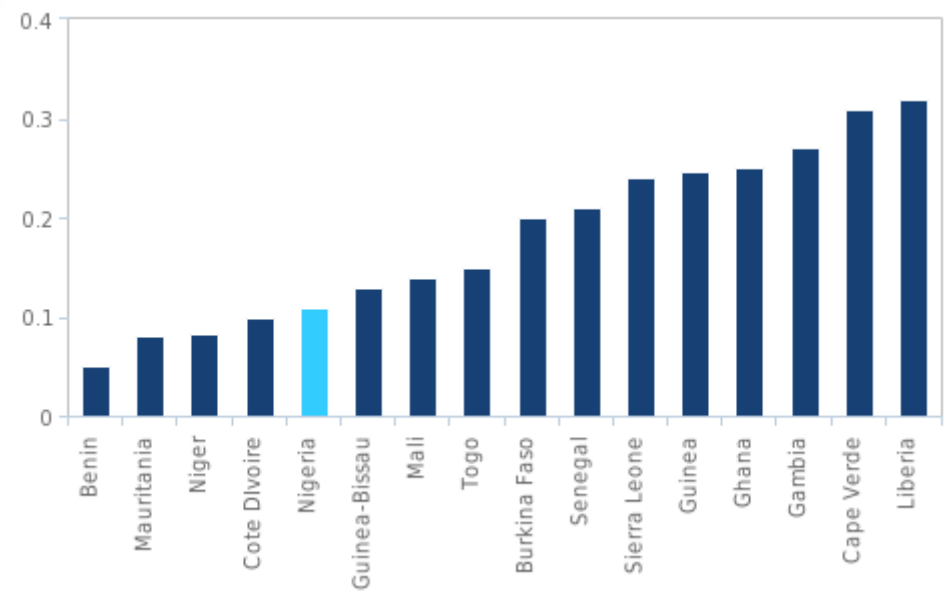
**Corporation** (CCECC) to build the 3.05GW Mambilla hydroelectric power plant. The scope of work includes building four dams and 700km of transmission lines, together with undertaking preparatory work. The USD5.8bn scheme will receive 85% of the funding from the Export-Import Bank of China, while the remainder will be provided by the federal government. Construction is slated to take about six years to complete.

- South Korean firm **Hyundai Engineering** has signed a USD330mn engineering, procurement and construction (EPC) contract with Kingline Development Nigeria for a 550MW gas fired power plant in Ondo. Under the deal, Hyundai will supply a 550MW gas turbine for the facility, which will be in Ondo State Industrial Park. The power plant is reported to be Hyundai's first EPC contract in Nigeria.
- In line with our view for the solar project sector to be some of the more active we have seen a number of projects move forwards. Nigeria's Kano state government signed a memorandum of understanding (MoU) with Dangote Industries and **Black Rhino Grou**p to build a 100MW solar park in the state. The two firms will jointly invest USD150mn in the scheme, called Dangote-Black Rhino Solar Power Plant. Construction is slated to start before end-2017.

*Source: World Bank, Fitch Solutions*

Reliability Risks Outweigh Benefits Of Low Mains Tariff Costs

West Africa – Electricity Costs (USD per KWh)




*Source: Fitch Solutions, World Bank*

## Fuel

Nigeria has suffered from fuel shortages for many years, with long queues at petrol stations a regular occurrence. Many of the factors that affect Nigeria's electricity supply also impact on the availability of fuel, with a lack of investment, inadequate refining capacity and damage to pipelines from theft and flooding all leading to recurrent fuel shortages. Inadequate domestic refining capacity means that the country is unable to take advantage of its vast oil reserves to produce refined petroleum. Nigeria therefore relies on imports of refined petroleum, largely from countries to which it exports its crude oil, despite holding vast oil reserves. Fuel shortages have a major impact on the logistics sector in Nigeria, as supply chains are reliant on road haulage to meet transport needs. The risk of fuel shortages may lead firms to procure supplies on the black market at a considerable premium, raising operational risks as the quality and prices may vary. Fuel consumption will rise in tandem with increasing vehicle ownership,

urbanisation, mains electricity supply constraints and industry growth. In addition, although subsidies keep the cost of fuel low, they encourage inefficient use, which further contributes to fuel scarcity, risks are exacerbated by fuel hoarding and sector-wide mismanagement. While there have been some notable reforms to the **Nigerian National Petroleum Corporation** (NNPC) that have been proposed, there is still a long way to go in order to create a transparent and profitable industry that encourages investment and helps Nigeria reach its hydrocarbon potential.

## FUEL RISKS

### Source

Vast domestic hydrocarbon resources, limited refining capacity necessitates significant fuel imports. Refining capacity: 445,000 b/d

- Nigeria has vast oil reserves, therefore, theoretically ensuring ample fuel supply to meet business needs over the long term.
- Nigeria has four refineries (one each in Warri and Kaduna and two in Port Harcourt) which could theoretically cover all of Nigeria's refined fuels domestic consumption and enable Nigeria to be a significant refined fuels net exporter. However, utilisation rates are low.
- Businesses face high costs and erratic supplies as Nigeria still relies on imports to support most of its consumption increasing its vulnerability to shortages if there is disruption to the supply chain.
- There is an ongoing drive to encourage private investment in refineries and liberalise the downstream sector. Going forward, Dangote Refinery is forecast to come online by 2022, adding around 650,000 b/d of extra capacity, easing fuel shortages.

### Availability

Average refinery utilisation rate: 5% (NNPC estimates) Refined Petroleum Net Imports: 219,000 b/d

- The country's main refineries have faced significant disruptions due to financing constraints, fresh attacks on pipelines and oil infrastructure and rampant corruption, hindering development.
- According to the NNPC, domestic fuel output meets only 9% of daily consumption of petrol, 24% of dual-purpose kerosene and 28% of automotive gas oil, with the rest imported from abroad, particularly from Europe, where risks of delayed supplies are exacerbated by the foreign currency constraints.
- We expect oil consumption to increase steadily from an estimated 306,000b/d in 2017 to 443,000b/d by 2026, led by the transport sector and the continued use of diesel power generators as back-ups to intermittent power supplies. Gasoline is the dominant fuel, with consumption forecast to be 203,450b/d in 2016, increasing to 284,000b/d in 2026. Kerosene, diesel and residual fuel are the secondary fuels in terms of consumption and are all set to steadily increase. Transport is the main sector driving fuels consumption growth, with total vehicle fleet expected to expand from 1.9mn in 2016 to 2.8mn in 2021.
- The transport sector is the largest contributor to fuel consumption, in addition to thermal power plants and diesel generators. However, many remote locations lack regularly serviced fuel stations, necessitating significant expenses in securing backup supplies en-route long-haul journeys and on-site at remotely located business premises.

### Reliability

- The import of refined fuel entails long and convoluted supply chains that are more susceptible to disruption, given decaying infrastructure, high terrorism and vandalism risks.
- Other factors exacerbating the scarcity of fuel include the country's reliance on private diesel generators for power, due to the irregularity of the electricity supply and inefficient usage. Shortage risks are exacerbated by

**Source**

panic buying and hoarding by consumers, striking oil workers and refinery issues.

- As the country remains highly reliant on the road network for freight transport, fuel shortages raise the risk of lengthy delays to supply chains, while logistics operators face inflated prices. This dents productivity in many sectors, including financial services, manufacturing and telecommunications among others.

**Cost**

USD0.57 per diesel litre (/l)

- The price of fuel in Nigeria is relatively inexpensive, less than the West Africa regional average of USD0.96/l, though uncompetitive against other OPEC states. However, fuel scarcity is a lingering concern, as the disruptions due to terrorist activity and hoarding of fuel supplies inflate prices beyond the stated pump price.
- In May 2016, the price of petrol was hiked 67.7% from NG86.5/l to NGN145.0/l. Despite the considerable increase we do not expect any material effect on consumption as consumers have been willing to pay NGN150-250/l on the parallel market. This has risen significantly even in US dollar terms, given the extent of FX risks and inflation.
- Consequently, despite the ostensibly low fuel prices available to businesses in Nigeria, fluctuation is likely and the actual cost of fuel may be far higher than the official price suggests, particularly during periods of scarcity. Going forward, further sector liberalisation will give the refineries a measure of relief, incentivising production and making profits more achievable.

**Other Risks**

- Due to regional insecurity there is a significant risk of piracy and terrorist attacks targeting oil storage, distribution and processing facilities.
- Strike action in the hydrocarbons and transport sectors will also disrupt supply chains and raise delays and storage costs. A strike by NNPC workers in March 2016, carried out in protest of the restructuring plans, worsened lengthy queues at the petrol pumps in major cities and highlighted the challenges that the government faces in its bid to reform the industry.
- The transport sector accounts for the largest share in Nigeria's refined fuels consumption. Electricity generation remains overwhelmingly gas-powered and accounted for 75% of electricity generation in 2018, followed by hydropower, which accounted for some 25% of power generation. Fuel use in power generation is expected to decrease over the coming years as gas supply grows and delivery becomes more consistent. However, given the unreliability of the Nigerian power sector, diesel is commonly consumed by private generators, to provide cover during the regular power outages.
- Gas producers sell a set quota of gas to the domestic market at a fixed non-commercial rate, which reduces the incentive to invest in costly gas infrastructure upgrades. Pipeline vandalism also serves as a deterrent to further investment, due to the cost of repairs and additional security measures needed to guard the vulnerable spots along the network.

**Planned Projects**

- The Dangote Group is also working on developing an USD11bn facility outside Lagos with a processing capacity of an estimated 650,000 barrels per day (b/d), expected to come online by 2018. These measures and developments bode well for businesses operating in the country as fuel costs are likely to be less volatile over time and more affordable, while shortages will be less frequent.

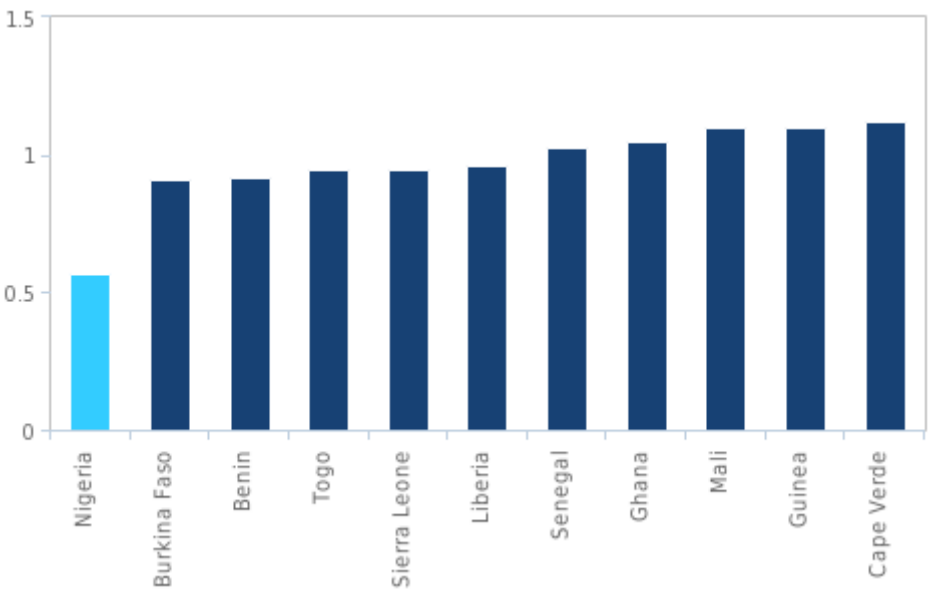
**Source**

- In January 2018, China Harbour Engineering Company and China's Offshore Oil Engineering Company broke ground to start construction on a subsea pipeline installation project for Dangote Oil Refining Company in Lagos, Nigeria. The project is part of Dangote's USD17bn budget for gas pipeline, fertiliser, petrochemicals and refinery projects. Work includes the transportation and installation of six 24-inch and three 48-inch diameter subsea pipelines with a total length of 100km at a depth of up to 40m in water. It will also cover the installation of five single-point mooring systems, a catenary anchor leg mooring buoy weighing 240 tonnes and 220 tonnes pipeline end manifold for a shuttle tanker that imports crude for the refinery. The Dangote refiner is under construction and will have capacity to refine 650,000 barrels of crude oil daily. The refinery will come on stream by September 2019, according to the stakeholders involved.
- The Nigerian petrochemicals industry is set for significant growth when the Dangote Group begins operations at its refinery and downstream fertiliser and polypropylene operations from 2018. The development should make Nigeria self-sufficient in both segments, with the potential for net exports. The complex will be highly efficient and cost-effective by integrating large refinery capacity to downstream units and adding value to the country's oil resources. However, any upsurge in political instability in the restive oil-producing Delta region could disrupt feedstock supply to petrochemicals operations.
- Broad plans aimed at reforming Nigeria's oil industry are gathering momentum, though they have met with resistance from some stakeholders. Under the restructuring plan, the Nigerian National Petroleum Corporation (NNPC) will be split into seven independent operational units and will undergo increased institutional reforms that will improve transparency and accountability in the sector. Strengthening the legal framework for Nigeria's oil industry will be essential in boosting capital inflows at a time when global uncertainty and domestic insecurity has eroded investor confidence. Alongside restructuring plans, Nigeria has also set an ambitious target of ending the need to import refined petroleum products by 2019. In this way, Nigeria has granted licences for a number of new small-scale private refineries in recent years.

*Source: Fitch Solutions, Global Petrol Prices, Nigerian National Petroleum Corporation (NNPC)*

Gradual Reduction On Fuel Import-Reliance Will Lower Energy Risks In The Long Run

West Africa - Cost Of Fuel (USD per Diesel Litre)




*Source: Fitch Solutions*

## Telecommunications

Internet availability and quality is the one utility sector in which Nigeria outperforms in the SSA region. The country has a relatively high level of internet penetration, although we emphasise that this will be limited to major cities, and a rapidly growing 3G/4G mobile sector. Internet speeds are also good compared to the rest of the West African region, which encourages greater use of the internet for commerce, improving business communications and operations. Some recent developments in the country's broadband sector are capable of driving growth in non-oil sectors over the medium term. These include the licensing of a wireless wholesale broadband access service provider, government initiatives to encourage the use of ICT services underscored by the implementation of a national broadband plan, consolidation in the fragmented wireless broadband market and investments in fibre networks. We believe broadband subscriptions will become cheaper as international connectivity improves following the extension of fibre optic and mobile data networks throughout the country and West Africa region. The lack of online censorship by the Nigerian government is also positive for businesses, meaning their activities are less likely to be monitored and there will be greater online advertising opportunities, without the threat of disruption. Nevertheless, Nigeria's fuel shortages (and concomitant electricity shortages) have the potential to affect the quality of internet services and cause disruptions to businesses reliant on steady internet connections that in turn rely on electricity.

### TELECOMMUNICATIONS RISKS

**Source**

The main telecommunications companies that operate in the country are **MTN Nigeria**, **Globacom**, **Airtel Nigeria**, **Etisalat Nigeria**, **NITEL**, **21st Century Technologies**, **Smile Communications**, **IPNX** and **Visafone Ltd**

- Nigeria has one of the largest and fastest growing telecom markets in SSA and is attracting considerable foreign investment. Far-reaching liberalisation has led to hundreds of companies providing various modern telecoms and value-added services in an independently regulated market, boosting business connectivity, particularly in urban areas.
- NITEL is the country's major traditional provider of PSTN-based fixed-line services and high-speed broadband services are largely limited to urban areas. Six alternative service providers are active in Nigeria's fixed-line market
- Smile Communications, a broadband service provider, is also making a push into the Nigerian 4G/LTE space, with particular emphasis on voice over LTE (VoLTE), which allows users to make calls through an application or VoLTE-enabled handsets.
- Mobile services offering 3G/4G technologies, as well as WiMAX wireless broadband services, are being rolled out rapidly, backed by new national and international fibre links.

**Availability**

13.7 broadband subscribers per 100 people; 31.5 3G/4G Subscribers per 100 people

- We estimate that the number of regular internet users in Nigeria reached 64.9mn by the end of 2015, a penetration rate of 35.6% of the population.
- Overall internet penetration rates are among the highest regionally and businesses benefit from the availability of 3G/4G/LTE services as well as fibre connections in most urban areas. This, in turn, supports e-commerce growth and financial inclusion through the provision of mobile financial services. This will facilitate modern communication, and open up opportunities for e-commerce, particularly as one of the main mobile operators, Etisalat, has launched a new application to facilitate mobile commerce.
- Despite the pace of change with Nigeria's telecom infrastructure, parts of the country remain underdeveloped and high-speed broadband for industrial use remains inaccessible in remote areas, necessitating costly mobile and satellite connections (VSAT, WiMAX, CDMA and HSPA+).
- While businesses will benefit from increased access to fibre, most of the population relies on 3G/4G connections for internet access. Consequently, we expect continued but slow fixed to mobile substitution over the medium term.

- Fixed broadband penetration has been limited by the country's weak incumbent fixed-line legacy infrastructure, exacerbated by poorly planned urban areas, difficulties acquiring right of way permits and the prevalence of wireless internet services.

**Reliability**

- The expanding telecommunications market will lead to better connectivity and communication capabilities for businesses in the medium term. However, Nigeria's fuel shortages have the potential to severely disrupt the telecommunications sector, and several Nigerian mobile operators have warned that the quality of their services is likely to be affected as it becomes increasingly difficult to supply diesel to base stations. Prolonged power blackouts disrupt ICT networks, resulting in disruptions of both mobile and internet connections for hours at a time, necessitating backup generators for providers and fuel storage facilities to mitigate the risk of fuel shortages.
- Fixed line download speeds in Nigeria are an estimated 5.5Mb/s which is higher most of its West African peers, on par with Ghana. Large urban areas fare better in terms of connection where businesses are able to receive internet access in numerous locations.
- In the long run, improved energy security and the expansion of broadband availability under the National Broadband Plan will improve access to faster and more reliable internet connections.

**Cost**

Fixed broadband internet tariffs USD70.90 per month

- Businesses face comparatively moderate telecommunications costs such that Nigeria ranks in fifth place out of 16 states in West Africa for fixed broadband internet tariffs, between Ghana (USD65.40) and Côte d'Ivoire (USD79.00).
- Increasing investments in the country's telecommunications infrastructure in recent years have made service prices more affordable for consumers. This bodes well for long-term online retail sector growth and business communications in the country.
- However, overlapping federal, state and local taxes, weak power reliability and fees and delays for obtaining right of way permits, place a strain on operations in the industry, keeping costs structurally inflated as these risks are priced into the tariff structure.

**Other Risks**

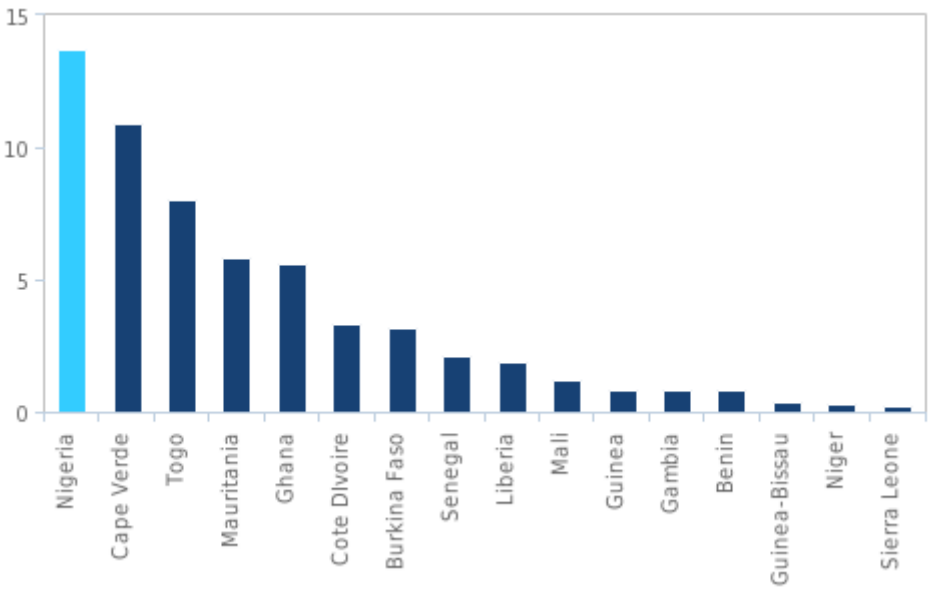
- As the country becomes more connected, companies will increasingly require robust cybersecurity protection (see Business Crime section). The threat of cybercrime remains significant due to the low number of secure servers of 2.3 per 1mn people and high risk of organised and financial crime.
- Areas in the Muslim north of the country where the Boko Haram group is active have seen considerable disruption to telecom services following the theft and destruction of equipment.
- Despite advancements in subscription rates, Nigeria lags many of its regional peers in the development and implementation of e-governance projects and ICT literacy programs. Although some federal government agencies and some state governments have established their individual e-governance platforms for improved service delivery, the state lacks an overall strategy to coordinate and integrate these platforms, thereby reducing their efficacy for local businesses.

**Planned Projects**

- Nigeria's e-commerce market is valued at around USD10bn annually, with about 300,000 online orders being made on a daily basis. The country is estimated to have seen e-commerce sales of USD3bn in 2015. We forecast this to rise by 16.1% per year, on average, through to 2020, reaching a total value of USD6.3bn. The development of network infrastructure will drive demand for IT solutions, such as transaction processing and online security solutions. This is a critical first step for Nigeria to become a Sub-Saharan African outsourcing location for basic services that would create the potential for moving up the value chain over the long term.
- Subscription growth in the mobile market continues to be driven by factors including operators' competitive pricing strategies and the extension of network coverage to underserved areas, boosting business. Nigeria's emerging middle class represents a large market for the telecommunications sector and an e-commerce platform to capture (see 'Enterprise e-Commerce Solution A Promising Entry Point For Etisalat', August 15 2016). Growth in e-commerce and mobile financial services will be driven by rising consumer affluence, increased internet connectivity and the rising demand for convenience. The potential for more cloud computing to positively impact the Nigerian IT market is one of the bright spots of our outlook, particularly as network infrastructure improves.

*Source: World Economic Forum's Global Information Technology Report, Fitch Solutions*

Rising Mobile And Internet Penetration Boost Business Environment
West Africa - Broadband Subscribers (per 100 people)




*Source: Fitch Solutions*

## Water

Nigeria's water sector is extremely underdeveloped and overburdened and suffers from frequent shortages. Nigeria's water infrastructure has suffered from years of poor operation and maintenance, and the very low access to safe water facilities and improved sanitation constitutes a serious public-health problem, raising labour risks due to illness. In addition, the freshwater supply is hindered by issues with poor quality infrastructure, pollution, corruption, and insufficient funding, which cripple the widening of access to freshwater. The water supply is expected to come under increasing pressure due to climate change and population growth, with a growing risk of shortages affecting agricultural production, one of the key sectors of Nigeria's economy. All the emphasis remains on transport and power infrastructure development over the medium term, therefore we take an extremely downbeat view of the water sector over the coming years. Access to the mains water supply is generally limited to urban areas, with water infrastructure lacking in quality and extent.

### WATER RISKS

**Source**

Renewable internal freshwater resources per capita: 1,252 cubic metre (cu m)

- The country has the seventh lowest water availability per capita out of 16 states in the West Africa region, ranking between Gambia and Ghana.
- Despite being relatively water-rich, the dearth of adequate infrastructure such as pipelines limits universal access to water and risks are exacerbated by high levels of pollution.
- The country's location gives it a varied climate with wide differences in rainfall, with regions in the north becoming increasingly dry due to climate change. This decreases the available locations for investors to set up operations, particularly for those sectors where water resources are a necessity, such as in the agricultural, energy production and manufacturing sectors.

**Availability**

68.5% of the total population has access to at least basic water services (WHO 2018)

- Access to potable water remains a challenge countrywide, rural access is low at 54%. Though access in urban areas sits higher (82%), many areas still face acute water shortages due to poor maintenance and underinvestment in pipes and water treatment facilities. The country's network of ageing water pipes does not reach expanding and crowded outer suburbs of major urban areas.
- Except for Abuja and limited areas of Lagos, no urban community has a sewerage system. Weak access to water and improved sanitation (33% of the population) has led to high illness risks, driving up operational costs and productivity losses for labour-intensive industries due to waterborne illness such as typhoid, cholera and diarrhoea.
- This means that businesses seeking to expand into Nigeria will need to factor in the extra cost providing safe water for key staff. Rising levels of water pollution pose a threat to agricultural activities and food processing industries that must seek alternate safe water sources. As the population grows, the freshwater supply will be further stretched, and infrastructure will require a huge amount of investment in order to reach the entire population.

**Reliability**

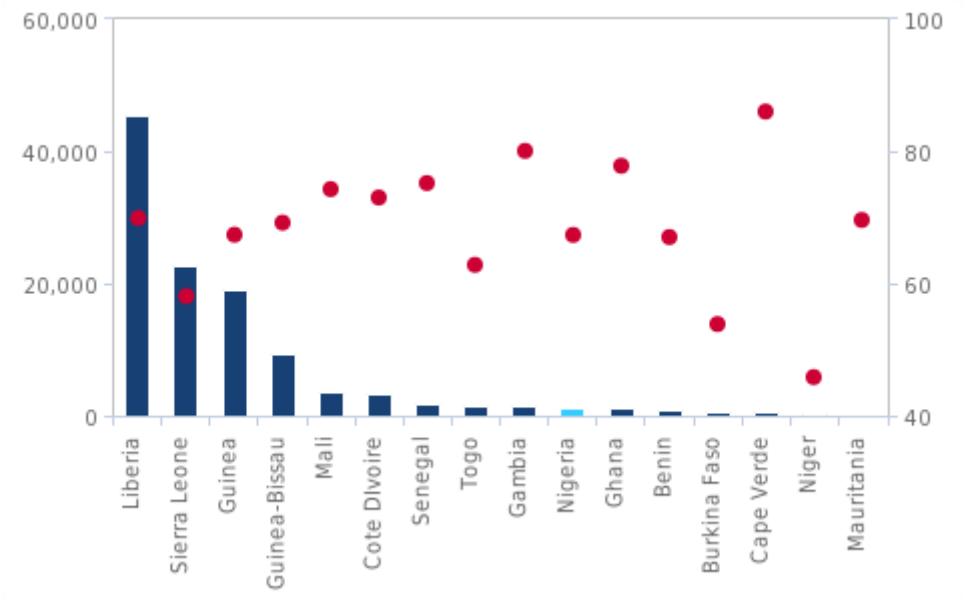
- Freshwater resources are also coming under growing pressure. The agricultural sector is currently the largest consumer of water in Nigeria, using 53.7% of total water available, compared to 15% used by industry and 31.3% used domestically. Water-intensive sectors will not only struggle to meet their water demands amidst a

| | |
|---|---|
| **Source** | |
| | growing population, but their activities, particularly oil and heavy industries contribute significantly to water pollution, thereby decreasing the water quality significantly.<br>• The dearth of infrastructure is a significant deterrent to water-intensive industries, where Lagos gets on average six hours of water per day. A combination of drought, unsustainable usage, underinvestment as well as unsafe environmental practices has conspired to make raw water sources unproductive, deterring water-intensive industries.<br>• Four out of the 37 water authorities, namely Lagos, Cross Rivers, Kaduna and Ogun State Water Agencies are undergoing reforms by introducing service public-private participation (PPP -mostly service contracts). However, the operational efficiency is low and unaccounted-for-water often exceeds 50%. |
| **Cost** | |
| USD0.60 per cu m for industrial users (2016 Lagos estimates) | • Water tariffs are set by each region's water authority. Though tariffs are relatively low, increasing water scarcity will exert upward pressure to tariffs in the long run.<br>• The dearth of potable water resources, particularly in rural areas means that businesses must erect water reservoirs. Water supply problems also mean firms often pay private water haulers exorbitant amounts to receive water for operations.<br>• Nigeria's energy scarcity raises costs of water treatment facilities, hampering development in this sector while revenue collection remains weak. The operating cost of water agencies is increased by the need to rely on diesel generators or even having to build their own power plants, since power supply is erratic. Equipment and pipes are poorly maintained, leading to intermittent supply and high levels of non-revenue water, denting the investment appeal of this sector. |
| **Planned Projects** | |
| | • In August 2017, the Nigerian government released close to USD1.5bn to the urban water sanitation sector through the National Urban Water Reform in an effort to boost water-security and improve access to piped water in key areas. In addition, Nigeria is undertaking more dam construction projects in order to boost water supply. |

*Source: CIA World Factbook, Fitch Solutions*

High Population Pressure, Pollution And Weak Infrastructure Raise Water Risks

West Africa - Water Availability (cu m per capita) (LHS) & Population With Access To Basic Water Services (%) (RHS)



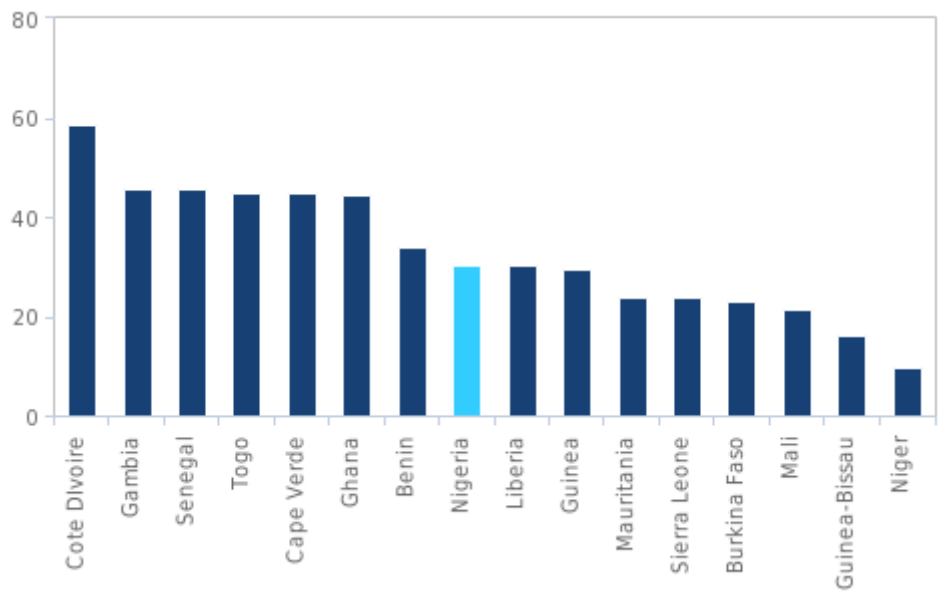

*Source: Fitch Solutions, World Bank*

# Transport Network Analysis

***Key View:*** *Nigeria's supply chains are overly reliant on the country's subpar road network and congested ports, which heighten operational risks due to the high likelihood of disruption caused by congestion, traffic accidents, security issues and energy and fuel shortages. Businesses have limited alternatives, as shown by the current parlous state of its railways, although we note that ongoing large-scale investment will make rail freight an increasingly attractive alternative option in the long run. As competition to establish regional leadership for port capacity ramps up, mainly from expansive projects taking place in nearby Ghana, Cameroon and Côte d'Ivoire, Nigeria is also hoping that once its new megaports come online, combined with the increasing involvement of global logistics firms, it too will be able to secure a position as one of the region's major trans-shipment destinations. For the time being, some goods bound for Nigeria are being routed inland through its neighbours, rather than arriving directly on its shores, raising lead times due to frequent congestion. Nigeria receives a score of 30.1 out of 100 for its Transport Network, in ninth place out of 16 West African states and 24th place out of 48 countries in Sub-Saharan Africa.*

Weak Transport Connections Impede Trade Competiveness

West Africa - Transport Network




*Note: 100 = lowest risk; 0 = highest risk. Source: Fitch Solutions Logistics Risk Index*

### Latest Transport Network Analysis

- The Nigerian government aims to rehabilitate 4,000km of roads, develop strategic rail lines between Lagos and Kano, as well as and Lagos and Calabar, dredge 1,000km of waterways, and concession fourwill provide concessions for airports. In addition, construction has started on the Lagos-Ibadan railway, part of the line which will stretch to the northern city of Kano. Transport is a significant focus for the government and we expect growth in the sector to recover over 2017. The government intends to borrow money to finance rail, road and port projects and will continue to look to the private sector to assist in the development of new assets. However, high levels of bureaucracy will continue to impede and delay project implementations.
- Six Nigerian companies, including **Dangote**, have been selected to take part in a scheme whereby they will finance road construction in return for tax credits. The rationale is that the private sector will be able to more quickly mobilise funds and attract construction partners, expediting road construction on major routes that would otherwise be delayed by government funding constrains and bureaucratic inefficiencies. Numerous project risks surround the development of this novel scheme to assess the prospects of success, as there is potential for these projects to lack adequate oversight and for resources to be allocated poorly, which means that investors are unlilkely to see a significant near term improvement in road networks.
- In November 2018, the government selected a consortium comprising Bolloré Africa Logistics and PowerChina International

Group as the preferred bidder for the Ibom Deep Sea Port project. The USD4.2bn public-private partnership project involves the development of a greenfield port area in the south-east of Akwa Ibom State. The port, designed to berth New Panamax Class vessels, will have a channel depth of 18.24m, a turning basin and berth depth of 16.72m, and quay length of around 7.5km. It will handle containers, petroleum products for export and import, crude oil and natural gas meant for export, and the bulk trade of natural resources for both import and export purposes, among other commodities.

- There continues to be some progress with implementing public-private partnerships (PPPs) across the transport sector, which will help leverage more private capital into projects over the medium term, boosting long-term transport connectivity. Increasing privatisation in the road freight sector will leverage much needed financing and expertise to support the development of Nigeria's road network, especially with regard to keeping existing roads operational. The Nigerian government is looking towards establishing a tolling policy that is to be implemented on national dual carriageways and major highways. Such a move - regardless of whether the road development project is implemented by the government or a private sector participant - would reduce the maintenance cost burden of roads being tolled and free up capital for other greenfield projects. Tolled roads could increase cost of transport services without necessarily easing risks, given the high legal and governance risks in the country. Therefore, in tandem with this, increasing clarity and transparency surrounding Nigeria's Roads Authority should allow for better project selection, oversight and greater clarity on need.
- Increasing demand for consumer goods buoyed by an expanding middle class and manufacturing sector will raise intermodal container volumes over the medium term. Nigeria is aiming to increase the extent of its road network by 35% by 2020, and several key projects are in progress. However, we note the scale of the transport infrastructure deficit in Nigeria is such that the government alone will be unable to finance the majority of projects needed and will continue to rely heavily on foreign investment and the World Bank.
- Nigeria is undertaking developments on the Lagos -Calabar (Cross River) Coastal Railway Project, valued at USD11.1bn, stretching for 1,385km, with the help of Chinese investment. The 1,315km Lagos-Kano Rail Project is under construction.

## Extent And Quality Of Transport Network

Nigeria's transport network is vast, theoretically, with road, railway and inland waterways linking the country's main cities and regions together and with its neighbours. With two landlocked neighbours, Niger and Chad, Nigeria's ports, and consequently its road network, serve as entry points to the hinterland. As the dominant freight transport mode in Nigeria, road traffic will continue its robust growth in the short-to-medium term, exacerbating congestion risks due to the dearth of adequate alternate freight modes. Rail transportation, much neglected inin the past, is in the midst of a revival as old lines and assets undergo modernisation and are put up for privatisation, and new infrastructure is carried out largely through public-private partnerships (PPPs). Overall, Nigeria compares favourably in Sub-Saharan Africa (SSA) with regard to the Extent of the Transport Network and continued investment in the aviation sector will boost international connectivity. It ranks in third place in West Africa and eighth place out of 48 states in SSA, with a score of 43.5 out of 100. Traffic volumes are set to increase rapidly in the long run with rail looking to secure a position as a key mover of goods and people, as dormant services start up again and new lines are constructed.

We believe that the rejuvenation of Nigeria's railway network, which had decayed over many years of underinvestment and neglect, along with road developments could also help ease some of the operational challenges at the country's ports. Congestion is a significant issue on the road network as well as in ports and airports, and consequently Nigeria performs poorly for Quality of Transport Network, with a score of just 17.5 placing the country in 13th position out of 16 states in West Africa, well behind Ghana and Senegal, marginally ahead of Niger. The rehabilitation of the port, road and rail networks provides potential from the cost-efficient transport of agricultural, consumer and manufacturing cargo, facilitating trade growth over the medium term. Partial privatisation has helped eliminate overstaffing, cargo theft and excessive port-related charges, in addition to unlocking funds for infrastructure improvements, which were the main challenges faced by the transport sector, particularly ports.

### Road Network

Nigeria has the largest road network in West Africa and the second largest in SSA, behind South Africa. Consequently, the road network is responsible for the majority of inland freight transport in the country. Despite relatively good inland and regional connections, we highlight that there are a number of risks for businesses reliant on roads for their supply chain needs, such as the lack of adequate highways, poor road quality, traffic congestion, the high rate of accidents and security issues, particularly in the northeast of Nigeria. The rapid growth in urban populations combined with the dearth of adequate mass transit systems means labour and freight mobility is severely inhibited by delays in traffic, raising risk of cargo spoilage and accidents. Security issues posed by armed robbers and terrorist groups also affect large sections of the road network, raising insurance and transport security costs. One positive is the ongoing rehabilitation of the railway network, which should see some pressure taken off the roads in the long run as there will be greater scope for diversification of supply chains for businesses.

## ROAD RISKS

### Internal Coverage

Total road network: 193,200km

- Nigeria has one of the most extensive road networks in the wider SSA region, where most major roads are concentrated in the south and central regions of the country linking major cities, airports and ports.
- There are very few multi-lane expressways except for in Lagos, which means that, as speeds on the secondary road network are slower, road transport in other areas of the country suffers from longer travelling times, causing delays to supply chains, particularly as there is a lack of highways linking the ports to Abuja and other cities.
- The road freight sector is undergoing considerable investment which will strengthen the sector over the medium term. We highlight the significant upside risk to our outlook for the road sector, which looks set to reduce its reliance on inefficient and capital-poor state institutions in favour of the private sector. This will improve Nigeria's logistical efficiency over the medium-to-long term, facilitating smoother trade growth.

### International Connections

Major Road Connections on the Trans-African Highways (TAH):Algiers- Lagos (via Niger)Lagos-Mombasa (via DRC)Dakar-Ndjamena (via Kano in northern Nigeria)Dakar-Lagos (via Ghana, Liberia)

- Nigeria's strategic location means that it lies at a key point in the Trans-African Highway networks, with four major routes crossing its territory. Three of these converge on Lagos, with one heading west to Senegal, one east to Kenya, and one north to Algeria. Businesses based in Lagos benefit from being at the epicentre of regional trade links. The final highway runs west to east from Senegal to Chad, via Kano in northern Nigeria.
- These road connections are particularly important for countries such as Niger as it seeks to return to using Nigeria's ports for its imports and exports. Much freight crosses the major borders however many unpaved inter-regional connections (particularly those traversing the DRC and West Africa's coastline via Liberia) heavy congestion and numerous security checkpoints, lead to long delays for freight.
- High-security risks in northern Nigeria inhibit the use of regional road links. The usage of the Trans-African Highway routes to Chad and Niger is limited due to regional security threats.

### Infrastructure Quality

### Internal Coverage

85% of the roads are unpaved.

- Roads are facing pressure to keep pace with economic and population growth, falling short of global benchmarks for paved road-to-population ratios. Only 15% of the roads are paved meaning drivers will encounter potholes that may damage their cargo and increase their vulnerability to crime. This significantly increases delays and costs involved with road haulage, where travel to Cameroon can take up to four days.
- Except for some relatively higher quality toll roads which connect major cities, roads are poorly maintained and difficult to drive on, raising accident risks for heavy freight haulage.
- Heavy trucks face additional disruptions and high accident risks during rainy periods due to the lack of drainage facilities, potholes and increasingly adverse climatic conditions.

### Usage

Accounts for 99.9% of internal freight tonnage

- Roads are the major transport mode for freighted goods and therefore provide vital supply chain links for businesses. We forecast road freight to grow by an annual average of 4.3% from 2016-2020 on the back of strong import demand from households, the agricultural and the manufacturing sectors as well as increasing regional trade, while continued road improvements will fail to keep pace with demand over the medium term.
- The lack of adequate multi-lane highways and the poor quality of Nigeria's roads, combined with a rapid increase in vehicle traffic, means that congestion has become a persistent and debilitating issue, causing lengthy delays for supply chains running through Nigeria's main ports and cities.
- Even where the road system is more developed, around Lagos, the lack of efficient public transit systems exacerbates congestion causing delays and raising fuel costs. This issue will continue, as we project further throughput growth at Nigeria's main port of Apapa, with an expanding heavy truck fleet adding to the growing vehicle ownership on the city's streets and causing further damage to disintegrating roads.

### Disruption

20.5 road deaths per 100,000 people (World Health Organization)

- Bribes are often solicited at the numerous police roadblocks exacerbating delays and costs. Despite the high police presence on the roads, traffic violations and highway robberies are common and drivers are advised against travelling to agitated areas of the country, which limits trade potential.
- Vehicles with more than one real axle or six tyres are restricted from travel in Lagos between 6am and 9pm in accordance with the Road Traffic Law of 2012, further raising transit costs and delays.
- The high crime and terrorism risks in the north-eastern regions, particularly areas bordering Niger and Chad further restrain road travel and extend delays. Activities of militants, as well as the frequency robberies and carjacking incidents, pose risks to road transport traversing the south-east regions. Businesses will need to hire private security if they wish to better protect their cargo and key staff.
- Poor infrastructure compounded by high-security risks lead to frequent accidents that endanger freight and personnel. The high rate of road accidents causes delays to supply chains and significant productivity losses, necessitating elevated cargo insurance and replacement costs.

### Planned Projects

- The Nigerian government's 2017-2020 Economic Recovery and Growth Plan (ERGP) sets out to boost the construction of roads, aligning with Fitch Solutions' infrastructure team's forecasts for a recovery

**Internal Coverage**

in road developments over the medium term. Initially, the government had targeted the rehabilitation and enhancement of 4,000km of the federal highways network.

- The road sector has been one of the major victims of the slowdown in the Nigeria's infrastructure development over 2016 and 2017. Given the heavy reliance on government funding and the slow dispersal of funds due to lower government revenues, many contractors have failed to be compensated and projects have ground to a halt, which, in turn, has negative implications for much-needed transport routes coming online in the near term. Being both lower-profile and lower-cost projects, roads are one of the areas in which it is easier for government to rein in expenditure. Furthermore, such projects rely heavily on local small-scale contractors who have been some of the hardest hit by the liquidity crunch currently affecting business operations.

*Source: Fitch Solutions, CIA World Factbook, World Health Organization*

Supply Chains Remain Heavily Reliant On Roads

Map of Nigeria's Main Road Links


*Source: d-maps.com*

**Railways**

The Nigerian railway network is undergoing extensive rehabilitation, with the two main lines reopening in 2013 after many years of neglect and decline. Although there is still much room for improvement in terms of quality, the railways are already providing an alternative option for supply chains in Nigeria, and continued investment will improve their efficiency and help to ease the chronic congestion on the country's road network. We hold an optimistic outlook surrounding Nigeria's rail freight sector over the medium-to-long term as the country invests in reviving the largely defunct industry. The 25-year rail system master plan is now in its second phase of development with focus on rehabilitation of existing rail and developing standard-gauge, modern gauge and high-speed railway systems. Nigeria's rail sector exhibits all of the traits that underpin our view that rail infrastructure across West Africa will be a

key area of investment. The development of new rail corridors linking population centres and economic hubs are a key element of the government's economic transformation plan and will boost the operational environment, alleviating road pressure.

## RAIL RISKS

### Internal Coverage

Total railway network length: 3,798km.standard gauge: 293km 1,435-m narrow gauge: 3,505km 1,067-m gauge (2014 estimates) 4,400km of planned standard gauge track in Nigeria's 25-year rail development plan

- There are two north-south railway lines in Nigeria, one in the west running from the port of Lagos to Nguru, the other in the east from Port Harcourt to Maiduguri.
- The standard gauge line connecting Abuja with Kaduna enables faster movement of goods and people between the two cities.
- Following years of neglect, freight-rail capacity remains limited and not commercially viable for many sectors. AAt present, Nigeria is seeking to explore new areas of revenue generation and economic diversification through massive investment into the rail sector. Key projects include building a second railway line connecting Lagos, the commercial capital, and Kano in the north. The 1,100km line will carry freight and passengers.
- In addition, the government intends to construct a coastal railway that connects Lagos to the eastern city of Calabar. The two new railways are expected to cost an estimated USD20bn, with most of the funding coming from the **Export-Import Bank of China**, which has so far released USD5.9bn. **China's Civil Engineering and Construction Co** is executing the project and both railways should be completed by 2020, according to the plans in place.

### International Connections

No existing regional connections

- There are currently no rail connections to Nigeria's neighbours, and while there are plans to introduce links to Niger and Cameroon, these remain in the development phase. This increases the logistical burden of carrying out high-bulk, cross-border trade and means that overland trade will remain reliant on the poor quality and overburdened road network.
- Joining distant connections in neighbouring countries will prove costly due to distance and variations in track gauges, prolonging supply chain difficulties, particularly for heavy industries.

### Infrastructure Quality

- Rail disruptions are frequent due to obsolete rolling stock and deteriorating infrastructure. This increases transportation times and safety issues disrupting supply chains. Years of underinvestment in rail infrastructure and operational inefficiencies mean that the Nigerian railways remain in a poor state of disrepair despite their recent rejuvenation.
- The new high-speed, double-gauge, 185km line between Abuja and Kaduna State should dramatically reduce commute times and this will improve labour mobility over time. The Abuja-Kaduna high-speed railway will run at between 120-150km/h, allowing travellers to commute between the two cities in under an hour.
- The rail profile will be uplifted by further investments in infrastructure and continued rehabilitation of deteriorated sections of the railway network under the '25 Year Strategic Rail Vision'. The government is working on increasing private participation in the sector, leading to greater investment and an improvement in quality and efficiency.

## Internal Coverage

### Usage

Rail accounts for 0.03% of internal freight tonnage. High speed rail available between Abuja-Kaduna (and eventually Lagos)

- Rail currently handles a small portion of freight and passenger traffic and infrastructure and lacks regional connections further curtailing its role in logistics.
- The rehabilitation of Nigeria's railway infrastructure continues, with the colonial line between Lagos and Kano reopening. Additionally, by transporting boxes by rail out of the country's major port, Apapa, the new rail services will help alleviate congestion issues at the facility.
- Nigeria has a growing population that is putting a strain on existing infrastructure and also has a growing middle class that is demanding better transportation and consuming more imported goods, necessitating the construction of a sound logistics network. Urban Mass Transit Rail system development should help ease the chronic congestion on the country's road network, as passenger traffic will be offered another transport option, leaving more space on the road network for freight traffic and improving labour mobility.

### Disruption

- The weak infrastructure renders existing rail locomotives vulnerable to derailments and the speed is very slow, extending lead times.
- The planned rail developments are likely to take longer to come online as the government is experiencing fiscal constraints on the back of low oil revenues.

### Planned Projects

- The Federal Executive Council has approved construction of rail lines to connect Kebbi, Zamfara and Sokoto states. The project is part of the federal government's aim to link every state in the country with railway.
- A further USD16bn is directed to additional rail routes that will join the country's interstate network to state capitals, including extensions across the northern border into neighbouring Niger. Additionally, the government is also trying to complete the USD3bn line running from Abuja to the southern oil hub of Warri by 2018. Once the rail links to the existing and planned deep-sea ports are complete, this will substantially improve connectivity, reduce logistics costs and facilitate exports and imports.
- Planning is under way to build a 248km standard gauge route from Kano in Nigeria to Maradi in Niger according to state sources in 2018. The proposed rail line will pass through the states of Jigawa and Katsina, passing through Dutse, Kazaure, Daura and the Katsina city before crossing the border near Jibia. The project will be carried out by both the countries in partnership. The railway line is also expected to provide link to a new oil refinery planned for Maradi. A 156km standard gauge line between Lagos and Ibadan is likely to be completed by H119. However regional insecurity may impede rapid developments.
- In addition, talks are ongoing with the Export-Import Bank of China for a loan to fund the remaining section of the standard gauge route from Ibadan to Kano.
- Ongoing rail developments will reduce inter-city transit times and travel costs. The USD11.98bn Coastal Railway project, currently at planning stage, will link Lagos to Calabar and Ogun in the south east, and later Kano in the north.
- The other standard gauge line projects in the pipeline include the Lagos-Benin City (300km),

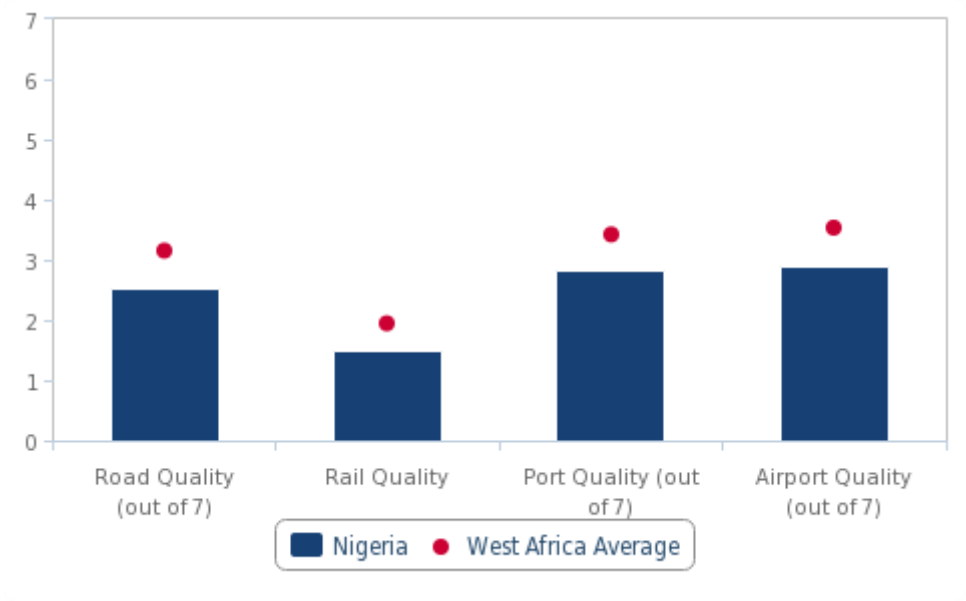
### Internal Coverage

Benin-Abakiliki (500km), Benin Obudu Cattle Ranch (673km), Lagos-Abuja high-speed (615km), Zaria-Birnin Koni (520km), Ega nyi-Otukpo (533km) and Ega nyi-Abuja. Other projects scheduled are the Port Harcourt-Maiduguri line (1,657km), Ogoja-Maiduguri, Kano-Gamboru Ngala, Kano-Jibia, and Ilela-Minna rail lines.

*Source: Fitch Solutions, CIA World Factbook*

Poor Transport Quality Reduces Appeal For Non-Oil Sector Firms

Nigeria & Regional Average - Infrastructure Quality




*Source: World Economic Forum's Global Competitiveness Index*

### Ports And Inland Waterways

Nigeria's ports have been struggling to meet the demand of the country's imports and exports, with congestion proving to be a severe issue both within the terminals and on the roads surrounding them. With the two main container ports experiencing high utilisation rates and pushed to their limits, new capacity is needed to keep pace with rapidly rising cargo volumes. Businesses will benefit from the introduction of international terminal management firms, while investment in new and existing facilities, should help to facilitate more efficient turnarounds, tackle congestion, and allow for an increase in throughput as consumer demand raises import volumes. To that end, there are seven new port projects in either the proposal or construction stage. The most advanced of these is Lagos's new seaport at Lekki, which is expected to be operational by 2019. To this end, new port developments will improve Nigeria's port logistics offerings, as well as its development into a regional trade hub.

## PORTS AND INLAND WATERWAYS RISKS

### Internal Coverage

Main ports: Bonny Inshore Terminal, Calabar, Lagos

Total length of navigable inland waterways: 8,600km (Niger and Benue Rivers and smaller rivers and creeks)

- Nigeria's onshore oil terminals are of vital importance for the country's main exports (hydrocarbons) located at Escravos, Forcados, Brass, Kwa Iboe and Bonny, with the latter also the location of the only liquefied natural gas (LNG) terminal. Relatively modern and efficient terminals managed by multinational oil companies handle most oil and gas exports.
- The main container ports in Lagos (at Apapa and Tin Can Island), Port Harcourt and Calabar. The most important of these is Apapa, which is the main container terminal in Nigeria and a key point of entry for imports, as well as a regional transhipment hub.
- We have observed some of the world's largest terminal operators and port investors tap into the fundamentally strong long-term demand picture for port traffic in Nigeria; APM Terminals operates the Apapa terminal and Bolloré a terminal at the Tincan port.
- Nigeria boasts 8,600km of navigable inland waterways, the second longest in SSA, behind DRC (15,000km), which supports potential freight route alternation; however, supporting infrastructure needs to be in place first in many sections for them to be useful for firms.

### International Connections

Liner Connectivity: 19.97 (highest global score is 158.8 by China)

- Nigeria has no shortage of water access, with a long coastline connected to an extensive network of inland rivers with interconnectivity covering some 20 states and extending into neighbouring Cameroon and Benin.
- Nigeria's ports are relatively well connected, ranking third out 16 states in West Africa for liner connectivity, between Senegal and Benin. This demonstrates the country's important role in serving as a transit hub to landlocked countries such as Niger, even though current capacity constraints inhibit robust trade growth.
- Nigeria's waterways are of increasing importance to its supply chain offering supply chain diversity for businesses.

### Infrastructure Quality

- The country is facing a substantial capacity deficit when it comes to meeting the current and predicted demand for cargo volumes such that firms will continue to face restrictions and significant port congestion over the medium term. Logistical options in the country are set to improve with the development of new greenfield ports in and around Lagos particularly Lekki Port within the Lagos Free Trade Zone, which comprises a multi-purpose, deep-water port equipped to handle larger shipping vessels, in combination with a selection of both large and smaller-scale projects.
- The liberalisation of the port sector has, however, seen a much-needed injection of funds from private firms and improvements in efficiency and congestion. International terminal operator APM Terminals (APMT) is now running the country's main container port at Apapa, with expansion plans to make it the largest container port in West Africa. Niger has subsequently signalled its intent to resume using the country's ports.
- Nigeria is moving forward with a number of major port developments over coming years. Maritime and port development forms a key part of Nigeria’s National Integrated Infrastructure Master Plan (NIIMP), and is a major area of focus for infrastructure investment as the government aims to improve transport connections to support growth. As such, we are seeing activity in the port sector begin to pick up with a number of projects under construction or moving through the pre-

## Internal Coverage

construction phases.

- Overall, there are currently 11 port projects in the pipeline in Nigeria according to our Key Projects Database (KPD), comprising seven new deep sea ports, and four port expansions. Three of these are currently under construction, namely the Lekki Deep Sea Port in Lagos, Onne Port Complex expansion in Port Harcourt and Olokola Deep Sea Port in Ondo State.
- Development of inland waterway infrastructure across the country will also benefit inland transport networks. Milestones to date include the dredging of Lower Niger River, running from Warri in Delta State to Baro in Niger State, as well as the rehabilitation of the Onitsha River port.

## Usage

Port of Lagos (Apapa) tonnage throughput 25.9mn tonnes annually

Port of Harcourt tonnage throughput : 6.50mn tonnes.

Port of Tincan Island throughput: 16.8mn tonnes

(based on 2016 estimates)

- The Lagos Port Complex, which comprises six terminals in the area of Apapa, and the nearby Tin Can Island Port are responsible for over 90% of the country's total container traffic. Road congestion outside the terminal prevents the swift movement of goods into and out of the port. As a result, the ports are subject to heavy delays which greatly increase surcharges and operational costs.
- While inland maritime transport does not match rail or road in terms of carrying capacity, it is considered a fast and cost-effective freight logistics alternative solution; however, the lack of major cities or ports upstream along the Niger River limits its use for freight transport. Inland waterways are mostly used in the Niger Delta region for transporting agricultural, mineral and fuel products.

## Disruption

- Maritime criminality in Nigerian waters has increased in recent years and law enforcement efforts have been limited or ineffectual. Risks of militant violence and terrorist attacks remain high within the country, threatening port infrastructure, important pipelines, cargo and labour safety.
- The risk of piracy in the Gulf of Guinea presents a key risk, raising costs of maritime trade and insurance. Pirates in the region are now more focused on kidnap-for-ransom attacks, raising hazard duty and captivity pay requirements for shipping and logistics industry workers, which will raise costs of traded goods.
- Time and usage restrictions on truck drivers in metropolitan areas raise risk of delays and additional operational costs for high-bulk-trade.

## Planned Projects

- The USD6bn (2mn TEU) Lagos Free Trade Zone Port is under construction.
- In line with our view that the PPP model in Nigeria will be increasingly used to develop infrastructure, the Nigerian Federal Government aims to combine efforts of the Nigerian Ports Authority (NPA), state governments and private investors to develop: Lekki Deep Seaport, Ibaka Seaport, Agge Deep Seaport, Badagry Deep Seaport, Olokola Deep Seaport and Ogidigbe Port.
- Looking further ahead, the sector must invest in new facilities if it is to compete regionally, especially as existing ports continue to struggle with congestion. The Lekki port project, scheduled for completion in 2019, will help alleviate many of these issues.

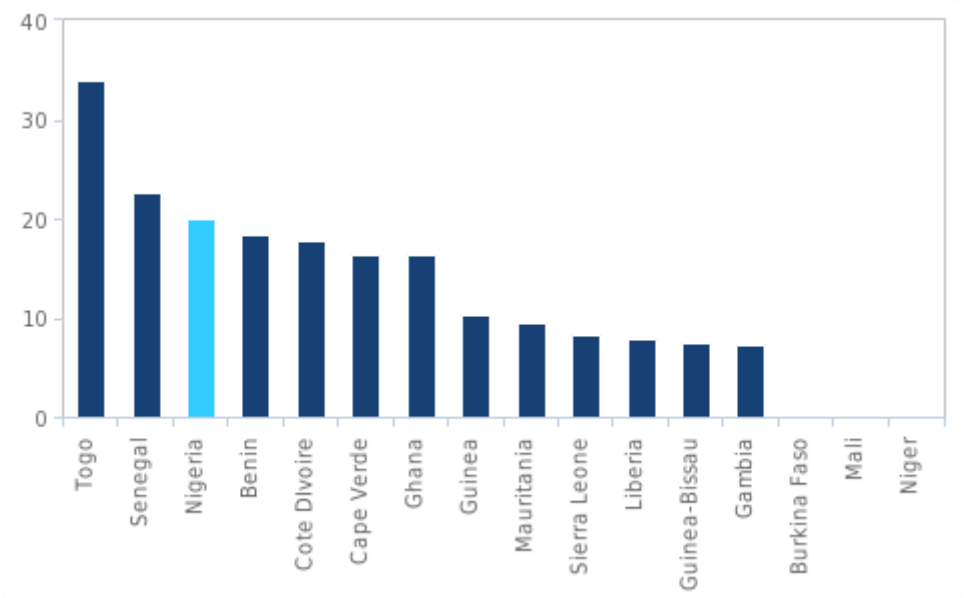
**Internal Coverage**

- Other port developments are also moving towards construction, with Bakassi Deep Sea Port and Indorama Multi-Purpose Port Terminal in financial closure, and a consortium of Bolloré Africa Logistics and PowerChina chosen as the contractor for the Ibom Deep Sea Port Project.

*Source: Fitch Solutions, World Bank, UNCTAD*

Expanding Port Infrastructure Will Boost Logistical Profile In The Long Run

West Africa - Liner Connectivity




*Note: 158 = highest score, 0 = lowest score. Source: UNCTAD*

**Airports**

Nigeria is well served in terms of the number of international airports, and the quality of its airport infrastructure scores highest among all four transport pillars, which bode well for businesses reliant on air passenger and freight services and those wishing to circumvent delays at ports and inland routes. However, safety issues remain a concern and congestion is a problem at freight terminals. In addition, strikes by airport staff and jet fuel shortages have the potential to cause significant disruption to supply chains. The country is developing its air freight sector to match its strong passenger connections. In June 2013, the Nigerian aviation authorities designated 13 airports as perishable cargo airports. These are the Abuja, Akure, Calabar, Ilorin, Jalingo, Jos, Kano, Lagos, Makurdi, Minna, Owerri, Port Harcourt and Uyo airports. The airports were chosen due to their proximity to areas where foods are produced in order to facilitate the transport of agricultural products, particularly cold chain items which rely on swift transportation, to domestic and international markets. This has opened up new supply chain options and increased investor opportunities, as specific cold chain trade needs will be met.

## AIR TRANSPORT RISKS

### Internal Coverage

Total of 54 airports. Only 40 have paved runways of which 10 airports have runways of at least 3,047m needed for the largest planes in service to land.

The main international airport for passengers and cargo in Nigeria is Murtala Muhammed International Airport (MMIA) in Lagos, other airports located in Abuja, Kano, Port Harcourt and Enugu.

- The Nigerian International airports, notably in Abuja, Calabar, Kano, Lagos and Port-Harcourt, are leading cargo centres. An important segment of the air transport sector, the air-freight business is kept alive by a combination of shippers, airlines, leading courier firms (such as **UPS** and **DHL**) and handling companies (such as **NAHCO** and **SAHCOL**).
- Direct international air links are limited. Additional services being introduced by a host of regional and international air carriers, while currently being in the form of passenger carrying services, will present bellyhold capacity over the medium term.

### International Connections

Air passengers carried per capita: 0.02

- As Africa's most populous country, Nigeria is an important destination for over 22 foreign carriers. Nigeria currently has Bilateral Air Services Agreements with over 78 countries.
- **Arik Air** is the de facto national airline, with scheduled flights from MMIA to regional and international destinations including London, New York, Johannesburg, Dakar and Dubai. **Air France**, **British Airways**, **Etihad**, **Delta**, **Lufthansa** and **Virgin Atlantic** operate international flights to European, US and Middle Eastern destinations.
- MMIA is also host to a range of air cargo carriers, including **Air France Cargo**, **Cargolux**, **DHL**, **Etihad Cargo** and **Singapore Airlines Cargo,** serving African, European and Asian destinations. However, businesses looking to access to markets such as Asia and other countries in Southern Africa other than South Africa face high air-freight costs due to the lack of direct connections.

### Infrastructure Quality

- The limited size of the airports compared with regional peers such as Kenya, South Africa and Ethiopia means businesses reliant on air freight and travel will face comparatively high costs and capacity restrictions.
- There remain concerns about the safety and reliability of some airline companies operating flights within Nigeria. Although international carriers and Arik Air are safer, investors should be wary of using some domestic and regional airlines.
- Despite some security concerns, Nigeria now boasts of improved aviation facilities with modern navigational aids, weather forecasting equipment and highly skilled manpower to ensure safety, while airlines have started bringing in brand new aircraft to the industry. With the attainment of America's Federal Aviation Administration (FAA) International Aviation Safety Assessment (IASA) Category One Certification, Nigerian registered carriers can now fly directly to the US, boosting business connectivity.

## Internal Coverage

### Usage

Air freight volumes: 24.2mn ton-kmAir traffic accounts for 0.04% of total freight, out of which MMIA accounts for 60% of air traffic.

(**Fitch Solutions** 2016 estimates)

- The air freight sector is set to register 9.3% aggregate annual growth over the medium term (2016-2020). A key driver of medium-to-long term growth will be the Nigerian consumer, with strong growth in retail and telecoms expected to continue, boosting air freight volumes.
- At present, there is a marked imbalance between imported and exported air freight, with the quantity of incoming air cargo generally almost 10 times the outbound volumes annually.
- Increasing air connectivity, passenger volumes and domestic fleet create viable opportunities for investors to transport valuable freight, expanding trade options and offering quicker lead times. This will boost trade in perishables (agricultural sector exports) and high value goods (imports).

### Disruption

- Recent years have been particularly testing for the indigenous airline industry, starting with the grounding of the national carrier **Air Nigeria** in 2012, followed by a string of incidents that brought industry safety into question. The financial performance of the national carrier has been characterised by large losses since inception, due to poor management, state intervention and corruption, raising safety and reliability concerns.
- Regional Ebola outbreaks and significant terrorism threats can lead to lower passenger volumes and some flight cancellations across West Africa.
- Currency distortions and Fuel shortages have had a negative effect on the air transport sector and lead to prolonged delays and added costs, with high risk of cargo spoilage in the trade of perishable goods.
- Strikes by airport workers pose a further risk to air freight and passenger transport highlighting the volume of risks that investors must take into account if their supply chains are reliant on Nigeria's aviation sector.
- Since H216, some major foreign airlines flying to Nigeria started reducing flights and refuelling abroad, to bypass highly priced and increasingly scarce aviation fuel as well as foreign currency shortages in the country. Nearly 60% of domestic flights were either cancelled or delayed in Nigeria in Q316 alone according to citing statistics from the country's aviation regulator. This is coming on the back of Arik Air's suspension of flight operations to all airports across the country due to its inability to secure aviation fuel (JET-A1). British Airways now uses smaller aircraft on its Lagos-London route, as did Air France-KLM. Emirates stated that it has started a detour to Accra, Ghana, to refuel its daily Abuja-bound flight, and has already cut its twice-daily flights to Lagos and Abuja down to just one. The latter move was aided by a substantial drop in Ghana's jet prices amid tax reform in August 2016, highlighting the comparative decline in Nigeria's transport efficiency.

### Planned Projects

- As of August 2016 the Nigerian government planned to issue the tender process for the concession of four international airports under the public-private partnership model. The facilities are Murtala Muhammed International Airport, Mallam Aminu Kano International Airport, Nnamdi Azikiwe International Airport and Port Harcourt International Airport. We are currently cautious of such plans, given the false starts we have seen with the use of PPPs in Nigeria's airports sector previously.
- We had previously noted that three consortiums led by **Bouygues Batiment**, **Eko Global** and

## Internal Coverage

**Maevis**, were in the race for the first round of bidding for the development of the second international airport in Lagos, the Lekki International Airport. The project was to be awarded under a Design, Build, Finance, Operate and Manage (DBFOM) concession agreement. The USD450mn facility, which will be on a 4,500 hectare site, is to have three runways and an annual capacity of 3.2mn passengers. Securing private investors for the project has proven a challenge.

- Elsewhere, regional airports have also been benefiting from investment; Bayelsa and Akwa Ibom State airports plans new terminals and control towers, and work has begun on site.

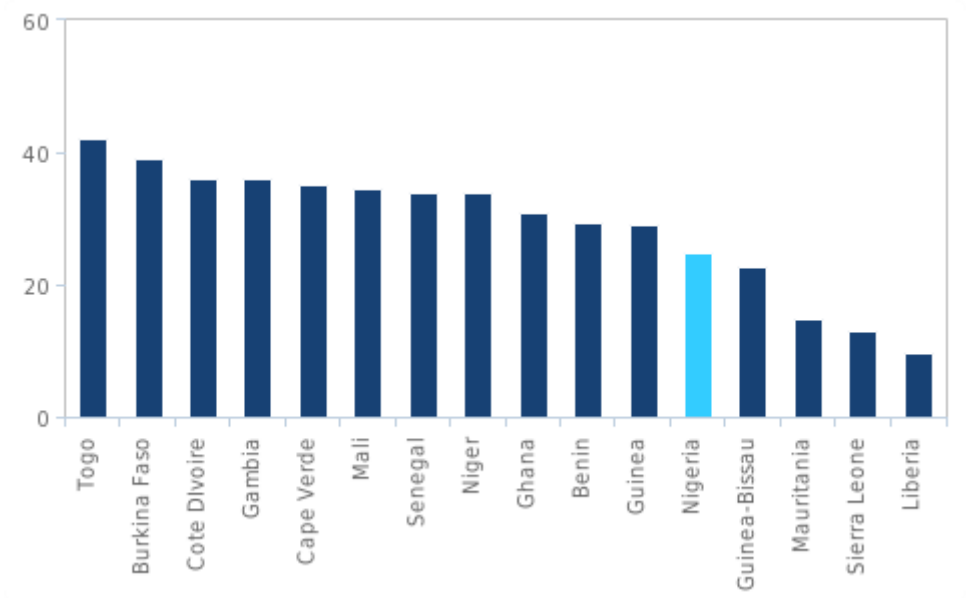
*Source: CIA World Factbook, World Bank, Fitch Solutions*

# Trade Procedures And Governance Analysis

***Key View:*** *Complex and costly trade compliance requirements, inadequate transport infrastructure and pervasive corruption at key entry points and along inland routes significantly dent Nigeria's logistical appeal. In addition to high levels of trade bureaucracy, firms operating in the country are exposed to hidden variable costs associated with congestion at the country's ports and on major inland routes. High security risks, rampant smuggling and extensive border controls further elevate logistical costs and raise risk of delays and rent-seeking activities. These risks further inflate the price of goods along the value chain and significantly erode competitiveness in import-reliant sectors such as commercial farming, retail and manufacturing activities. Taking these factors into account, Nigeria is ranked in a low 12th place out of 16 countries in West Africa, and 177th out of 201 countries globally for Trade Procedures and Governance in the Logistics Risk Index, with a score of 24.8 out of 100.*

Trade Competitiveness Constrained By Extensive Red Tape And Corruption

West Africa - Trade Procedures & Governance




*Note: 100 = lowest risk; 0 = highest risk. Source: Fitch Solutions Logistics Risk Index*

### Latest Trade Procedures And Governance Analysis

- In 2019, Nigeria reduced the time needed to export and import by implementing joint inspections, the NICIS2 electronic system and around-the-clock operations at Apapa Port. A key factor of the recent reforms being implemented by Nigeria since 2017 has been a move to tighten operations at Nigeria's ports by reducing the number of agencies needed to clear cargo, creating single checkpoints for goods in transit, and banning non-official workers from the area. In the past, 14 agencies were required to clear cargo at the port, but this has been reduced to seven. Now these seven agencies must act as a single task force, at a central location, and payments must be made through the Corporate Affairs Commission website (CAC). Only on-duty personnel will now be allowed in secure areas at ports and airports. The government hopes these reforms will quicken processes at entry points, and curb bribery and corruption.
- Transport developments are set to gain pace significantly and will be the outperforming sector within the infrastructure industry over the coming years given the significant focus government has been placing on the roads, ports and rail sectors. The Nigerian rail sector is a major area of growth - both in terms of the rehabilitation of Nigeria's existing railways as well as greenfield projects in the freight, passenger and urban segments. This will boost overland connectivity significantly and reduce trade costs for firms in the medium to long term.
- Although Nigeria has a potentially large agricultural sector, its fresh produce exports are inhibited by the logistical risks of transporting perishable items by sea, rail and road to distant markets. Through the construction of 15 dedicated perishable cargo

terminals, Nigeria's Federal Ministry of Aviation can provide a platform for farmers to send produce to international markets while also ensuring cargo planes are carrying increased outbound and inbound loads. These terminals should also help facilitate the development of complimentary value-addition industries such as packaging and storage.

- High crime and security threats make many areas, particularly in the southeast and north-eastern regions, inaccessible, thereby impeding trade and extending lead times for cross-border traffic as drivers try to circumvent high risk areas (see Crime and Security Risk section). Similarly to Nigeria's military capability, the regional maritime security efforts remain weak, raising serious risks regarding the safety of cargo and personnel. Companies providing security for oil explorers have been asked to partner with the navy and share intelligence that can help fight piracy, smuggling and crude theft in the region. Businesses based in Nigeria face high freight insurance and additional security costs compared to those based in regional peers, Kenya and South Africa.

## Ease And Costs Of Trade

Customs inefficiency and a subpar transport infrastructure increase the cost of trading in Nigeria. The country's infrastructural shortcomings have roll-over effects, such as an increased risk of delays due to congestion, derailments and accidents. Consequently, it takes longer that the regional average times to move goods on the poor quality inland routes and there is high risk of damage to cargo or personnel in transit. These risks are amplified for firms engaged in cross-border activity with Nigeria's inland neighbours due to poor regional transport networks and high security risks, particularly in the Lake Chad region. Consequently, Nigeria ranks in 12th place out of 16 countries in West Africa, with a score of 31.0 out of 100 for Costs and Connectivity. Over the medium term, significant infrastructure developments such as the Lagos Free Trade Zone and regional road and rail developments will improve connectivity and trade velocity with more major industrial zones planned to be located closer to the ports.

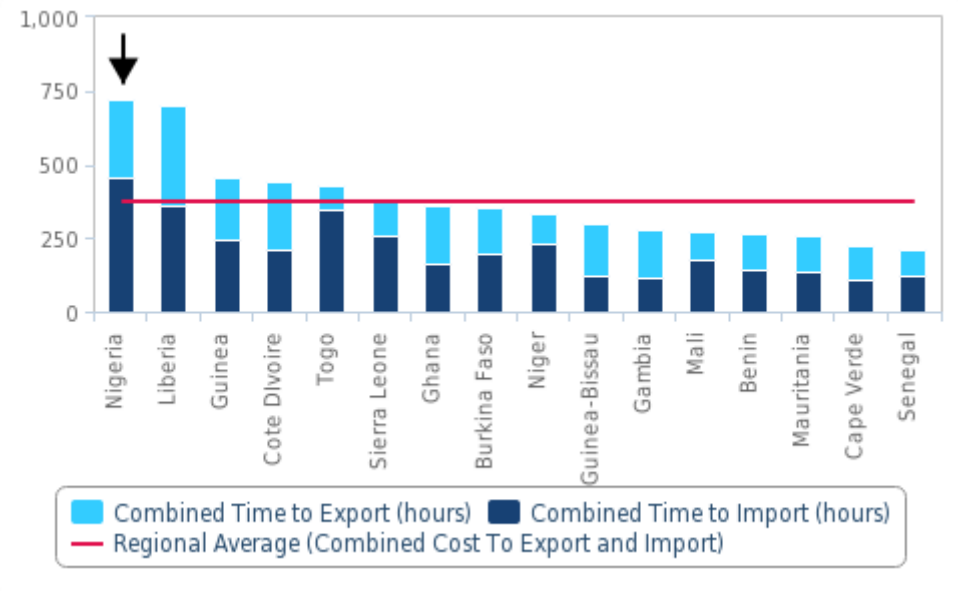
In addition to investing in hard infrastructure as a means to ensure smooth and efficient operations and reduce dwell times, there is a need to simultaneously strengthen soft infrastructure in the form of improved customs clearance processes and ancillary support services. Exporting from Nigeria is generally faster and cheaper than importing due to more efficient customs procedures which have been developed to enable the country's oil and gas resources to reach the market more swiftly. Importing goods, however, remains encumbered by byzantine procedures, changeable tariff policies and trade restrictions. The high costs of imports are further compounded by FX liquidity risks. The high costs associated with heightened levels of trade bureaucracy negatively impact Nigeria's ability to position itself as a regional transportation hub and decrease the country's trade competitiveness. This also increases the propensity for government officials and businesses to engage in bribery which raises legal costs and risk of reputational damage in the long run. Overall, we rank Nigeria well below Ghana and Cote D'Ivoire in 14th  place out of 16 countries in West Africa and 177th globally out of 201 states for Ease of Trading, with a score of 18.6 out of 100.

**NIGERIA - EXPORT PROCEDURES**

| Export Procedures | Duration, hours | Regional Average | Cost, USD | Regional Average |
|---|---|---|---|---|
| Border Compliance | 135 | 106 | 786 | 576 |
| Documentary Compliance | 131 | 84 | 250 | 129 |
| Totals | 267 | 190 | 1036 | 705 |

*Source: World Bank 'Doing Business'*

Lengthiest Trade Compliance Processes Regionally
West Africa - Time To Export & Import (hours)



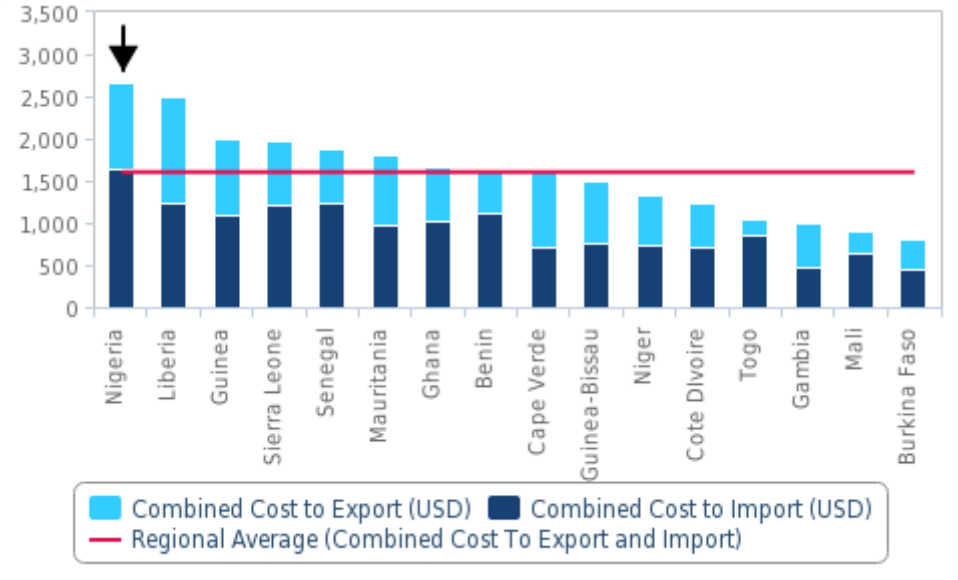

*Source: World Bank 'Doing Business'*

**NIGERIA - IMPORT PROCEDURES**

| Import Procedures | Duration, hours | Regional Average | Cost, USD | Regional Average |
|---|---|---|---|---|
| Border Compliance | 284 | 104 | 1077 | 584 |
| Documentary Compliance | 173 | 82 | 564 | 262 |
| Totals | 456 | 186 | 1641 | 846 |

*Source: World Bank 'Doing Business'*

High Import Charges Raise Industrial Input Costs
West Africa - Cost To Export & Import (USD)




*Source: World Bank 'Doing Business'*

## TRADE PROCEDURES AND GOVERNANCE RISKS

### Border Compliance

- Nigeria's trade appeal is considerably dented by extensive red tape and costly trade compliance requirements, further exacerbated by the challenges firms face in obtaining foreign currency in the country.
- The major trade costs in Nigeria are associated with border compliance, accounting for 76% of the total trade compliance costs for exports and 66% for imports.
- High customs charges, considerable delays at ports and terminal handling charges make the country an uncompetitive portal for imports where it could take around 12 days to carry out border compliance alone which is almost double the West African average for the same process.
- On the upside, greater regional cooperation in terms of trade procedures harmonisation is gaining traction. In August 2016, the Nigerian and Beninese Customs authorities signed a bilateral agreement aimed at improving trade facilitation and security in an effort to curb smuggling and criminal activities as well as stem revenue leakages. The states' plan to commence actions on formal interconnectivity through the setting up of computerised systems and the development of a consultative framework that will meet biannually to address all emerging issues and undertake evaluation.

### Documentary Compliance

- High costs and delays are associated with a burdensome customs regime, high clearing agent fees, excessive document requirements and long inspection times.
- The lack of adequate e-government services means businesses face onerous document preparation procedures that represent 49% of the total lead time in export procedures and 38% of the total lead time in import procedures.
- Documentary compliance is particularly costly for import procedures, thereby rendering businesses reliant on imported inputs less competitive in this regard due to high trade costs.

### Ports And Inland Transport

- The time taken to trade is partially shortened due to the increasing development of proximal major industrial areas to port infrastructure, which lowers the risk of delays; however, the cost of inland transportation and handling is high, standing at USD650 for containerised goods, for a distance of 11km from Apapa port, according to the World Bank.
- This is in part due to the concentration of economic activity in the southern regions of the country and ongoing investment in the development of internal transport networks and strategic port infrastructure near special economic zones, such as the USD6bn Lagos Free Trade Zone Port currently under construction.
- The potential for increased liner connectivity, rail development and expansion of road infrastructure will have a positive impact on the efficiency of ports and terminal handling and improve overall lead times.
- Recent efforts to modernise the Nigerian Customs Service and Ports Authority have reduced port congestion and clearance times, however there is still a long road ahead in terms of digitisation and streamlining of trade procedures. These efforts include an ongoing programme to achieve 48-hour cargo clearance, particularly at Lagos' Apapa Port, which handles over 40% of Nigeria's formal trade. Reducing the number of agencies based at the port should also help alleviate bureaucratic bottlenecks and is likely to come about through gradual reforms as port developments come online.

### Corruption and other risks

- Businesses face a high risk of being solicited for bribes when dealing with any government department, raising legal costs significantly. Given the corruption risk associated with the Nigerian business environment, potential investors often develop anti-bribery compliance

programmes. Countries that are party to the OECD Anti-Bribery Convention are obliged to enforce anti-bribery laws.

- The Nigerian Customs Service (NCS) called for a total ban on rice imports to be imposed in 2017. Currently, there is a prohibition only on rice imported through overland routes, while rice can be imported through the ports subject to tariffs. The NCS has opposed similar measures in the past on the grounds that they contributed to an increase in smuggling - which contradicts its actions, however, as it lifted the ban in October 2015 via citing customs revenues lost to smuggling. The recent ban was justified by the central bank as a measure necessary to preserve foreign exchange, despite smuggling risks.
- Security risks in the northern regions and the Niger Delta area continue to limit the logistical capacity in the country, raising significant cargo and personnel insurance costs. Large trucks are vulnerable to cargo theft, destruction, while piracy and kidnapping-for-ransom remain key risks for maritime and inland traffic, adding to operational costs.

*Source: Fitch Solutions, World Bank*

# Logistics Risk Methodology

Our Operational Risk Index quantitatively compares the challenges of operating in 201 countries worldwide. The index scores each country on a scale of 0-100, with 100 being the lowest risk state. The entire index consists of 24 sub-index scores and 84 individual surveys and datasets, which all contribute to the headline score. A full methodology can be found at the end of the report.

Each country has a headline Logistics Risk Index score, which is made up of three categories of analysis, each further broken down into sub-categories. The individual categories and sub-categories are also scored out of 100, with 100 the best.

The Logistics Risk Index score is calculated using the average of the **Utilities Network**, **Transport Network**, and **Trade Procedures and Governance** scores.

**Utilities Network:** This indicator assesses both the cost and availability of four key utilities: electricity, fuel, water and internet services, with countries offering cheaper and more reliable supplies scoring highly.

**Transport Network:** This indicator assesses the extent and quality of road, rail, port and air transport networks within a country, which indicate capacity to meet businesses supply chain needs.

**Trade Procedures and Governance:** This indicator assesses the ease of exporting and importing goods in a given country based on the available connections to international supply chains and the impact of bureaucracy and customs procedures on trade times and costs.

**WEIGHTING OF INDICATORS (%)**

| Indicator | Weighting |
|---|---|
| **Utilities Network** | **33 of which** |
| Cost of Utilities | 50 |
| Availability Of Utilities | 50 |
| **Transport Network** | **33 of which** |
| Quality of Transport Network | 50 |
| Extent of Transport Network | 50 |
| **Trade Procedures and Governance** | **33 of which** |
| Ease of Trade | 50 |
| Costs and Connectivity | 50 |

*Source: Fitch Solutions*

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