Fitch Solutions

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Nigeria

Infrastructure Report

Includes 10-year forecasts to 2028

Contents

Key View

Key View: Though accelerating from the previous year, Nigeria's construction growth will remain sluggish in 2019 as ongoing government fiscal constraints, elevated market risks, and weak prospects for reform weigh on the sector. We have revised down our long-term construction growth outlook for Nigeria and we are now expecting growth to average 4.8% annually to 2028, down from 7.7% previously.

Forecast and Latest Updates

- We forecast that Nigeria's construction sector will grow by 3.4% in real terms in 2019, representing a slight acceleration on the previous year, with newly released data showing the industry grew by just 2.3% y-o-y in 2018. Nevertheless, this remains well below potential, and indeed we have recently revised down our long-term growth forecasts for Nigeria, on the back of ongoing government fiscal constraints, elevated market risks, and weak prospects for reform following the re-election of President Muhammadu Buhari.
- In our view, these factors will continue to weigh on construction industry growth prospects in the country over the medium term at least, and consequently we are now expecting growth to average 4.8% annually to 2028, down from 7.7% previously.
- While this outlook still represents an improvement on the growth posted in recent years, it remains well below Nigeria's potential and the double-digit growth seen prior to 2015, and also fails to meet the level required to support the country's economic and population growth.
- In particular, while the rise in the oil price will provide some support to the government budget, we do not envisage a return to the levels of spending which drove double-digit growth prior to 2014. Without significant increases in private investment, which we do not expect in the medium term, construction growth will fail to reach previous highs.

INFRASTRUCTURE - CONSTRUCTION INDUSTRY FORECASTS (NIGERIA 2019-2028)

Indicator	2019f	2020f	2021f	2022f	2023f	2024f	2025f	2026f	2027f	2028f
Construction industry value, NGNbn	7,009.4	8,265.9	9,544.9	10,803.3	12,239.3	13,839.7	15,619.4	17,763.0	20,296.8	23,279.6
Construction industry value, real growth, % y-o-y	3.4	3.9	4.5	4.8	4.9	4.7	4.5	5.3	5.8	6.2
Construction industry value, % of GDP	4.8	4.8	4.9	4.9	4.9	5.0	4.9	4.8	4.9	5.0

f = Fitch Solutions forecast. Source: National Bureau Of Statistics, Fitch Solutions

Risk/Reward Index

- Nigeria is ranked 43rd out of 105 markets globally in our Infrastructure Risk/Reward Index, and third out of 18 markets in the Sub-Saharan Africa (SSA) region. As one of the largest markets in SSA, with a significant project pipeline and growth potential, Nigeria has an overall score of 53.5 out of 100.
- Nigeria has recovered its position at the top of the regional rankings due to a slowly brightening growth outlook and progress on delivery of a number of major projects which had stalled. Nevertheless, high operating risks in the market continue to keep the score capped and threaten the country's regional ranking.

INFRASTRUCTURE RISK REWARD INDEX (NIGERIA 2019)

Geography	Risk/Reward Index	Rewards	Industry Rewards	Country Rewards	Risks	Industry Risks	Country Risks
Nigeria	53.5	73.7	80.6	63.3	23.3	29.7	16.8

Source: Fitch Solutions

SWOT

SWOT Analysis

Strengths

- The federal government has made improving Nigeria's infrastructure a top priority for national development across all sectors, but particularly in transport and energy.
- Nigeria's fundamentals will provide long-term demand for construction. Its population is approaching 180mn with a growing middle class that will demand more houses, more power and improved transport links.
- Nigeria is Sub Saharan Africa's largest economy and offers huge demand for expansion of transport and power infrastructure in order to facilitate growth and development.
- The established oil industry has growth potential and is a key revenue source for the government to address the infrastructure deficit.

Weaknesses

- Given the country's high levels of corruption and bureaucratic inefficiency, many public sector construction projects are heavily delayed.
- The economy is over-reliant on the oil sector, as are government revenues. As such, the fall in global oil prices has impacted the construction sector.
- Extremely high electricity deficit with frequent power cuts due to poor management of the sector.
- Security threats, particularly in the Niger Delta region and in the north of the country, present a formidable risk to international infrastructure and construction companies. International workers are often the target of kidnappings.

Opportunities

- The government's new economic transformation plan puts infrastructure investment at the forefront of development plans in the age of lower oil prices.
- The government intends to privatise and open up investment in the transport infrastructure sector, following similar moves in the power sector.
- Given the lack of major domestic players with developed capacity and management, there are opportunities for international construction firms operating in Nigeria.
- Reforms to the mortgage market and the National Mortgage Refinance Company should see demand for housing increase.

Threats

- Periodic militant attacks have slowed operations at existing oil facilities, as well as those under construction; Boko Haram militants are known for targeting international employees.
- Uncertainty surrounding the PIB, which aims to regulate the oil industry.
- A massive devaluation of the naira, high inflation and unorthodox monetary policy will reduce demand for private sector construction projects.
- The re-election of President Muhammadu Buhari has dented prospects for reform which would have opened up the economy and the infrastructure sector to more private investment.

Industry Forecast

Construction And Infrastructure Forecast Scenario

Key View: Nigeria's construction industry growth will continue to disappoint over the next decade, remaining well below potential as government investment is constrained by a large fiscal deficit and private investors are deterred by numerous operational risks. While projects in the road, rail and port sectors will move forward, supported by Chinese financiers and construction companies, the pace of infrastructure development will be slow.

Latest Developments

- We currently expect Nigeria's construction industry to grow by 3.4% y-o-y in 2019, representing an acceleration on the 2.3% growth recorded in 2018, as progress continues on projects in the road, rail and port sectors. Beyond 2019, we expect the industry to grow by an annual average of 4.8% y-o-y to 2028, with this slow growth outlook reflecting structural weaknesses in the market.
- A number of factors will weigh on construction growth over our long-term forecast period. The result of the February election, which was won by incumbent President Muhammadu Buhari, contrary to our expectations, has dimmed even the limited prospects for reform which would have been possible with a victory for the opposition candidate Atiku Abubakar. The lack of reform progress, combined with limited gains to the oil price restricting government revenues, will consequently prevent a rapid growth acceleration in the construction sector.
- In the short term, transport infrastructure will be the main driver of growth, as Chinese investment in railways and ports provides some impetus to the industry. Residential and non-residential building will lag behind in the short term, with the outlook damaged by the counter-productive housing law introduced in March 2019. Over the longer-term, however, the sector will begin to pick up with considerable pent-up demand for housing units.

CONSTRUCTION AND INFRASTRUCTURE INDUSTRY DATA (NIGERIA 2018-2028)											
Indicator	**2018e**	**2019f**	**2020f**	**2021f**	**2022f**	**2023f**	**2024f**	**2025f**	**2026f**	**2027f**	**2028f**
Construction industry value, NGNbn	6,031.1	7,009.4	8,265.9	9,544.9	10,803.3	12,239.3	13,839.7	15,619.4	17,763.0	20,296.8	23,279.6
Construction industry value, real growth, % y-o-y	2.3	3.4	3.9	4.5	4.8	4.9	4.7	4.5	5.3	5.8	6.2
Construction industry value, % of GDP	4.7	4.8	4.8	4.9	4.9	4.9	5.0	4.9	4.8	4.9	5.0
Infrastructure industry value, NGNbn	4,436.09	5,201.19	6,225.42	7,218.15	8,134.04	9,149.04	10,297.44	11,576.98	13,027.97	14,682.81	16,580.33
Infrastructure industry value real growth, % y-o-y	3.4	4.3	5.5	4.9	4.3	4.1	4.2	4.1	4.2	4.4	4.6

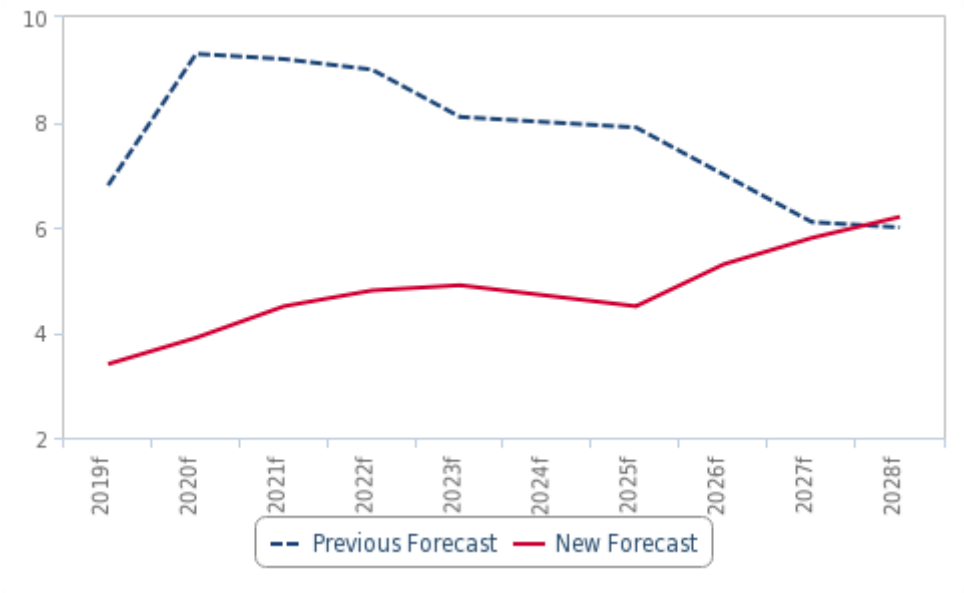
e/f = Fitch Solutions estimate/forecast. Source: National Bureau of Statistics, Fitch Solutions

Structural Trends

We expect Nigeria's construction growth trajectory to remain firmly below potential over our long-term forecast period. Our forecast has been adjusted to account for our more bearish outlook on the sector, with growth averaging 4.8% y-o-y in real terms to 2028, down from 7.7% previously. While this outlook represents an improvement on the growth posted in recent years, it remains well below Nigeria's potential and the double-digit growth seen prior to 2015, and also fails to meet the level required to support the country's economic and population growth. Nigeria's infrastructure is not currently sufficient to facilitate growing business activity, with logistics bottlenecks and power shortages particularly pressing issues, while housing stock remains far short of demand for the rapidly expanding population. Weak growth in the construction sector means that these issues will continue to hold back the country's development over coming years.

Growth To Remain Below Potential

Nigeria - Construction Industry Real Growth, % chg y-o-y

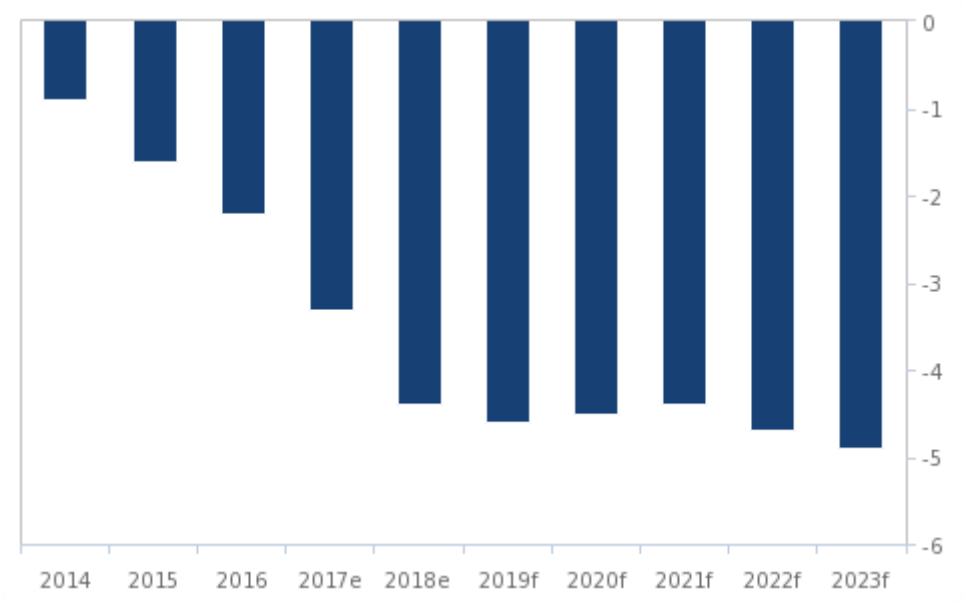


e/f = Fitch Solutions estimate/forecast. Source: Nigeria Central Bank, National Bureau of Statistics, Fitch Solutions

A range of factors, including limited government spending and high operating risks, will weigh on growth in the construction sector going forward. A major concern is the fiscal constraints on the government, which will restrict spending on infrastructure that is crucial for driving growth. While government revenues will be boosted by increasing oil exports and a rising oil price, other efforts to improve revenues such as expanding the tax base will prove difficult, while rising current expenditure will widen the fiscal deficit (*see 'Revenue Constraints Driving Nigerian Fiscal Deficit To Widen', May 7 2019*). In particular, government spending will be focused on personnel costs, with the minimum wage rising in April, and additional funding diverted to tackle ongoing security threats. Our Country Risk team expects some cuts to capital expenditure as a result, and while borrowing remains an option for government financing of infrastructure projects, this restricted funding capacity will drag on growth in the construction industry.

Little Fiscal Space For Additional Infrastructure Spending

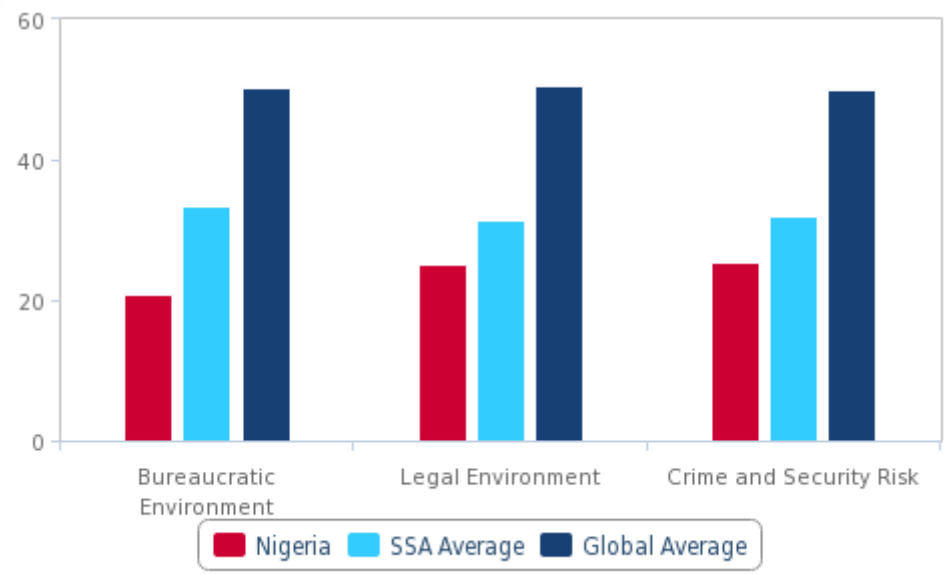
Nigeria - Budget Balance, % GDP



e/f = Fitch Solutions estimate/forecast. Source: Nigeria Central Bank, Fitch Solutions

At the same time, attracting private sector investment in infrastructure remains a challenge due to fundamental risks in the Nigerian market. Construction firms are subject to a range of obstacles when operating in Nigeria which will continue to deter investors lacking in a high risk appetite. The regulatory environment remains opaque and confusing, particularly in the rail sector, while competition with state-owned enterprises often puts construction firms at a disadvantage. Multiple layers of bureaucracy, overlapping jurisdictions and a lack of oversight also means that firms are at risk of being solicited for bribes by officials, with corruption perceptions high in the country. Security issues also remain a key concern for the construction sector, with Boko Haram active in the north and militants continuing to operate in the Niger Delta. A number of construction workers have been kidnapped in the country in recent months, with construction sites posing a key target for armed groups due to their often remote locations and lack of security protection.

Attracting Private Investment Remains Challenging
Operational Risk Sub-Component Scores



Note: Scores out of 100. Higher score = Lower risk. Source: Fitch Solutions Operational Risk Index

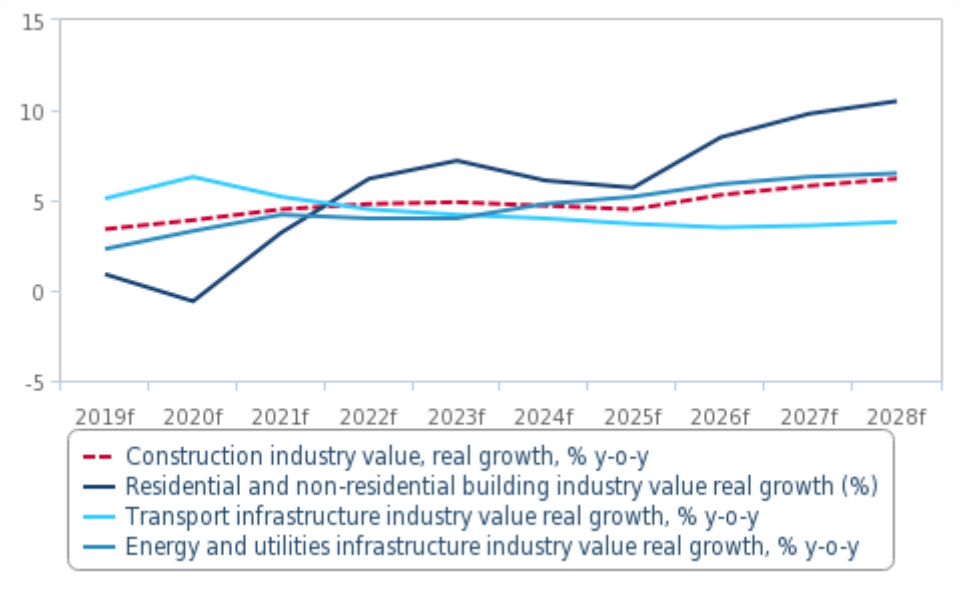
Lack of major reform will make it difficult to attract more private sector investment into infrastructure. The victory of incumbent President Muhammadu Buhari in the February elections means that even the limited prospects for reform which would have been possible under his challenger, Atiku Abubakar, will not be realised (*see 'Nigeria Elections: Little Change & Modest Growth For Infrastructure', January 23 2019*). In particular, we expected Abubakar to have some success with reforming the management and oversight of the rail and oil and gas sectors, which would have attracted more private sector investment. However, Buhari's poor track record on carrying out reforms means that we see little upside potential for infrastructure growth over the course of his second term, which is due to last until 2023. Indeed, initial signs suggest that the construction outlook for Buhari's second term may be worse than we expected, with a new housing law passed in March including provisions which are likely to weigh on residential construction (*see 'Quick View: Nigeria's New Housing Law To Weigh On Residential Construction', March 20 2019*). This has further informed our new, more pessimistic long-term outlook for Nigeria's construction sector.

We expect to see some improvement in growth over coming years, initially driven by transport developments. Our forecast expects average construction industry growth of 4.3% y-o-y over the medium term, representing an acceleration on the average of 2.9% annually since 2014. This improved outlook will largely stem from transport developments in the road, rail and port sectors, all of which are seeing some substantial activity. The government is prioritising road upgrades and construction, notably the second Niger Bridge project, in order to alleviate logistics bottlenecks, and there have been signs of growing private sector interest in the sector (*see 'Nigeria's Road Development Gathering Pace', August 7 2018*). Rail projects are also progressing, including the remaining sections of the Lagos-Kano standard gauge railway, which is under construction by **China Civil Engineering Construction**

Corporation (CCECC). Meanwhile, extensive port plans are in the pipeline, including the Lekki port development in Lagos and deep sea ports at Olokola and Bakassi. These projects will keep Transport infrastructure sub-sector growth outperforming other sub-sectors in the short-term.

Transport Development Driving Short-Term Growth

Nigeria - Construction Industry & Sub-Sectors Real Growth, % chg y-o-y



e/f = Fitch Solutions estimate/forecast. Source: Nigeria Central Bank, National Bureau of Statistics, Fitch Solutions

Over the longer term, we are less optimistic on some of the more ambitious planned transport infrastructure developments. President Buhari has pledged to complete the construction of the USD11bn Coastal Railway project from Lagos to Calabar, but the high costs involved have left the project struggling to attract financing and we do not expect it to be completed within our long-term forecast period. As we have previously highlighted, the government's ambitious rail and port plans are unlikely to be realised in full, due to a combination factors including uncertain viability, high costs and pressing operational risks (*see 'Rail: Ambitious Project Pipeline Facing Huge Challenges', May 24 2018; 'Nigeria's Port Development Plans Offer Growth Upside', November 26 2018*). We are more optimistic on the prospects for residential and non-residential building and energy and utilities over the long-term, mainly based on strong demand dynamics including rapid population growth, urbanisation, and increasing economic activity, which will necessitate investment in housing and power infrastructure.

Transport Infrastructure

Key View: *Progress on projects in the road, rail and port sectors, largely financed with Chinese loans and undertaken by Chinese contractors, will be the major driver of growth in the construction sector in the short- to medium term. The transport sector, as a whole, will see slower growth than previous years as government spending remains constrained by a persistent fiscal deficit, while private investment will remain limited as multiple risks continue to threaten the construction industry.*

Latest Developments

- We forecast that Nigeria's transport infrastructure will grow by 5.1% in real terms in 2019 and at an annual average of 4.4% between 2019 and 2028. Although this represents an acceleration on 2017 and comes as work progresses on a number of major road, rail and port projects in the country, we expect transport sector growth will remain below potential and the double-digit growth that was seen during the 2000s.
- The port sector holds considerable upside potential as Nigeria moves forward with a number of major port developments over the coming years. We are seeing activity in the port sector begin to pick up with a number of projects under construction or moving through the pre-construction phases. 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.
- 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 25.65sq km 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 a 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.
- Road construction is moving forward, with 88 road projects allocated funding in the 2017 budget fully complete and 66 projects 50% complete as of August 2018, according to the Federal Road Maintenance Agency (FERMA). Some of the largest projects underway include the USD2.9bn Calabar - Katsina - Ala Super Highway and the USD1.8bn Lagos - Badagry Expressway Expansion Project. In May 2019 the Federal Executive Council of Nigeria (FEC) sanctioned USD471mn for the construction and rehabilitation of 10 roads across the country.
- 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. We will monitor 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.

TRANSPORT INFRASTRUCTURE INDUSTRY DATA (NIGERIA 2018-2028)											
Indicator	**2018e**	**2019f**	**2020f**	**2021f**	**2022f**	**2023f**	**2024f**	**2025f**	**2026f**	**2027f**	**2028f**
Transport infrastructure industry value real growth, % y-o-y	4.5	5.1	6.3	5.2	4.5	4.2	4.0	3.7	3.5	3.6	3.8
Roads and bridges infrastructure industry value real growth, % y-o-y	4.9	6.5	7.0	5.5	4.0	3.5	3.4	3.2	3.0	3.1	3.5
Railways infrastructure industry value real growth, % y-o-Y	5.4	6.2	6.3	5.0	5.0	5.0	5.0	5.0	5.1	5.1	5.0
Airports infrastructure industry value real growth, % y-o-y	2.5	-3.1	0.8	1.5	1.8	2.3	1.9	1.5	1.6	1.7	1.7
Ports, harbours and waterways infrastructure industry value, real growth, % y-o-y	3.6	5.3	7.8	6.6	5.8	5.2	4.5	3.5	3.1	3.0	3.2

e/f = Fitch Solutions estimate/forecast. Source: National Bureau of Statistics, Fitch Solutions

Structural Trends

2019-2028: Transport To Outperform, Road And Rail In Focus

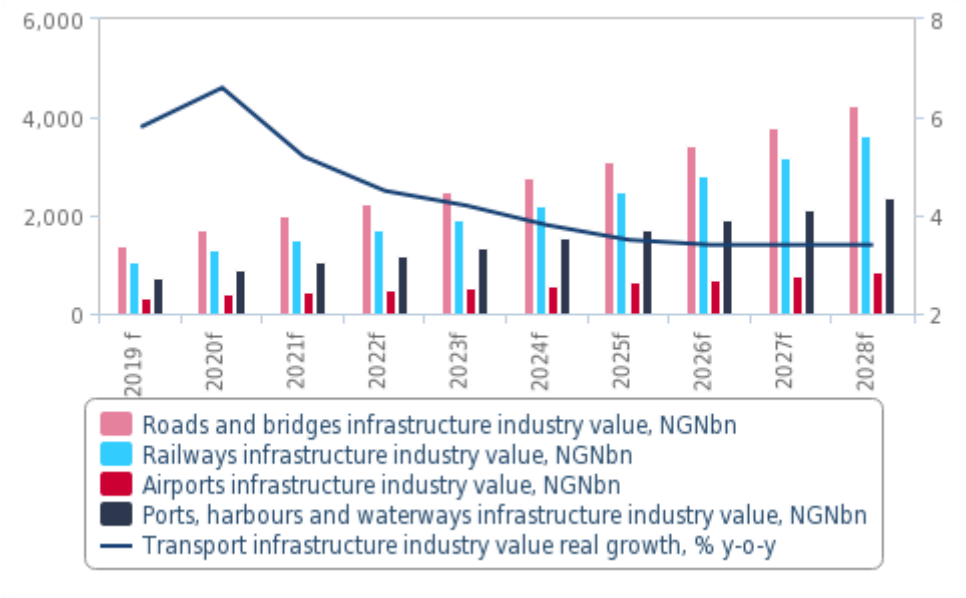
We forecast average real growth of 4.4% between 2019 and 2028 in the transport infrastructure sector, given the extensive capital spending for projects announced as part of the government's 2016 budget and its prominence in Nigeria's Economic Recovery & Growth Plan. The scale of the transport infrastructure deficit in Nigeria is such that the government alone will be unable to finance the majority of projects needed, so it will continue to rely heavily on international finance from sponsors such as China or the World Bank. The ERGP places a heavy emphasis on public-private partnerships (PPPs) across the transport sector, which would help leverage more private capital into projects. With the demand dynamics present in Nigeria's cities and logistics hubs, we highlight the market as one as the most promising in Africa.

Issues remain, however. Although in 2014 the federal government announced that it was developing frameworks to allow the private sector to develop roads, railways, ports and airports, there is still little in the way of clear and attractive legislation in place governing private investment in the transport sector. The ERGP states that the government will look to establish attractive frameworks for the private sector and address issues of conflicting legislation, poorly packaged project opportunities and governance of the various sectors. However, achieving these aims in Nigeria will take a significant period of time given the slow pace of policy formation, and strong opposition to change from entrenched vested interests.

The government has begun to address these more structural issues with the development of PPPs in the country, with the creation of the PPP Contracts Disclosure Portal. Poor visibility and transparency on contract details were significant deterrents to private investors looking for opportunities in Nigeria, with numerous project announcements often leading to nothing or projects significantly changing scope. The portal aims to improve transparency by making all non-confidential contract information available in one location. While this is undoubtedly positive, we believe this is one of the numerous steps which need to be taken to improve the PPP enabling environment in Nigeria, before projects can proliferate.

Growth Across Transport Sub-Sectors

Transport Sub-Sectors Value, NGNbn And Transport Infrastructure Real Growth, % chg y-o-y



f = forecast. Source: Fitch Solutions

Roads

We are seeing increasing momentum in road upgrade, expansion and greenfield projects in Nigeria as both national and local governments recognise the need to invest in improving road infrastructure in order to support economic growth. Much of the road improvement work underway is being directed by the Economic Recovery & Growth Plan (ERGP) 2017-2020, which has identified 4,000km of federal highways to be restored. The Federal Budgets for 2017 and 2018 also specified funding for road projects which is allowing construction to move forward, with 88 road projects allocated funding in the 2017 budget fully complete and 66 projects 50% complete as of August 2018, according to the FERMA. Our Key Projects Database shows 52 major road projects (over USD30mn value) currently under construction or in pre-construction phases, more than any other transport sector, indicating the priority position of road development in Nigeria's infrastructure plans. We are consequently expecting the roads and bridges sub-sector to grow by a healthy 4.3% y-o-y on average over our long-term forecast period from 2019-2028.

By targeting investment in road upgrades and expansion projects, the Nigerian government will be able to make relatively quick material improvements to the country's transport infrastructure which will directly benefit the operating environment through enhanced supply chain capacity and efficiency. Road projects are generally relatively low-cost, while the rehabilitation of existing roads is not plagued by the land acquisition and legal disputes which often delay greenfield projects in Nigeria. This creates a more viable business case for investment for both the government and private firms, in contrast to expensive greenfield rail projects which are also in the pipeline, but which will take many years to develop. According to our Key Projects Database, the value of the road project pipeline is USD13.4bn, compared to USD20.9bn for rail, despite there being 19 more road projects upcoming, indicating that road development can offer tangible infrastructure improvements at lower costs.

Road construction will be supported by new management and construction methods to be introduced in the coming years. The reintroduction of tolls on major public highways is listed as one of the aims of the ERGP, and in November 2017 the Minister of Power, Works and Housing announced that tolling plans had been finalised. The introduction of tolling has two major advantages – generating revenue for the maintenance of roads, which frees up funds for greenfield projects and creating a model for private sector investment in road assets by providing a guaranteed repayment revenue stream. While the reintroduction of tolling is not without risks, particularly the potential for public backlash against paying for previously free road use, it is being pioneered in other Sub-Saharan African countries such as Senegal and Uganda, and will be essential for helping governments to fund infrastructure development (*see 'Road PPP Highlights Private Investment Potential', June 7 2018*). In addition, the use of new technology for road construction created by **Julius Berger**, Nigeria's largest construction company, will strengthen road structures and reduce the

frequency of repairs and maintenance, cutting upkeep costs and freeing up funds for new developments.

Railways

Nigeria boasts a huge pipeline of rail projects, with 33 projects currently under construction or in pre-construction, posting a combined value of USD20.94bn. The pipeline of rail projects includes a wide array of different railway plans, including a Light Mass Rail Transit system in Lagos, rehabilitation of the existing narrow gauge railway lines from Lagos to Kano and from Port Harcourt to Maiduguri, and a new standard gauge railway network.

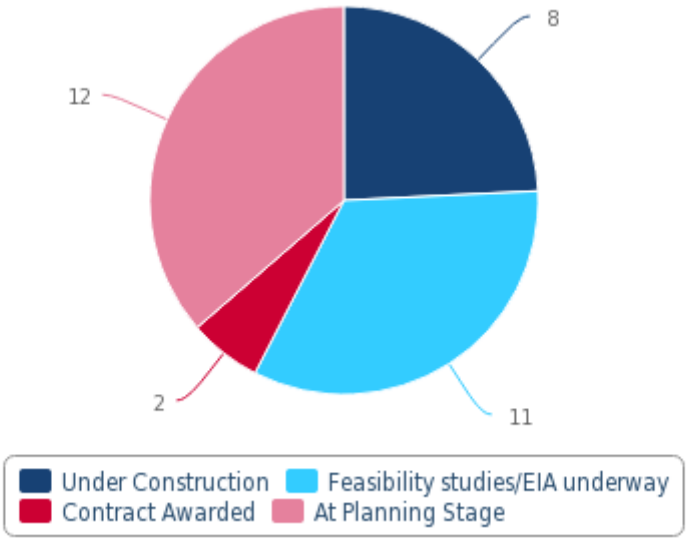
We believe that this project pipeline is unlikely to be fully realised due to a range of risks which threaten the viability of the ambitious development plans. In particular, we see the major headwinds stemming from the large number and scale of the projects, the difficulties attracting financing, and the potential for legal and security risks to delaying completion timelines. Although there is considerable interest in developing Nigerian rail assets from private investors and Chinese state-owned enterprises, the government is struggling to convert this into tangible progress.

While there is a clear need for infrastructure development in Nigeria, the large number of projects in the pipeline and the ambitious scale of the plans in place leads us to adopt a cautious view towards the success of many of the developments. The government and state-owned Nigerian Railways Corporation have articulated a number of railway development plans, notably the 25-year railway strategic vision launched in 2002, and more recently the ERGP which identifies priority railway projects to be implemented between 2017-2020. However, none of these programmes succeeds in presenting a clear, unified framework for railway development in the country, while deadlines for project completion and the implementation of new regulations have frequently been missed.

One of the most pertinent risks to development is the sheer number of projects in the planning stages. Even with the involvement of private capital and expertise, which is subject to its own risks, we do not believe that the Nigerian government has the capacity to support and manage the multitude of rail projects which are currently in development. This is illustrated by the slow pace of rail development thus far, with little progress on the somewhat vague aims articulated in the ERGP to complete two of the planned standard gauge railway lines. The ERGP does not give a clear plan of action or a detailed timeline for the development of either project, and we do not believe that they will be finished by the end of the ERGP's given time period in 2020. Only one section of the Lagos-Kano standard gauge railway has been completed thus far, following setbacks related to problems securing government funding, while construction has not yet begun on the Lagos-Calabar coastal standard gauge railway.

Most Projects Remain In Pre-Construction Phases

Nigeria - Rail Projects By Status



Source: Fitch Solutions Key Projects Database

Some of the country's railway plans also lack a clear business case, which calls into question their economic viability. For example, Nigeria has an existing narrow gauge railway network, with two main lines from the northern interior to the southern ports. Rehabilitation of this network is a key part of the government's railway development plans, with **General Electric** (GE) awarded the concession in 2016 as part of a consortium including **Sinohydro**, **Transnet**, and **APM Terminals**. However, plans are also in place to develop a new standard gauge railway network which will partly run in parallel to the existing lines.

Both of these development plans have drawbacks – the rehabilitation of the existing line has been beset by regulatory uncertainty and work has taken two years to commence following the awarding of the concession, while the construction of the new line is extremely costly and involves potential legal risks related to land acquisition. Establishing multi-use railways with different gauge types also makes little logistical sense - as where standard and narrow gauge railways meet, trains will have to be changed or bogies switched, causing delays to both passenger and freight travel. Consequently, with both projects facing numerous obstacles, there is a high risk that delays and profitability issues will lead to one or both of the rail lines failing to reach completion.

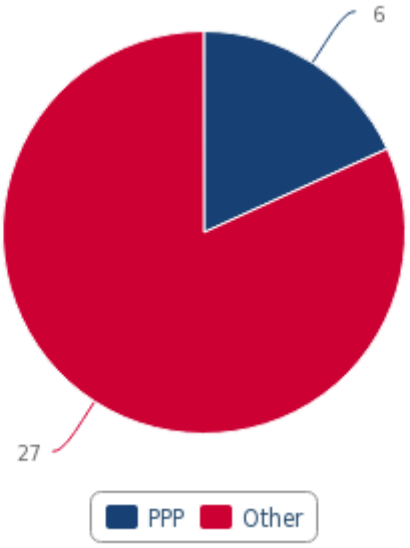
Another key risk to the completion of the rail projects is the lack of financing available. With over USD20bn worth of projects in the pipeline, multiple sources of funding will be required in order to bring the projects to completion. The Nigerian government lacks the funds to fully develop the rail concessions itself, as despite an expansionary budget announced in May 2018, our Country Risk team believes that spending will remain largely focused on recurrent expenditure such as security and social transfers, leaving less fiscal space for the funding of capital projects (*see 'More Of The Same From 2018 Budget', May 18 2018*). As a result, the government is seeking financing from other sources – notably China but also state-backed and private investors from other countries.

Chinese firms are involved in many of Nigeria's planned rail concessions, with the Export-Import Bank of China providing concessionary loans for the new standard gauge railway, which will be constructed by CCECC. Nevertheless, while China has been heavily involved in successful projects, the burden of financing Nigeria's significant rail project pipeline cannot be undertaken by China alone, leaving a considerable financing gap. In response, the government is hoping to replicate the successes it has had with securing Chinese financing with other investors, and in May 2018 the Transport Minister announced that the government was seeking funding from the Russian Export-Import Bank and Indian investors for the new standard gauge railways. This will be an important strategy given our expectations that international private infrastructure investors will remain extremely cautious towards Nigeria's rail sector.

We expect caution from the private sector given the high levels of risk across Nigeria's rail project life cycle - including securing appropriately structured financing, dealing with the country's difficult project implementation environment during construction and finally navigating entrenched vested interests in the transport sector during operation. Although a new railway act was passed in 2016 which hoped to address some of these issues affecting private investment and allow for greater use of PPPs, few projects have been successfully tendered thus far. As noted above, the concession awarded to GE has faced significant delays and legal issues, and there remains considerable regulatory confusion which will deter private investors (*see 'Privatised Rail Opportunities To Remain Elusive', November 28 2016*).

Private Investors Remain Cautious

Nigeria - Rail Projects By Procurement Type



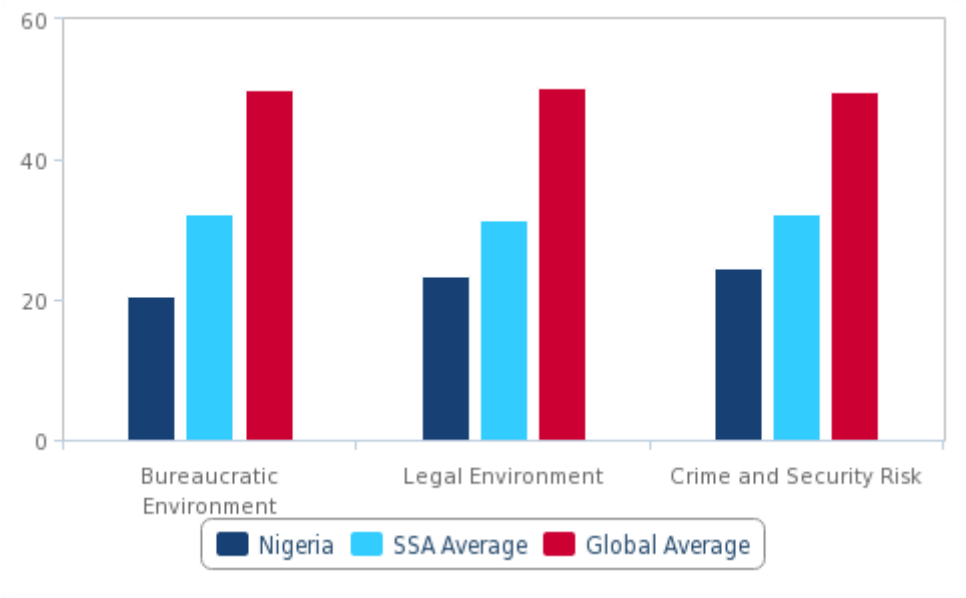
Source: Fitch Solutions Key Projects Database

Private investors in Nigeria's rail network will also require a high risk tolerance due to the prevalence of legal disputes and security threats. Many greenfield projects in the country are delayed by issues surrounding land acquisition, which is a slow process given the weakness of land rights and the rule of law. As seen with the GE rail concession, development can also be held up by legal disputes related to regulatory confusion, as multiple layers of bureaucracy and competing government agencies with overlapping jurisdictions create obstacles for investors. A long awaited National Transport Commission Bill is slowly moving through the legislature, which will help with transport industry oversight and regulatory standardisation, but opaque legal and bureaucratic environments will remain an obstacle for private investors.

Security risks are also likely to deter investment in some of the planned rail concessions, particularly those located in sensitive areas, such as the Niger Delta, or areas of militant activity such as the northeast of the country. Although security threats in both areas have receded somewhat, Niger Delta militants and Boko Haram remain active, and high-profile infrastructure developments would provide potential targets for militant attacks, particularly if they are not viewed as bringing tangible benefits to the local population.

Investors Require High Risk Tolerance

Operational Risk Sub-Component Scores



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

Ports

Nigeria is moving forward with a number of major port developments over the 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-construction phases. There are currently 11 port projects in the pipeline in Nigeria according to our Key Projects Database, 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. 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.

NIGERIA - PORT PROJECT PIPELINE

Project Name	Sub-Sector	Procurement Type	Value (USDmn)	Companies	Status
Lekki Deep Sea Port - Phase I, Lagos Free Trade Zone, Lagos	New Port	Engineer Procure Construct (EPC)	1500	Standard Bank, Africa Finance Corporation, Louis Berger Group, Tolaram Group, Lagos State Government, Nigerian Ports Authority, African Development Bank (AfDB), Rand Merchant Bank, Standard Chartered, European Investment Bank (EIB), China Harbour Engineering Company (CHEC)	Under construction
Onne Port Complex - Phase IVB, Port Harcourt, Rivers	Port Expansion	Public Private Partnership (PPP)	2700	Nigerian Ports Authority, Deep Offshore Limited, Nigeria Federal Executive Council - FEC	Under construction
Olokola Deepsea Port, Ondo	New Port	N/A	12000	Ondo State Government, COSCO Corporation	Under construction
Bakassi Deep Seaport Project, Cross River	New Port	Public Private Partnership (PPP)	N/A	China Harbour Engineering Company (CHEC), Broad Spectrum Industrial Services, Cross River State government	Project finance closure
Indorama Multi-purpose Port Terminal, Port Harcourt, Rivers State	Port Expansion	N/A	150	Oil and Industrial Services, Indorama Eleme Petrochemicals Limited, Rand Merchant Bank, International Finance Corporation (IFC)	Project finance closure
Ibom (Ibaka) Deep Sea Port Project, Akwa Ibom	New Port	Public Private Partnership (PPP)	N/A	Bolloré Africa Logistics, PowerChina, Akwa Ibom State Government, Nigeria Ministry of Transportation, Maritime & Transport Business Solutions, Nigerian Ports Authority	Contract Awarded
Tin-Can Island Port Expansion, Lagos	Port Expansion	N/A	N/A	Nigerian Ports Authority	At planning stage
Badagry New Deep Sea Port, Lagos	New Port	N/A	2600	Lagos State Government	At planning stage
Apapa Port Expansion, Lagos	Port Expansion	N/A	N/A	Nigerian Ports Authority	At planning stage
Warri Deep Seaport, Delta	New Port	N/A	N/A	Government of Nigeria	At planning stage
Bonny Deep Seaport, Rivers State	New Port	N/A	N/A	Government of Nigeria	Approved

N/A = not available. Source: Fitch Solutions Key Projects Database

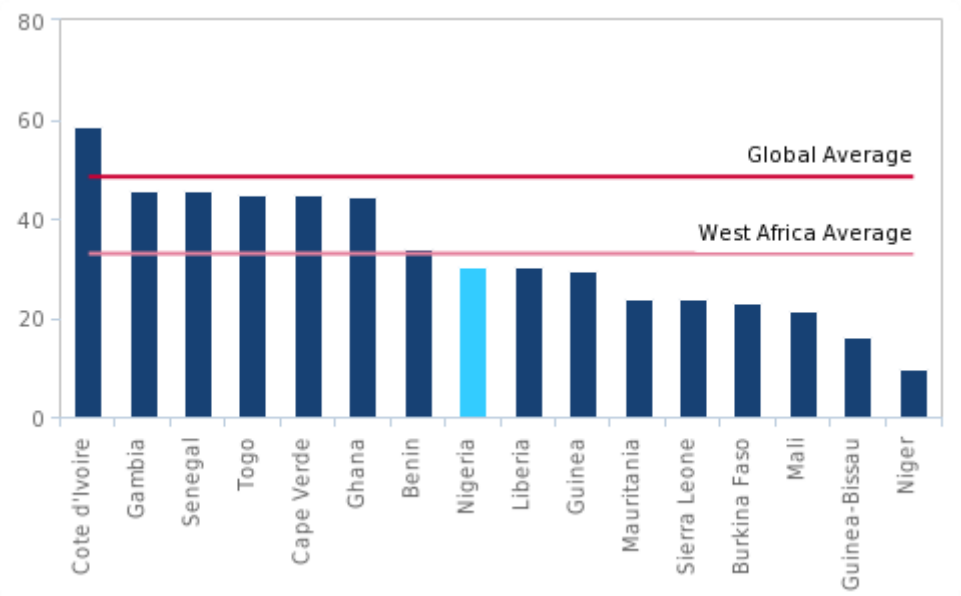
We hold a positive view on the prospects for several of these developments, which will support construction industry growth. The projects already underway have shown good progress, aided by the financial support of development and private sector banks and the involvement of major international construction firms. For example, the Lekki Deep Sea Port project secured financing from the African Development Bank (AfDB), the European Investment Bank and the UK's Standard Chartered, and is under construction by China Harbour Engineering Company. The announcement in November that a consortium including Bolloré had been chosen to develop the Ibom Deep Sea Port also bodes well for its progress, as the French firm already operates the Tincan port terminal in Lagos and has extensive experience in the West African market. The growing use of the PPP model will also aid expansion in the port sector, enabling the Nigerian government to leverage private and development financing and expertise and easing the fiscal pressure of infrastructure spending. As a result, we have revised up our forecast for construction growth in the port segment and

now expect an acceleration to 7.75% y-o-y in 2020 as these projects move forward, up from 4.3% y-o-y previously.

The ambitious nature of the port development plans and the questionable business case means we are less bullish on growth in the sector over our long-term forecast period (to 2028). While there is a compelling case for infrastructure improvements in Nigeria, which scores poorly on the Transport Network indicator of our Operational Risk Index, the business case for so many new ports is uncertain. Under the current plans, the country would have three deep sea ports in Lagos, three in and around Port Harcourt and two in the Cross River estuary near Calabar, as well as three further deep sea ports elsewhere in the country. This would mean 11 deep sea ports in total, up from four currently. Given that 70% of imports are currently via ports in Lagos according to data from the Nigerian Ports Authority, existing ports elsewhere in the country are already operating below capacity. Combined with the currently limited nature of trade in manufactured goods, particularly for exports, nearly 90% of which are comprised of mineral products such as oil and gas, the need for so many new port developments in the short-medium term is highly questionable. Many of the planned port developments also lack existing supporting infrastructure, such as roads and railways, requiring much additional investment to ensure they are usable and further undermining their viability.

Investment Needed To Improve Transport Network

West Africa & Global Average - Transport Network Scores

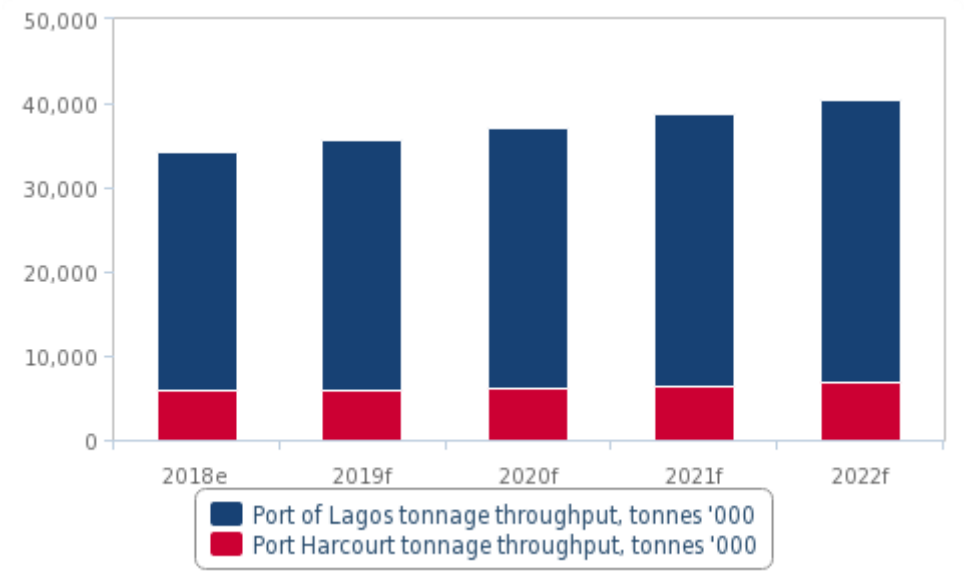


100 = Lowest risk; 0 = highest risk. Source: Fitch Solutions Logistics Risk Index

These conditions are even reflected in the government's own infrastructure plans, with the NIIMP calling for just two new deep sea ports to be constructed over the next five years, an objective echoed by the AfDB's Infrastructure Action Plan For Nigeria, and which will be met when the Lekki and Olokola Deep Sea Ports are completed. Consequently, we think that several of the planned port developments which have yet to progress beyond the planning stage, will fail to materialise, at least over our long-term forecast period. The weak business case for the news ports will be thrown into sharp relief as we expect several of the port developments currently under construction, notably those outside Lagos, will struggle to attract business when operational, especially when they are competing with other existing terminals. In particular, we highlight planned deep sea ports at Bonny, Badagry and Warri, which would all compete with existing nearby facilities, as unlikely to progress. We are therefore forecasting growth in the port sector to moderate after 2020, averaging 4.5% y-o-y, mainly supported by port expansions in Lagos.

Lagos Dominance Undermines Business Case For New Ports

Nigeria Main Ports - Annual Throughput, tonnes '000



e/f = Fitch Solutions estimate/forecast. Source: Nigerian Ports Authority, Vanguard

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. One of the most high-profile examples of a greenfield port project is the Lekki Deep Sea Port. While this development has faced some issues and delays, resulting in the termination of a contract with Philippine container terminal operator International Container Terminal Services (ICTSI) to develop a container terminal at the site, construction remains ongoing by China Harbour Engineering Company as of August 2018, with **CMA CGM** having now signed a Memorandum of Understanding to operate the terminal once complete.

However, more structural risks remain a key drag on investor perceptions of Nigerian infrastructure and are likely to have been the reason behind the cancellation of the ICTSI port deal. While the sector was one of the first in Nigeria to undergo a form of liberalisation through allowing the private operation of port terminals, greenfield PPP projects such as Lekki remain vulnerable to Nigeria's poor project implementation environment. In particular, we note the sluggish pace of reform and a weak bureaucratic process open to corruption as key reasons which continue to delay port projects. Rent-seeking activities by officials, a lack of engagement with stakeholders and a patchwork of governing authorities all contribute to disjointed project planning and difficulty in signing deals.

A pertinent example of this poor planning and patchwork of responsibility is the dilapidated state of the roads leading to the existing Apapa and Tincan port facilities in Lagos, which in March 2017 saw lorry drivers stage a strike and port operators withdraw services due to damage and delays caused by accessing the ports. In response, the National Ports Authority (NPA) announced it would raise capital for the road repairs, along with a number of private contributors and the Ministry of Power, Works and Housing. It remains unclear, however, how responsibility will be shouldered for the remainder of the cost, repairs and ongoing maintenance for the roads. Similarly, the staff at the ports have demanded that both the Ministry and the NPA address poor power supply issues. We expect that similar issues in this critical area of ancillary connecting infrastructure for ports to continue to be a recurring issue for greenfield projects in Nigeria. Indeed, the Badagry and Lekki port developments will require significant investment in new road and rail connections to be an attractive operating location.

To address some of these issues of low investment attractiveness in the port sector, the government has issued an executive order directed towards improving efficiency at Nigeria's ports. Reforms include: a single location for agencies to record goods arriving and leaving the port will be created; non-essential agencies to be banned from ports to ensure as few delays to cargo as possible are created and the chance or bribery is limited; and 24-hour operations required at the port of Apapa. Given that the multitude of more

general risks not specific to the port sector will remain detrimental to investor sentiment and will require significant reform rather than a short-term fix, we do not expect these measures to tangibly improve the attractiveness of Nigeria's planned greenfield projects.

Airports

We expect the airports sector to be the weakest sub-sector of transport infrastructure in terms of growth over the next decade. There are currently just two airport projects under construction according to our Key Projects Database, with seven having been recently completed. These facilities include Murtala Muhammed International Airport, Mallam Aminu Kano International Airport, MKO Abiola International Airport and Port Harcourt International Airport. Following the completion of these projects, the project pipeline is small, with only three airports currently in the planning stages. As such, we expect the airports infrastructure sector to contract by 3.1% y-o-y in 2019, and remain on a subdued growth trajectory thereafter, averaging growth of 1.6% y-o-y between 2020-2028.

We had previously noted that three consortia led by **Bouygues Batiment**, **Eko Global** and **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 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. However, securing private investors for the project has proven a challenge and we do not expect it to move forward over our medium-term forecast period (to 2022).

NIGERIA - MAJOR TRANSPORT INFRASTRUCTURE PROJECTS

Project Name	Sector	Value (USDmn)	Size	Unit	Companies	Timeframe End	Status
Olokola Deepsea Port, Ondo	Ports	12,000	N/A		Ondo State Government, COSCO Corporation	N/A	Under construction
Coastal Railway Project, Lagos - Calabar (Cross River)	Rail	11,117	1,385	km	China Civil Engineering Construction Corporation (CCECC), Government of Nigeria	N/A	At planning stage
Fourth Mainland Bridge, Lagos	Roads & Bridges	4,207	36	km	Lagos State Government	N/A	In tender/ Tender launched
Ogun State Intercity Railway Line	Rail	3,510	334	km	China Civil Engineering Construction Corporation (CCECC), Ogun State Government	2019	At planning stage
Onne Port Complex - Phase IVB, Port Harcourt, Rivers	Ports	2,700	N/A		Nigerian Ports Authority, Deep Offshore Limited, Nigeria Federal Executive Council - FEC	2020	Under construction

N/A = not available. Source: Fitch Solutions Key Projects Database

Energy & Utilities Infrastructure

Key View: *Growth in Nigeria's energy & utilities infrastructure sector will gradually recover over the coming years as improving macroeconomic conditions help drive investment in hydropower, solar and pipeline projects. Transmission and grid infrastructure is also gaining traction as part of the government's 2017-2020 ERGP initiative.*

Latest Developments

- We have slightly revised down our forecast for Nigeria's energy & utilities infrastructure sector, expecting it to grow 2.3% in real terms in 2019 and at an annual average of 4.7% between 2019 and 2028. Although the project pipeline is considerable, there remain difficulties with project financing and implementation and many therefore remain in the planning stages. That said, growth will accelerate in the next few years as the government works on implementing its 2017-2020 Economic Recovery & Growth Plan (ERGP), which outlines investments in hydropower, renewable power and transmission projects.
- The concession process to award a tender for the 30MW Gurara hydropower plant in Kaduna is expected to begin in 2019. The USD18.4mn plant will generate 115GWh of energy annually. The project comprises an earth-fill-rock dam, a water transfer tunnel, a power house, a power transmission line, an irrigation scheme, a spillway, bottom outlet access roads and associated works. The public-private partnership concession will be granted on operate-and-maintain model. The concessionaire will be responsible for generating hydro power and connecting it to the transmission network made available by the Transmission Company of Nigeria.
- In January 2019, the French development agency granted a USD245mn financial package to the **Transmission Company of Nigeria** (TCN) to support a power transmission project in northern parts of the country. The project, dubbed Northern Corridor Project, forms the backbone for the West African Power Pool connecting Nigeria, Niger, Benin and Burkina Faso through a 330kV direct current (DC) transmission line.
- In June 2018, the World Bank, the African Development Bank, Japan International Cooperation Agency and Agence Française de Développement committed USD1.57bn in donor support to Nigeria for improving the power supply. The funding will be used for the TCN's Transmission, Rehabilitation and Expansion Programme to add an initial 20GW capacity in the coming four years.

ENERGY AND UTILITIES INFRASTRUCTURE DATA (NIGERIA 2018-2028)

Geography	Indicator	2018e	2019f	2020f	2021f	2022f	2023f	2024f	2025f	2026f	2027f	2028f
Nigeria	Energy and utilities infrastructure industry value real growth, % y-o-y	0.8	2.3	3.3	4.2	4.0	4.0	4.8	5.2	5.9	6.3	6.5

e/f = estimate/forecast. Source: Fitch Solutions

Structural Trends

2019-2028: Limited External Financing Support Weighing On Project Progress

Over 2019, 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 the transmission grid infrastructure. Such investment supports our forecasts for a recovery in growth in the energy & utilities sector. 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 with investors remaining on the sidelines. 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.

Key aims of the EGRP include:

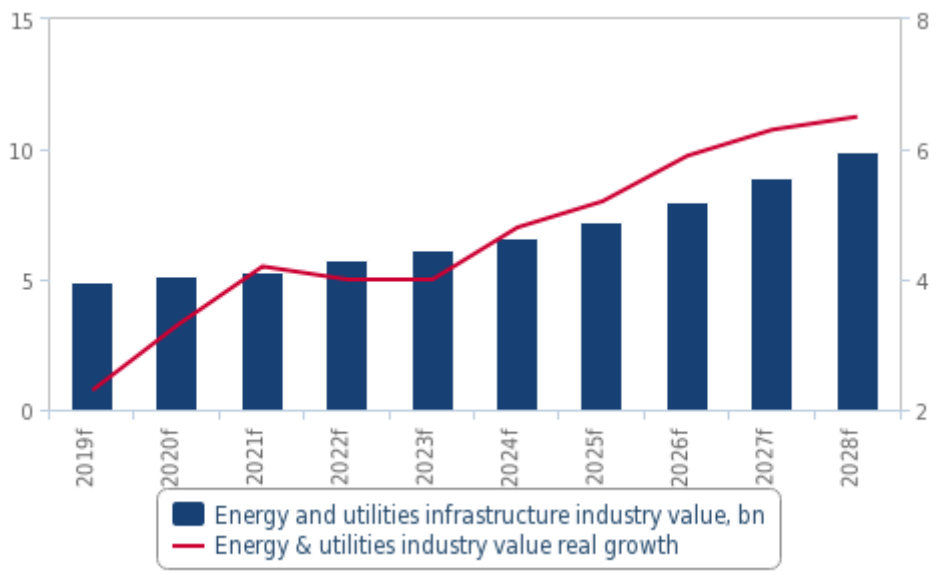
- Improving gas supplies through new infrastructure, more security and the gas flare commercialisation programme.
- Restructuring the Transmission Company of Nigeria to improve management and operational efficiency.
- Introducing cost-reflective electricity tariffs.
- Resolving debts between ministries, departments and agencies and the distribution companies.
- Supporting the roll-out of a nationwide metering programme.

The policy formation required to realise the above will continue to be slow as the current administration faces increasing criticism for its handling of various national issues. As such, our forecasts for the sector remain muted. Should the above be implemented, however, crucial hurdles to the attraction of private investment will have been addressed, allowing interest in greenfield IPPs in Nigeria to grow.

However, even if some of the structural issues affecting the attractiveness of the power sector are addressed, the general investment environment in Nigeria will continue to weigh on the country's ability to attract IPP investors. In particular, we note that an expectation of currency weakness means investors will likely wait until a more stable economic outlook prevails.

Private Investment Lacking

Energy & Utilities Infrastructure Value (NGNbn) And Real Growth (% Chg y-o-y)



f = forecast. Source: Fitch Solutions

Renewables - One To Watch

Areas of the ERGP for which we hold a more positive long-term outlook are the smaller-scale projects - in particular, those focusing on renewables. Developing projects outside of the traditional power sector could be a key avenue of growth over the coming years. This is particularly true given our expectation for slow progress in improving the financial outlook of distribution companies, securing gas supplies and increasing tariffs; we also anticipate similarly slow implementations of larger-scale thermal IPPs.

Despite some early signs that the Buhari administration would push solar expansion in order to reduce the deleterious impact of gas shortages on electricity supply, the country is starting from a very low base in terms of renewables expansion. We expect that efforts to establish a renewables policy and implement a robust regulatory and institutional framework will take time. Investor interest is also likely to be curtailed due to the difficult operating environment across all areas of the Nigerian power sector and the country's

ongoing economic malaise.

A number of private companies signed solar power-purchase agreements (PPAs) with the state-owned power body **Nigerian Bulk Electricity Trading** in July 2016, a sign that interest in the Nigerian solar sector is growing. The signing of PPAs by around 10 companies pertains to projects set to have a combined capacity of just under 1GW. Such moves align with the All Progressives Congress party's election manifesto, which stated that Nigeria needs to rely more heavily on renewable energy as it seeks to improve electrification rates. We note that the ERGP aims to reach financial close on these projects.

This improving picture is, however, insufficient to offset a history of lengthy delays of project execution. Nigeria has long had a number of planned and proposed solar projects in the pipeline but many have suffered delays amid limited domestic expertise, as well as lingering uncertainty over the regulation, financing and tariffs to be paid for new solar projects. This in spite of government efforts to provide clarity. The underdeveloped grid system is another barrier to the successful commissioning of utility-scale renewable projects; connections are set to remain a major hindrance to improved electricity supply in Nigeria, even if projects are completed.

We highlight that issues relating to financing and solar tariffs are particular risks. With regard to financing, liquidity in Nigeria's banking sector has been hit hard due to the ongoing economic difficulties, with the Nigerian banking sector highly exposed to the fall in oil prices and non-performing loans. This means that domestic investors will find it difficult to source financing for solar projects. Nigeria has also suffered from a foreign exchange crisis as weak oil prices have led to a sharp decline in foreign earnings, placing pressure on the naira and making it difficult for companies in the power sector to get access to dollars in order to pay for imported equipment.

Gas Power Holds Potential

US power and construction companies are well placed to expand their role in the gas-fired electricity generation sector in Sub-Saharan Africa (SSA). According to our Key Projects Database, 12 major gas-fired power plants in SSA have been completed in the last five years with the assistance of US-based financing, construction, or equipment providers, including development financiers such as the **Overseas Private Investment Corporation**, construction firms such as **Parsons Brinckerhoff** and power companies including **General Electric**. The latter in particular has been involved in four gas-fired power projects in Cote d'Ivoire, Tanzania and Mozambique and has permanent offices in five SSA countries, providing it with a strong platform to increase its role in the region's power markets. This is already playing out, with General Electric involved in nine gas-fired power projects currently under construction or in the planning stages across the region, including five projects in Nigeria which will add 4,320MW to the grid if completed as planned, representing nearly 40% of Nigeria's current estimated power generation capacity.

Transmission Key

One of the biggest challenges to securing a reliable power supply will be ensuring that TCN is transformed into an efficient entity. We emphasise that the success of Nigeria's ongoing power sector reform will hinge on the government's ability to transform TCN into a reliable grid company - and incorporate it successfully into the power sector supply chain. Ultimately, we expect TCN to be opened up to private players due to the substantial amount of investment required; however, we highlight that TCN's attractiveness will depend on astute management in a difficult operating environment.

In May 2015, Nigeria's Presidential Task Force on Power stated that TCN will require USD8bn of investment over the next five years. With public finances to remain constrained due to the fall in global oil prices (the petroleum sector accounts for 70% of Nigeria's fiscal revenue), the government will be limited with regard to the amount it can invest in the grid - necessitating private investment if the power situation is to improve. With that said, transmission infrastructure has been identified as a key area for government investment over the 2017-2020 period in order to improve the attractiveness of the overall power sector. Ultimately, we believe that the breakup and privatisation of TCN remain likely outcomes, as greater involvement of the private sector will enable TCN to gain access to much-needed private capital.

NIGERIA - MAJOR ENERGY & UTILITIES INFRASTRUCTURE PROJECTS							
Project Name	**Sector**	**Value (USDmn)**	**Size**	**Unit**	**Companies**	**Timeframe End**	**Status**
Itobe Coal Power Plant, Kogi	Power Plants & transmission grids	6,000	1,200	MW	Eta-Zuma Group, Zuma Energia	N/A	At planning stage
Mambilla Hydropower Project, Taraba	Power Plants & transmission grids	5,790	3,050	MW	Exim Bank of China, Government of Nigeria, Sinohydro Corporation, Gezhouba Group Electric Power	N/A	At planning stage
Trans-Nigeria Gas Pipeline - Phase I, Ajaokuta (Kogi) - Kaduna - Kano	Oil & Gas Pipelines	2,800	614	km	Niger Delta Power Holding Company Limited (NDPHC), China Petroleum Pipeline Bureau, Brentex Petroleum Services Limited, Oando Energy Resources, OiLSERV	N/A	At planning stage
Anambra State Power Plant, Anambra	Power Plants & transmission grids	2,500	1,500	MW	Global Edison Corporation, Government of United States, Government of Nigeria	N/A	At planning stage
FirstGate Solar Park, Kogi	Power Plants & transmission grids	2,000	1,000	MW	Kogi State Government, FirstGate Group	N/A	At planning stage

N/A = not available. Source: Fitch Solutions Key Projects Database

Residential/Non-Residential Building

Key View: *Growth in Nigeria's residential & non-residential buildings sector will be subdued in the first half of our forecast period, as the new housing fund law weighs on construction. We expect growth to pick up towards the end of the forecast period as demographic growth and urbanisation continue to drive substantial demand for new housing.*

Latest Developments

- We have revised down our growth forecasts for Nigeria's residential & non-residential buildings sector, with growth to average 5.7% annually over our long-term forecast period (to 2028). This is in line with our more bearish outlook on the wider construction sector, and is also driven by sector-specific factors, namely the new housing law which came into effect in March 2019 and included several provisions which will damage the housing market and weigh on residential construction.
- We highlight that Nigeria continues to have strong fundamental factors that hold the potential for sizable growth over the long term. With a rapidly growing population, ongoing urbanisation, growing middle class and rising disposable incomes, we expect that there will be growth in demand for quality real estate and commercial developments.
- In February 2019, ground was broken for the construction of a mixed-use city development, called Alárò City, in Lagos, Nigeria. Spanning more than 20sq km, the city will be located in Lekki Free Zone. Led by developer **Rendeavour** and the Lagos State Government, the project is designed by **Skidmore, Owings & Merrill**. As per the master plan, the southern side of the city will house industrial, warehouse and logistics facilities, while the northern side will include offices, homes, schools, hotels, healthcare and entertainment facilities. The venture will also have 1.5sq km of parks and open areas.
- **EchoStone Nigeria** and the Lagos state government have broken ground for 250 two-bedroom houses in Idale, Badagry. The work is part of a plan to deliver 2,000 housing units in three Local Government Areas (LGA) in the state on a fast track basis. To start with, 250 two-bedroom flats will be built in Idale in Badagry LGA. The remaining homes will be built in Ayobo in Alimosho LGA and Imota in Ikorodu LGA. EchoStone will use new technology that will allow the construction of several houses daily. The 2,000 homes will be built as part of Governor Akinwunmi Ambode's aim to construct 20,000 houses across the state in 48 months, indicating an improving outlook for the residential buildings sector going forward.

RESIDENTIAL AND NON-RESIDENTIAL BUILDING INDUSTRY DATA (NIGERIA 2018-2028)

Geography	Indicator	2018e	2019f	2020f	2021f	2022f	2023f	2024f	2025f	2026f	2027f	2028f
Nigeria	Residential and non-residential building industry value real growth (%)	-0.5	0.9	-0.6	3.2	6.2	7.2	6.1	5.7	8.5	9.8	10.5

e/f = Fitch Solutions estimate/forecast. Source: Fitch Solutions

Structural Trends

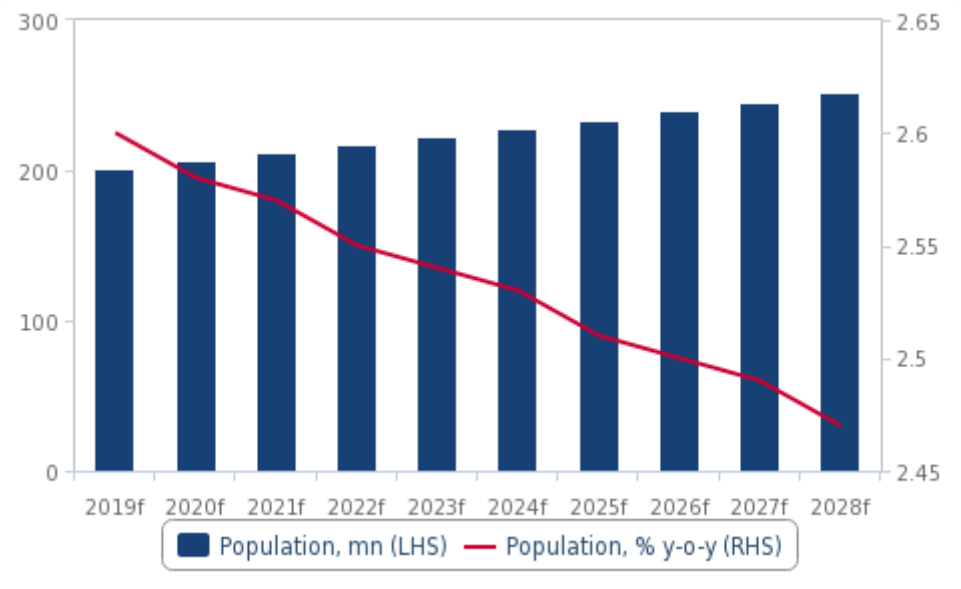
2019: New Housing Law To Weigh On Residential Construction

In the short term, we hold a bearish view on the residential and non-residential construction sector in Nigeria, with growth of just 0.9% in 2019. This is primarily due to the new housing fund law passed in March 2019. The law updates the 1992 National Housing Fund Law with several new provisions, intended to boost the financial muscle of the National Housing Fund (NHF) through increased taxation. The NHF is a government scheme launched in 1992, based on eligible employees in the public and private sector paying 2.5% contributions into the NHF from their salary, thereby allowing them to access mortgage financing from the fund.

In our view, the new law will fail in its intention to increase access to affordable mortgages, generate demand for housing and stimulate residential construction, and will instead have considerable negative implications for the residential construction sector. The new law aims to address the shortcomings of the existing programme, with the NHF having thus far largely failed in its aim to boost residential construction, with the country still suffering an acute housing shortage alongside rapid population growth. Only 3% of Nigerian adults had an outstanding housing loan in 2017, according to the World Bank's Global Financial Inclusion Database. Meanwhile, Nigeria's housing shortfall is estimated at around 17mn units, and the population of an estimated 200mn people is set to grow by 2.5% annually on average over the next decade, with urban areas set to see over 45mn new residents over the same time period.

Population Growth Creates Huge Latent Demand For Housing

Nigeria - Population, mn (LHS) & Growth, % chg y-o-y (RHS)



f = Fitch Solutions forecast. Source: UN, Fitch Solutions

If signed into law, the new act will bring into force a number of new provisions which, though intended to address this situation by increasing financing availability from the NHF, will only serve to exacerbate existing problems in the residential construction sector our view. In particular, we see the introduction of a new 2.5% tax on locally produced or imported cement to be paid into the fund as a counter-productive measure which will increase costs for housing developers and slow construction in the residential sector and across the board. These higher costs could also be passed onto the buyer, thus undermining the aim of the NHF to improve access to affordable housing. In addition, the new law includes a requirement for banks, insurance companies and pension funds administrators to invest a minimum of 10% of their profits into the NHF, or face a penalty of NGN100mn (USD277,000). Again, this could prove a counter-productive measure, potentially weighing on the ability of banks to invest in housing developments or

provide mortgage financing for home buyers.

The new law also fails to tackle major structural issues in Nigeria's housing market that will need to be addressed in order to catalyse growth in residential construction. Primarily, the weak legal system and absence of provable land rights is holding back the sector. The majority of Nigerians have no proof of land ownership, leaving them unable to offer land as collateral for housing loans and making banks unable to lend without charging unaffordable interest rates. The unclear land ownership structure also makes large-scale land purchases by the government or housing developers fraught with potential for legal disputes, deterring investment in residential construction. In addition, there is little incentive for housing developers to focus on construction for the lower end of the market, with greater profit to be made from luxury apartments in Lagos than affordable housing in Kano, for example. Unless the government is able to channel its own funds or encourage private investment into affordable housing, growth in the residential sector will remain constrained, keeping the gap between housing supply and demand in the country extremely wide.

2019-2028: Structural Issues Remain, But Fundamentals Strong

The potential within Nigeria's residential & non-residential building market warrants a more bullish long-term growth outlook, even as the market retains some key risks in a more positive economic environment. We expect growth in the residential and non-residential sector to accelerate up to 10.5% in 2028. Unmet demand in the commercial, industrial and residential sectors underpins this view: Nigeria's housing shortfall alone is around 17mn units. While there are numerous factors which will continue to limit growth, we reiterate that the market is too large to ignore.

We have long noted that the major inhibitor, although by no means the only one, to residential construction in Nigeria is a lack of financing options, which limits demand for house ownership. According to the Mortgage Bankers Association of Nigeria, the country's mortgage finance deficit stands at NGN20-30trn. The World Bank's Global Financial Inclusion Database indicates only 4% of Nigerians over the age of 15 had received a loan from a financial institution in 2017, and almost none have an outstanding loan to purchase a home (0.6%). Borrowing for home construction is more common, although still at low levels, at 1.7%. Home ownership levels are exceedingly low, with around 85% of the urban population living in rented accommodation. Structural construction issues will continue to limit the residential building sector in Nigeria:

- The majority of people, cooperatives and agencies established to support housing provision source mortgages from commercial banks which are unable to provide appropriate tenures on mortgages, making them unfeasibly expensive for the majority of Nigerians. Furthermore, given the shorter tenures, rates are higher.
- Land ownership remains a major issue, with the majority of Nigerians not having proof of ownership over their land. As such, banks are limited in the collateral they can offset their loans with and charge higher rates accordingly. Without greater development of either the land ownership structure or government's ability to designate land for residential development (for those without the ability to use land as collateral), the lower end of the residential market, in particular, will struggle to meet demand.
- With many people in Nigeria having little in the way of credit history, and in the absence of information on a client's likelihood of default, banks mitigate the effect of a potential default by charging higher interest rates across the board.

Industrial And Commercial Potential Significant

Despite the recent economic difficulties, we believe that Nigeria's strong fundamentals will facilitate projects in the commercial and industrial real estate sectors. That said, industries which rely on imported goods will struggle over 2019 given the lack of dollars in the economy. Similarly, over the short term, we expect high-end developments such as Eko Atlantic City and major commercial projects such as shopping centres to struggle to gain traction; however, as the economy recovers, demand for quality real estate and the development will support our real growth forecasts.

Our Consumer & Retail team views Nigeria a promising consumer story in SSA:

- With a population of over 180mn, Nigeria offers enormous opportunities for retailers, despite structural weaknesses in its economy.
- Nigeria has seven cities with a population of over 1mn people, presenting several possible markets for investors to enter. Lagos, with a population of over 9mn, is the largest market.
- While the majority of the population continues to live in poverty, the size of Nigeria's middle class outnumbers that of any other state in SSA, numbering 16.3mn people in 2011 according to the African Development Bank. Given that the population growth rate is set to average 2.7% over the next 10 years, this market is set to increase and offer great possibilities for retail investors.
- Only 5% of the food retail market is estimated to be formalised, which means that 95% of food sales are still accounted for by independent stores and kiosks in the country despite its huge population. In South Africa (SSA's most industrialised economy), about 70% of the market is formalised. The disparity in sales between the two markets will narrow considerably over our forecast period, representing a significant opportunity for real estate development and construction of associated warehousing.

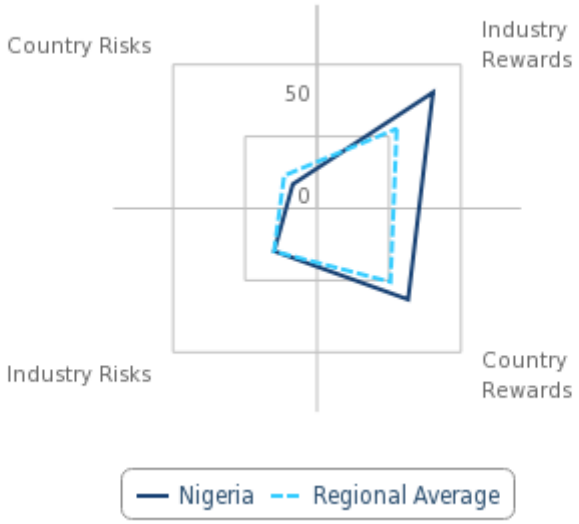
Industry Risk/Reward Index

Nigeria Infrastructure Risk/Reward Index

Key View: *Nigeria's vast scale and robust structural demand for infrastructure are the key pillars of the market's strong performance regionally within our Infrastructure RRI, with the country ranking third in the SSA region. Realising these rewards will remain challenging, with Nigeria's Risks scores underperforming the regional averages on most indicators, representing the market's economic, security and industry risks.*

Risk/Reward Snapshot

Nigeria And SSA Region Infrastructure Risk/Reward Index



Note: Scores out of 100; higher score = more attractive market. Source: Fitch Solutions Risk/Reward Index

Regional And Global Ranks

- Regional Rank (out of 18): 3rd
- Global Rank (out of 105): 43rd

Key Features And Latest Updates

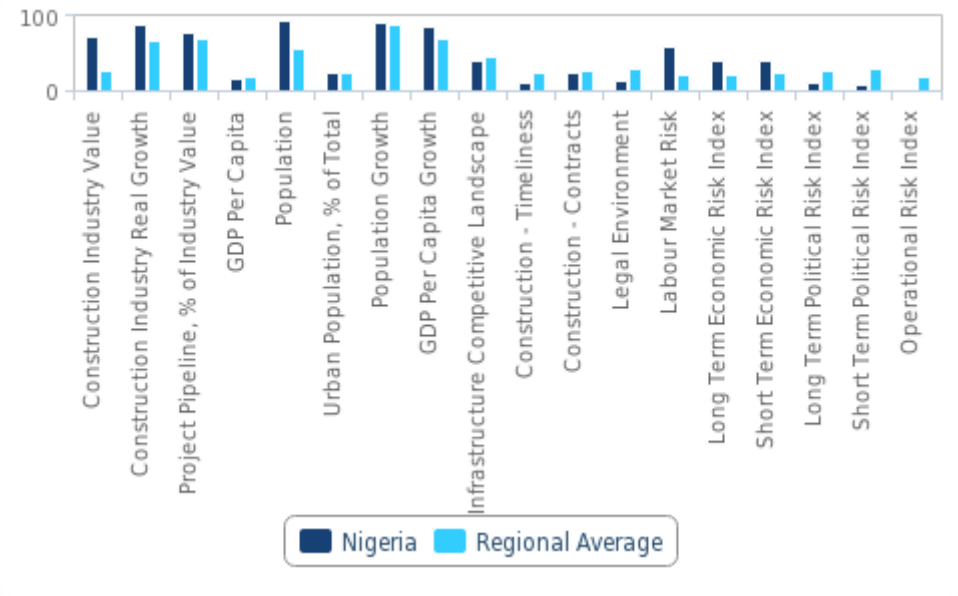
- Nigeria's construction industry, valued at USD23.7bn according to our estimates for 2019, is the largest in Sub-Saharan Africa (SSA) and has an active project pipeline across of infrastructure and building segments. Over the short term, industry growth will continue to disappoint as public and private investment remains low in response to the macroeconomic headwinds facing the country. Beyond this time frame, we believe the underlying demand for infrastructure in Nigeria and the significant investment plans of the government will see growth return to above the regional average.
- Nigeria's demographic profile is a major driver of infrastructure demand, with the market scoring above the regional average in our population growth forecasts and urban population as a percentage of the total. Furthermore, while the spending power of the Nigerian consumer has been dampened by macroeconomic volatility - currency devaluation and the associated inflation - the market also scores above the regional average for growth in GDP per capita.
- Nigeria's construction sector is beset by delays and contract disputes, and the transparency of the tendering process is a key concern. Efforts are being made by the government to increase transparency, reduce bureaucratic hurdles and reform

infrastructure sectors to increase the market's attractiveness to private investors, but this will take multiple years to increase Nigeria's Industry Risks profile, which is below the average for SSA.

- From a political risk perspective, companies operating in Nigeria face significant security threats in the northern regions, as well as in the Niger Delta. From a macroeconomic perspective, we do not expect the Nigerian economy to become significantly less vulnerable to oil price shocks as economic diversification efforts will be slow to take hold.

RRI Matrix Breakdown

Nigeria And SSA Region Infrastructure Risk/Reward Index By Component



Note: Scores out of 100; higher score = more attractive market. Source: Fitch Solutions Risk/Reward Index

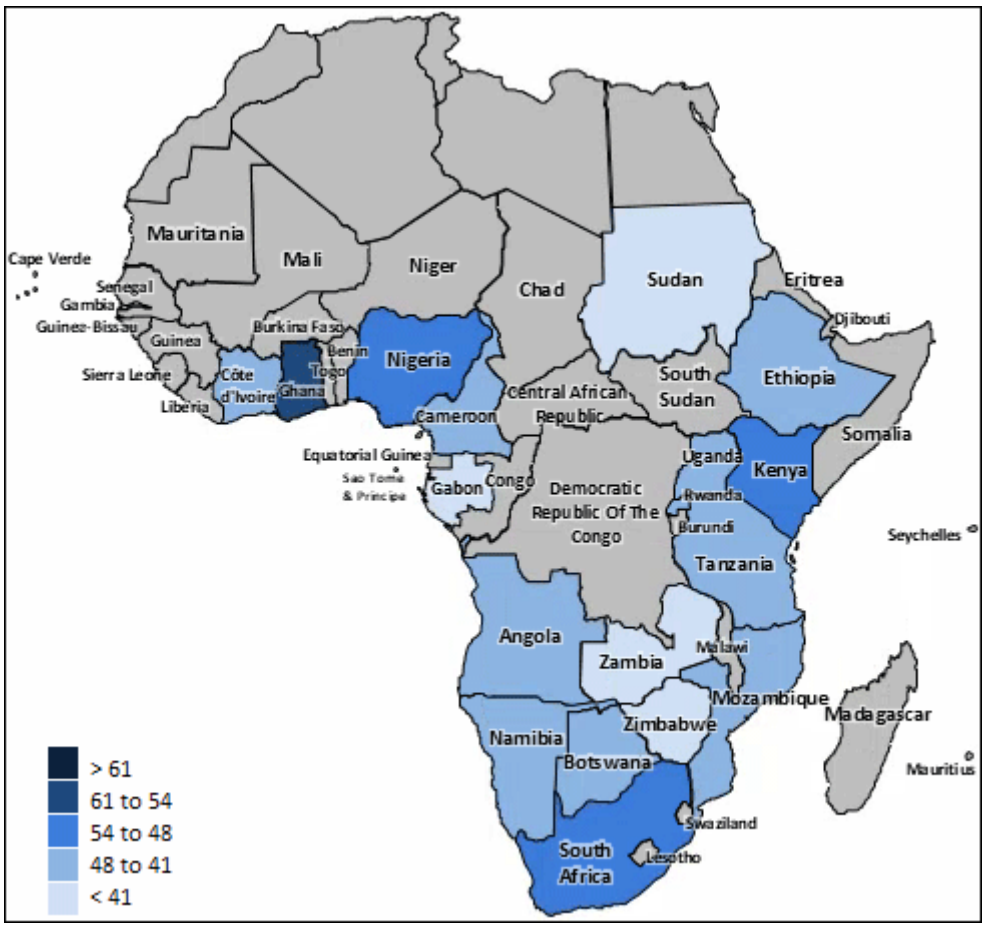
SSA Infrastructure RRI: Ghana Moves Into First Place

Key View

- Ghana has moved into top spot in the SSA region in this quarter's Infrastructure RRI, moving up three places on the strength of the construction growth forecast and a robust project pipeline.
- In contrast, our revised growth outlook for Gabon has seen the country fall to the bottom of the pack regionally, as we now expect the construction sector to struggle to expand over the medium term.
- Across the SSA region as a whole, we highlight that elevated security risks, including specific threats to the construction industry, will dampen risk scores, particularly in more frontier markets such as Mozambique, Sudan and Zimbabwe.

Ghana Becomes Regional Outperformer

SSA Infrastructure - Risk/Reward Index Heat Map



Note: Scores out of 100; higher scores = lower risk. Source: Fitch Solutions Infrastructure Risk/Reward Index

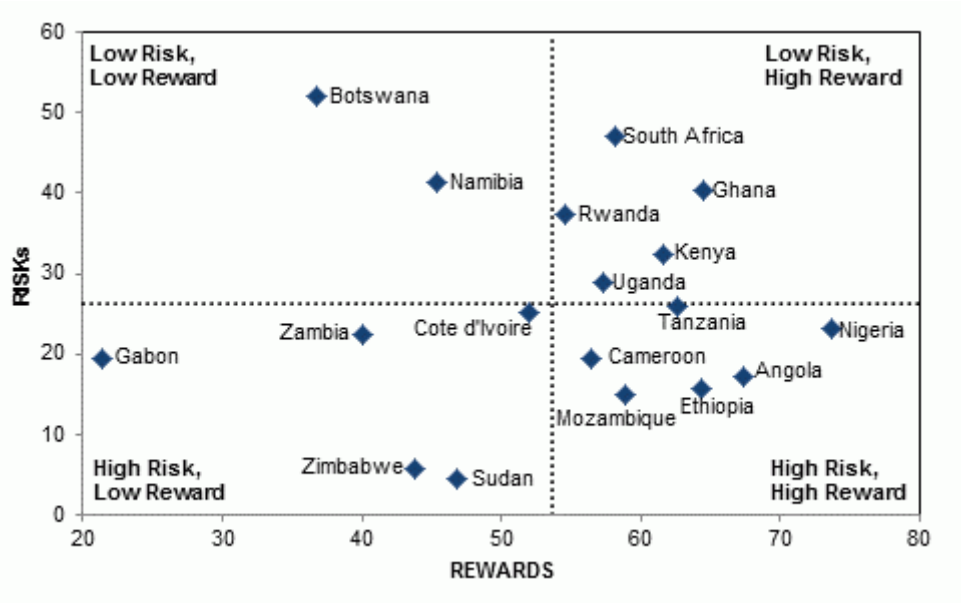
Main Regional Features And Latest Updates

- The Sub-Saharan Africa (SSA) region continues to rank fifth out of six regions globally in our latest Infrastructure Risk/Reward Index (RRI) with an average score of 42.7 out of 100, a marginal increase on the previous quarter. We expect this score to remain relatively stable over coming quarters, as improvements to the growth outlook in SSA countries are capped by subdued oil prices and high debt burdens.
- **Ghana** has moved up three places to first in our SSA regional table, with an overall score of 54.9 out of 100, up from 49.7 the previous quarter, lifting it above **Nigeria** and **South Africa**. This improvement is primarily driven by a rise in the country's Industry Rewards score, which has been buoyed by a strong growth outlook and plentiful project pipeline.

- **Tanzania** continues to rise up the regional rankings and is now placed fifth, with a score of 47.9 out of 100, as its construction growth outlook remains strong with several major projects, including the standard gauge railway, seeing positive progress.
- In contrast, **Gabon** falls three places to rank last in the SSA region, with a score of 20.6, a significant drop from 30.5 the previous quarter. This is largely based on our revised growth outlook for the country, with new data showing the construction sector has failed to recover from a recession precipitated by the oil price crash in 2014.

Few Markets Offer Low Risk Profile

SSA – Infrastructure RRI

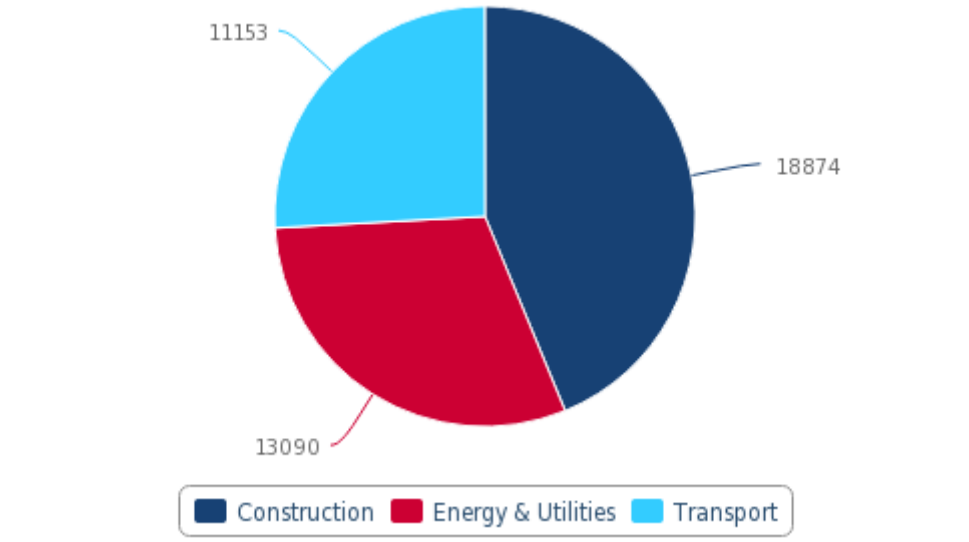


Note: Scores out of 100; higher scores = lower risk. Source: Fitch Solutions Infrastructure Risk/Reward Index

Ghana's strong construction growth outlook and considerable project opportunities have elevated its score this quarter. We expect construction industry growth in Ghana to stay on a strong trajectory over our medium-term forecast period (to 2023), on the back of steady economic expansion and a supportive environment for investment. We are forecasting average growth of 7.3% y-o-y over the next five years, just above the regional average but representing a strong performance on a global comparison. Relative political stability and a robust demand profile for infrastructure will ensure foreign participation in the market is sustained, helping to progress the country's large project pipeline. In particular, we highlight that major developments underway or in the planning stages, including the USD6bn Nsawam - Kumasi - Paga Rail Line Project, the USD1.8bn Eastern Rail Corridor Rehabilitation project and the USD1.5bn Tema Port Expansion, will offer investment opportunities and drive growth in the market. In addition, the growing involvement of Chinese firms, combined with increasing use of public-private partnerships to encourage private sector investment, will be growth-supportive.

Considerable Project Pipeline Across Sectors

Ghana - Project Value By Sector, (USDmn)

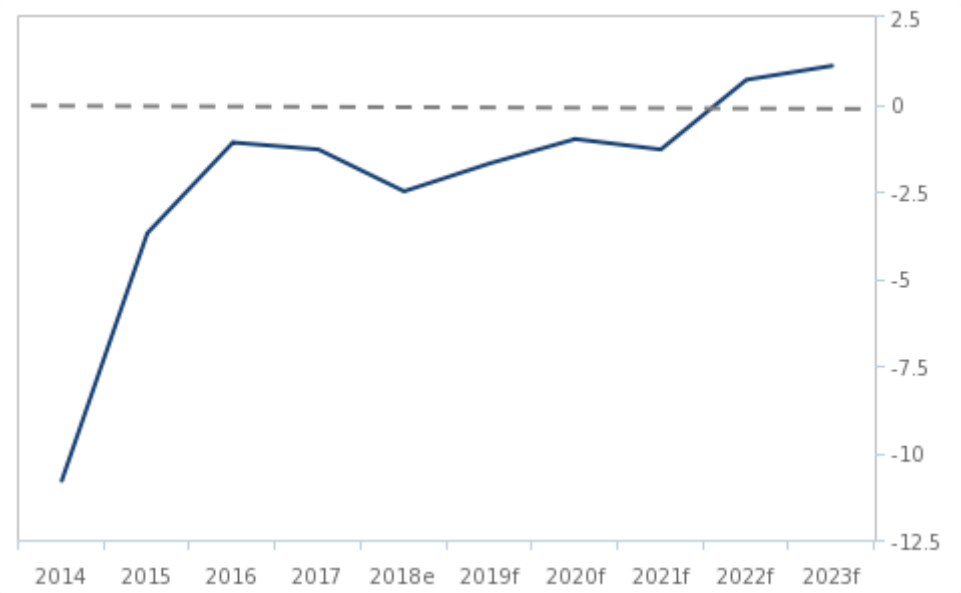


Source: Fitch Solutions Key Projects Database

Gabon's revised growth outlook has seen it fall to last place in the region rankings. We have revised down our growth expectations for the construction industry in Gabon, with an average contraction of 0.4% annually to 2023, leading to a significant decline in the country's Industry Rewards score. This downward revision came on the back of newly revised historical growth data for the sector, which showed that it has failed to recover from the recession precipitated by the collapse in oil prices in 2014. Infrastructure funding in Gabon is highly reliant on government spending, which is almost entirely derived from oil revenues, and consequently the oil price collapse has weighed heavy on construction activity. Despite recent gains in the oil price, we see limited upside for the construction sector in Gabon, as political instability related to President Ali Bongo's ill health will impede government infrastructure spending and deter private sector investment. In addition, the project pipeline in the country is extremely small and there is little activity planned which would generate significant growth. We are therefore expecting Gabon's construction industry to remain in contraction until 2022, keeping the country's RRI score low on a regional and global comparison.

Political Instability & Lack Of Project Activity Weigh On Growth

Gabon - Construction Industry Value, Real Growth (% chg y-o-y)

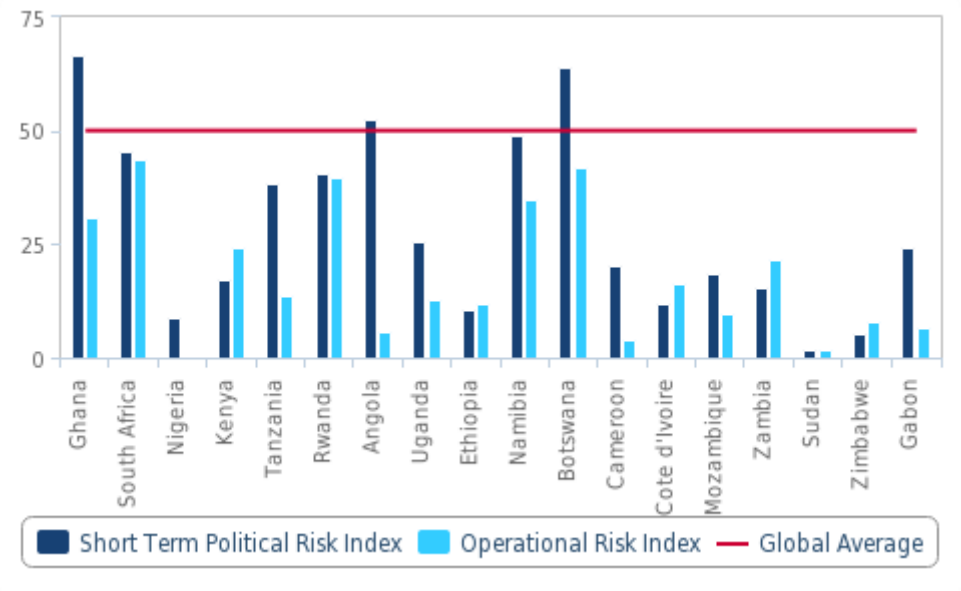


e/f = Fitch Solutions estimate/forecast. Source: UN, Fitch Solutions

We expect security risks throughout the region to continue to weigh on RRI scores of SSA countries. Terrorist attacks, separatist movements and large-scale protests have historically been a major cause of disruption to the construction sector and a deterrent for foreign investors. This is a trend which we expect to continue in some key and frontier markets despite a general improvement in the security environment across the continent over the last decade. In recent months, we have seen a number of security threats affecting the construction sector in a broad swathe of SSA markets. These include specific threats targeting construction projects, as well as more general violence which will weigh on activity in the construction sector and deter foreign investment. In particular, we highlight more frontier markets such as Sudan, Zimbabwe, Mozambique and Somalia as at highest risk from security threats to the construction industry. However, even more stable and attractive markets in the region such as Kenya and South Africa are exposed to security threats which can disrupt construction projects (*see 'Security Threats To Continue Disrupting SSA Construction Sector', February 8 2019*). This feeds through into lower scores for the Operational Risk Index and Short-Term Political Risk Index of the Infrastructure RRI, with 15 out of 18 countries in the region scoring below the global average on these metrics.

Security Risks Undermine RRI Performance

SSA & Global Average - Operational Risk & STPRI Scores



Note: Scores out of 100; higher scores = lower risk. Source: Fitch Solutions Infrastructure Risk/Reward Index

SUB-SAHARAN AFRICA INFRASTRUCTURE RISK/REWARD INDEX

Country	Industry Rewards	Country Rewards	REWARDS	Industry Risks	Country Risks	RISKS	RRI	Regional Rank	Global Rank
Ghana	68.9	57.9	64.5	36.5	44.3	40.4	54.9	1	38
South Africa	59.2	56.5	58.1	52.2	41.9	47.1	53.7	2	42
Nigeria	80.6	63.3	73.7	29.7	16.8	23.3	53.5	3	43
Kenya	67.6	52.6	61.6	39.1	25.9	32.5	50.0	4	58
Tanzania	68.0	54.6	62.6	26.8	24.8	25.8	47.9	5	61
Rwanda	62.1	43.3	54.6	46.0	28.7	37.4	47.7	6	62
Angola	69.3	64.5	67.3	14.2	20.1	17.2	47.3	7	64
Uganda	62.5	49.5	57.3	37.1	20.8	28.9	45.9	8	70
Ethiopia	69.9	56.1	64.4	20.3	11.0	15.6	44.9	9	74
Namibia	47.6	42.1	45.4	51.7	30.8	41.2	43.7	10	78
Botswana	27.8	50.3	36.8	53.2	50.8	52.0	42.9	11	81
Cameroon	61.2	49.3	56.4	22.5	16.2	19.4	41.6	12	83
Cote d'Ivoire	53.7	49.3	52.0	27.0	23.5	25.3	41.3	13	84
Mozambique	65.0	49.5	58.8	19.8	9.9	14.8	41.2	14	85
Zambia	34.3	48.5	40.0	29.7	15.4	22.5	33.0	15	93
Sudan	41.7	54.6	46.9	6.8	2.1	4.4	29.9	16	95
Zimbabwe	52.4	30.7	43.7	6.1	5.3	5.7	28.5	17	97
Gabon	4.5	46.8	21.4	17.3	21.4	19.3	20.6	18	103
Global Average	50.0	50.0	50.0	50.0	50.0	50.0	50.0	~	~
Regional Average	55.4	51.1	53.6	29.8	22.8	26.3	42.7	~	~

Note: Scores out of 100; higher scores = lower risk. Source: Fitch Solutions Infrastructure Risk/Reward Index

SUB-SAHARAN AFRICA INFRASTRUCTURE INDUSTRY REWARDS				
Country	Construction Industry Value	Construction Industry Real Growth	Project Pipeline, % of Industry Value	Industry Rewards
Ghana	40.8	84.5	81.6	68.9
South Africa	50.5	41.7	85.4	59.2
Nigeria	72.8	90.3	78.6	80.6
Kenya	35.0	77.7	90.3	67.6
Tanzania	44.7	86.4	72.8	68.0
Rwanda	4.9	89.3	92.2	62.1
Angola	55.3	78.6	73.8	69.3
Uganda	18.4	88.3	80.6	62.5
Ethiopia	64.1	98.1	47.6	69.9
Namibia	3.9	43.7	95.1	47.6
Botswana	12.6	69.9	1.0	27.8
Cameroon	25.2	87.4	70.9	61.2
Cote d'Ivoire	24.3	74.8	62.1	53.7
Mozambique	1.9	93.2	100.0	65.0
Zambia	19.4	20.4	63.1	34.3
Sudan	10.7	47.6	67.0	41.7
Zimbabwe	6.8	59.2	91.3	52.4
Gabon	8.7	1.0	3.9	4.5
Global Average	50.0	50.0	50.0	50.0
Regional Average	27.8	68.4	69.8	55.4

Note: Scores out of 100; higher scores = lower risk. Source: Fitch Solutions Infrastructure Risk/Reward Index

SUB-SAHARAN AFRICA INFRASTRUCTURE COUNTRY REWARDS						
Country	GDP Per Capita	Population	Urban Population, % of Total	Population Growth	GDP Per Capita Growth	Country Rewards
Ghana	20.4	57.3	34.0	83.5	94.2	57.9
South Africa	41.7	78.6	44.7	54.4	63.1	56.5
Nigeria	17.5	94.2	25.2	93.2	86.4	63.3
Kenya	13.6	75.7	4.9	90.3	78.6	52.6
Tanzania	5.8	79.6	9.7	98.1	79.6	54.6
Rwanda	2.9	41.7	0.0	86.4	85.4	43.3
Angola	25.2	62.1	43.7	100.0	91.3	64.5
Uganda	1.0	72.8	3.9	99.0	70.9	49.5
Ethiopia	3.9	89.3	1.9	87.4	98.1	56.1
Namibia	36.9	6.8	26.2	82.5	58.3	42.1
Botswana	47.6	5.8	53.4	75.7	68.9	50.3
Cameroon	12.6	54.4	35.0	92.2	52.4	49.3
Cote d'Ivoire	14.6	55.3	23.3	91.3	62.1	49.3
Mozambique	0.0	58.3	12.6	95.1	81.6	49.5
Zambia	8.7	49.5	17.5	97.1	69.9	48.5
Sudan	4.9	69.9	8.7	89.3	100.0	54.6
Zimbabwe	16.5	45.6	6.8	84.5	0.0	30.7
Gabon	42.7	4.9	89.3	81.6	15.5	46.8
Global Average	50.0	50.0	50.0	50.0	50.0	50.0
Regional Average	17.6	55.7	24.5	87.9	69.8	51.1

Note: Scores out of 100; higher scores = lower risk. Source: Fitch Solutions Infrastructure Risk/Reward Index

SUB-SAHARAN AFRICA INFRASTRUCTURE INDUSTRY RISKS						
Country	Infrastructure Competitive Landscape	Construction - Timeliness	Construction - Contracts	Legal Environment	Labour Market Risk	Industry Risks
Ghana	59.2	20.4	20.4	44.7	37.9	36.5
South Africa	73.8	38.8	64.1	50.5	34.0	52.2
Nigeria	40.8	9.7	23.3	14.6	60.2	29.7
Kenya	59.2	26.2	55.3	35.9	18.9	39.1
Tanzania	23.3	8.7	44.7	42.7	14.6	26.8
Rwanda	59.2	41.7	25.2	62.1	41.7	46.0
Angola	23.3	32.0	5.8	1.0	8.7	14.2
Uganda	59.2	11.7	59.2	28.2	27.2	37.1
Ethiopia	12.1	4.9	28.2	39.8	16.5	20.3
Namibia	73.8	23.3	65.0	66.0	30.1	51.7
Botswana	73.8	53.4	35.9	54.4	48.5	53.2
Cameroon	59.2	13.6	7.8	16.5	15.5	22.5
Cote d'Ivoire	59.2	21.4	21.4	27.2	5.8	27.0
Mozambique	23.3	55.3	10.7	7.8	1.9	19.8
Zambia	40.8	44.7	24.3	29.1	9.7	29.7
Sudan	4.9	17.5	3.9	6.8	1.0	6.8
Zimbabwe	12.1	1.9	2.9	8.7	4.9	6.1
Gabon	59.2	10.7	1.9	11.7	2.9	17.3
Global Average	50.0	50.0	50.0	50.0	50.0	50.0
Regional Average	45.4	24.2	27.8	30.4	21.1	29.8

Note: Scores out of 100; higher scores = lower risk. Source: Fitch Solutions Infrastructure Risk/Reward Index

SUB-SAHARAN AFRICA INFRASTRUCTURE COUNTRY RISKS

Country	Long-Term Economic Risk Index	Short-Term Economic Risk Index	Long-Term Political Risk Index	Short-Term Political Risk Index	Operational Risk Index	Country Risks
Ghana	31.1	36.9	68.9	66.5	31.1	44.3
South Africa	45.6	34.0	38.8	45.6	43.7	41.9
Nigeria	39.8	41.7	10.7	8.7	0.0	16.8
Kenya	29.1	28.6	32.0	17.0	24.3	25.9
Tanzania	26.2	19.4	37.9	38.3	13.6	24.8
Rwanda	18.4	17.0	16.5	40.8	39.8	28.7
Angola	6.8	24.8	25.2	52.4	5.8	20.1
Uganda	28.2	26.2	19.4	25.7	12.6	20.8
Ethiopia	14.6	13.6	3.9	10.7	11.7	11.0
Namibia	8.7	9.7	47.6	49.0	35.0	30.8
Botswana	37.9	56.3	63.1	64.1	41.7	50.8
Cameroon	30.1	33.0	5.8	20.4	3.9	16.2
Cote d'Ivoire	41.7	45.1	9.7	11.7	16.5	23.5
Mozambique	2.9	3.9	14.6	18.4	9.7	9.9
Zambia	9.7	8.7	15.5	15.5	21.4	15.4
Sudan	3.9	1.0	1.9	1.9	1.9	2.1
Zimbabwe	1.0	1.9	7.8	5.3	7.8	5.3
Gabon	24.3	22.3	43.7	24.3	6.8	21.4
Global Average	50.0	50.0	50.0	50.0	50.0	50.0
Regional Average	22.2	23.6	25.7	28.7	18.2	22.8

Note: Scores out of 100; higher scores = lower risk. Source: Fitch Solutions Infrastructure Risk/Reward Index

Competitive Landscape

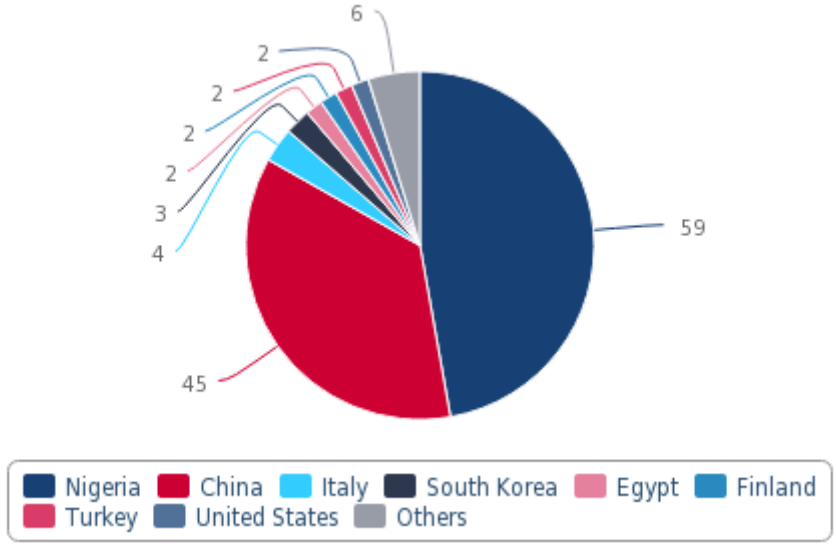
Key View

- Nigeria's construction competitive landscape is dominated by domestic and Chinese contractors, with little diversity or competition for major projects from multinational firms.
- This reflects Nigeria's unattractive and high-risk operating environment for international construction companies and the difficulty private firms face attracting financing for projects in the country.
- Chinese financing remains essential for delivering large-scale projects in Nigeria, with development financiers focusing on supporting lower-cost projects in the road sector in particular.

The construction competitive landscape in Nigeria is dominated by local and Chinese companies, with other international firms largely crowded out. According to analysis of our Key Projects Database (KPD), 83% of construction roles on major projects (over USD30mn in value) in Nigeria are taken by domestic or Chinese contractors, far outweighing the involvement of companies from other nationalities. Nigeria's domestic construction sector is comparatively well developed on a Sub-Saharan African (SSA) basis, with a number of well-established firms operating in the market. Nigerian companies account for the largest share of construction roles, with 47% of the total, and **Julius Berger** leads the way, followed by **Rockson Engineering** and **Reynolds Construction Company**. Within the domestic construction sector, the competitive landscape is relatively fragmented and competition for contracts is high, with 24 different companies listed as taking construction roles in the country according to our KPD. Nigerian companies are primarily active in the road sector, reflecting their limited capabilities for more technically complex projects and financial constraints.

Limited Foreign Participation Outside Of Chinese Firms

Nigeria - Number Of Construction Roles By Company Nationality



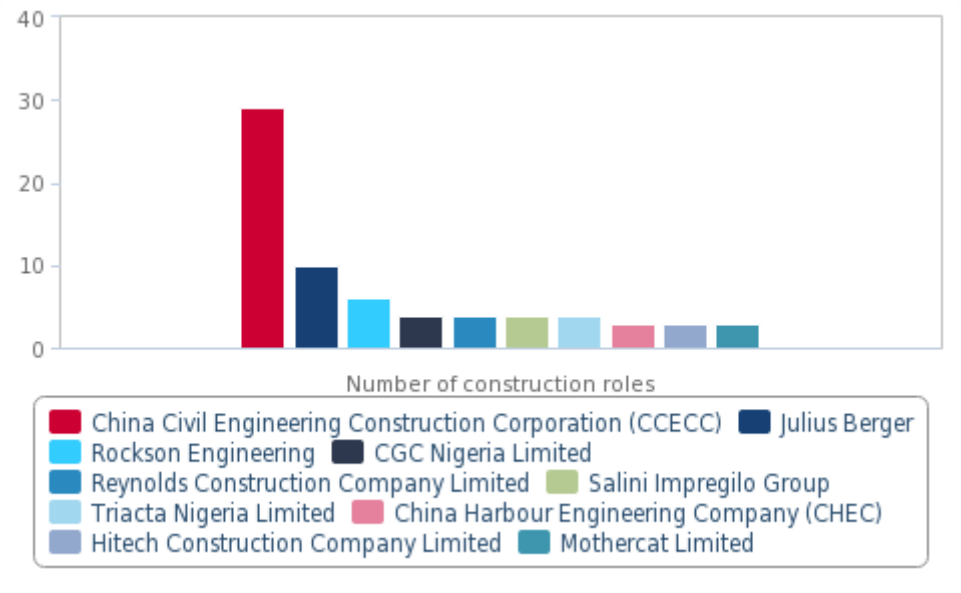
Source: Fitch Solutions Key Projects Database

In contrast, Chinese firms are more active in large-scale projects, providing the expertise and financial backing which is crucial for delivering technically difficult infrastructure developments. **China Civil Engineering Construction Corporation** (CCECC) is by far the top contractor on major projects in Nigeria, with 29 construction roles, well above second-ranked contractor, Julius Berger. In total, 10 different Chinese construction firms are represented in major projects in the country, more than from any other nationality, taking a total of 45 construction roles. These firms are mainly involved in more complex projects in the rail, power and airports sub-

sectors. In particular, Chinese contractors are heavily involved in Nigeria's plans to build out its railway infrastructure, taking a total of 19 construction roles in projects including the Lagos-Kano standard gauge railway, the Lagos Rail Mass Transit (LMRT) metro line, as well as light rail systems in Kano, Abuja and Ibadan. Aside from CCECC, **China Harbour Engineering Company** and **Sinohydro Corporation** are active in the port and power sectors, respectively.

CCECC Winning The Most Contracts

Nigeria - Top 10 Contractors By Number Of Construction Roles

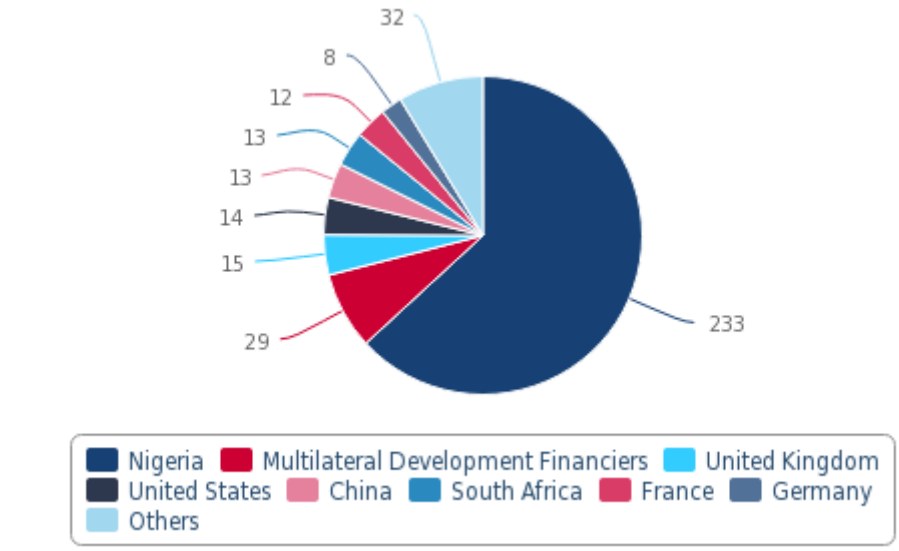


Note: Reds = Chinese companies, blues = Nigerian companies, green = Italian company. Source: Fitch Solutions Key Projects Database

The presence of non-Chinese multinational contractors is limited, but there is slightly more competition in the energy and utilities than the transport sector. There are a total of 12 nationalities, other than Nigeria and China, represented in construction roles in the country, but none has a particularly strong position. Italy's **Salini Impregilo** is the only company outside of China or Nigeria represented in the top 10 for construction roles, with contracts across the road and water sectors. Three South Korean firms, **POSCO Engineering & Construction**, **Daewoo Engineering & Construction Company** and **Hyundai Engineering and Construction Company**, are involved in the power sector, while Finland's **Wartsila** is also involved in two power projects. In total, companies from 10 different countries are involved in construction roles in the energy and utilities sector, compared to 6 in the transport sector. Foreign multinationals are also more active in the power sector as operators and equipment providers, with US firms such as **General Electric** taking prominent roles. We expect this to increase going forward with greater opportunities for US companies in the Nigerian power market following the launch of USAID's Power Africa Gas Roadmap in 2018 (*see 'US Companies To Expand Role In African Gas Power Infrastructure', August 14 2018*).

Domestic Financing Sources Still Dominant

Nigeria - Number Of Financier Roles By Nationality



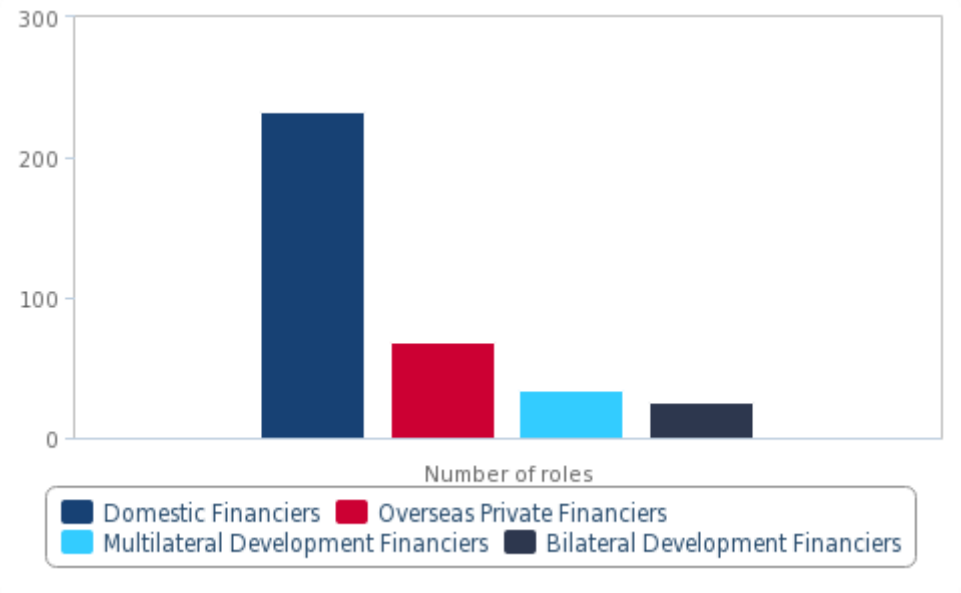
Source: Fitch Solutions Key Projects Database

The high risks present in Nigeria's market will continue to hinder the emergence of a more diverse competitive landscape in the construction sector. A number of factors converge to make it difficult for private construction firms to establish themselves in the market. Notably, the entrenched position of domestic firms which have a deep understanding of the construction sector and are able to navigate the inherent risks, is a major barrier to entry. At the same time, Chinese firms with strong financial backing, competitive pricing and a high risk appetite, are in pole position to win the more technically challenging projects that are available.

A wide range of operating risks also deter multinational construction firms from bidding for contracts in Nigeria, ranging from bureaucratic inertia to corruption, foreign currency shortages, logistics bottlenecks, repayment concerns and security threats *(see 'Nigeria's Construction Growth To Disappoint', May 14 2019)*. These issues account for Nigeria's low score in our Operational Risk Index, which, at 36.6 out of 100, places it well below the global average of 49.7. These risks also make it difficult to attract private sector funding, with foreign private financiers accounting for 68 financing roles compared to 233 for domestic financiers. Private banks with a presence in construction projects in Nigeria are mainly those with extensive experience operating in SSA, including the UK's **Standard Chartered** and South Africa's **Investec** and **Rand Merchant Bank**.

Increase In Multilateral DFI Roles Would Encourage More Private Investment

Nigeria - Number Of Financier Roles By Source Type

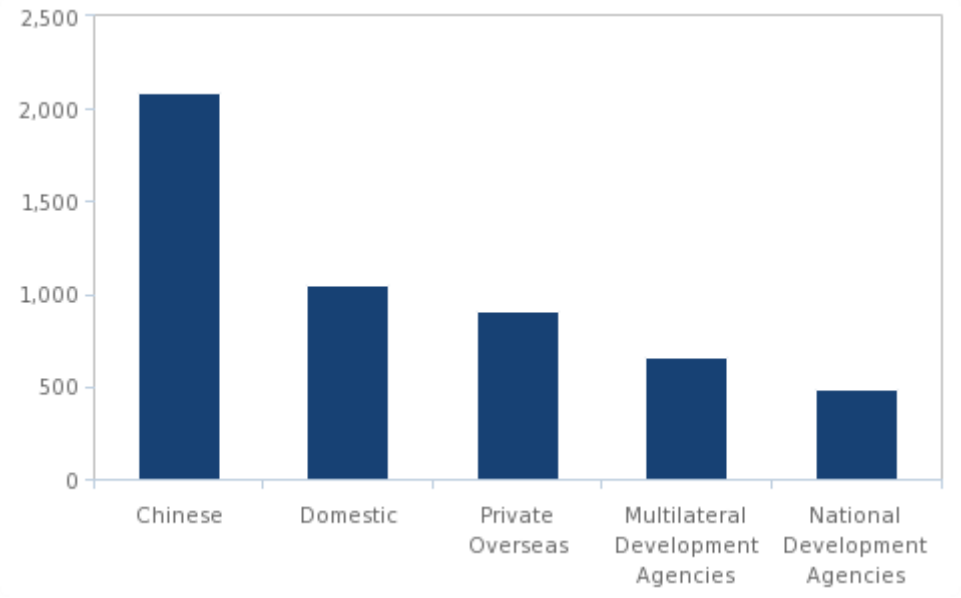


Source: Fitch Solutions Key Projects Database

As a result of the risks present in the Nigerian market, and the difficulty attracting private sector financing, foreign construction contractors often require the involvement of development finance institutions (DFIs), such as the World Bank in construction projects in order to offset risks and provide funding support. DFIs can provide support including insurance, guarantees and bridging financing which reassures investors and allows private firms to invest in high-risk markets like Nigeria. While DFI's have a moderate presence in the country's construction landscape, with a total of 61 financing or sponsor roles, this lags far behind domestic financiers with 233. DFIs are mainly involved in supporting relatively small-scale projects in the road and power sectors, with the World Bank in particular largely focused on road projects. In order to attract a more diverse range of private firms to the market, the involvement of DFI's will need to be expanded to include larger and more complex projects in a wider range of sectors.

Chinese Funding Required To Develop Largest Projects

Nigeria - Average Project Value By Financing Source, USDmn



Source: Fitch Solutions Key Projects Database

As a result of limited private sector interest and government budgetary constraints, Chinese financing will remain essential for infrastructure development in Nigeria. As well as providing the expertise needed to complete technically complex projects, Chinese state-owned construction firms benefit from considerable financial backing. The availability of Chinese concessional loans is crucial to enabling the Nigerian government to carry out large-scale, multi-billion dollar projects such as greenfield railways, ports and power plants. Although Chinese sources only take 13 sponsor or financier roles in Nigeria, fewer than the UK, the average value of projects supported by Chinese financiers is USD2.09bn, far higher than any other financing source. In contrast, while domestic sources take 233 project financing roles in Nigeria, the average project value is just USD1.05bn, and those projects with backing of DFIs come in at an even lower average value. **Exim Bank of China** is the main source of Chinese funding for infrastructure projects in Nigeria, taking 9 roles on projects including the multi-billion dollar Lagos-Kano standard gauge railway, the USD2.5bn Ibom Deep Sea Port Project and the USD1.29bn Zungeru Hydropower Plant.

Company Profile

Julius Berger Nigeria

SWOT Analysis

Strengths	• A vertically integrated company; less susceptible to price and supply shocks in the materials market. • A subsidiary of one of the largest construction and infrastructure companies. • One of Nigeria's largest and best-known construction companies.
Weaknesses	• Beholden to interests of the parent company. • Subject to the corruption, delays and regulatory weaknesses of Nigeria's construction market and tendering process.
Opportunities	• Nigeria's government has prioritised critical infrastructure construction for transport and energy. • Private sector investment in Nigeria is set to increase over the long term, pushing up demand for commercial construction.
Threats	• Deteriorating security situation further hinders the company in the Delta region. • Massive competition from international, more technically experienced and able, construction firms - in particular from China. • Failure in many instances of the federal government to pay debts as revenues from the oil sector have been hit from the fall in global prices.

Company Overview

Julius Berger is the Nigerian subsidiary of Germany's Bilfinger Berger. Julius Berger has been active in Nigeria's infrastructure sector since the mid-1960s when the company won the contract for the construction of Eko Bridge in Lagos. Julius Berger Nigeria was subsequently created and the company was incorporated onto the Nigerian stock exchange in 1991. The company's headquarters are in Abuja.

Since the Eko Bridge project, Julius Berger has expanded its activities throughout the country. The sectors the company operates in include residential and commercial construction, transport, energy & utilities (including oil & gas and water), and industrial construction. It is a vertically integrated company, with its own production of raw materials, such as cement and steel, and its own logistics chain.

Strategy

Of the company's 10 activity centres in Nigeria, five are in the Niger Delta area. Julius Berger is currently carrying out construction work through a public-private partnership on the second bridge across Niger. The company is particularly active in the road sector and its other ongoing work includes the Abuja - Kaduna - Zaria - Kano Dual Carriageway Reconstruction Project and the Lagos - Ibadan Expressway Rehabilitation Project, among others.

The business of Julius Berger is dependent on the general economic situation and the development of the country, mirroring the construction market as a whole. As an emerging market, political, financial and social challenges play a major role in the demand for new-build projects. Additionally, growing competition in the construction sector, along with the continued development of weak legal framework of industry-specific legislation, ordinances and regulations are risks. In order to mitigate such risks, the company focuses on maintaining a high degree of diversification and a medium- to low risk predictive portfolio profile.

The competition Julius Berger is facing mainly comes from Chinese construction majors that are now forming strategic alliances with the federal government for major infrastructure projects; in return, Chinese oil majors gain access to oil blocks. The most pertinent example is the USD8.3bn railway contract to China Civil Engineering Construction Corporation and the Olokola deepwater port by China Ocean Shipping (Group) Company.

Setraco Nigeria Limited

SWOT Analysis

Strengths

- Local player with a long history of activity in the sector.
- Has invested in creating its own asphalt production capability so as not to rely on the erratic materials market.
- According to the company's website, the firm has partnered with foreign design and consulting firms to expand its network and expertise.

Weaknesses

- In spite of a 30-year presence in Nigeria's infrastructure sector, the company has a limited scope of business segments.
- Highly dependent on government contracts for roads and bridges.

Opportunities

- Nigeria's government has made the development of critical infrastructure a priority.
- Road construction is progressing as the government pursues more feasible, lower-cost projects to provide a boost to the transport network, providing considerable investment opportunities.

Threats

- Corruption and red tape delay public investments from materialising.
- Failure on the part of the government to disperse funding for projects due to lower-than-expected oil revenues will adversely affect the road sector.
- Precarious security situation in the Niger Delta raises the risk premium.
- Seven of the company's international workers were kidnapped in northern Nigeria in April 2013.

Company Overview

Setraco is one of the main players in Nigeria's infrastructure sector, focusing on the construction of roads, bridges and airport runways. The company was founded in 1977 and expanded throughout the country. The company has carried out several major road and bridge construction contracts in Nigeria, including the East-West Highway in the Niger Delta.

Strategy

The company's other core strength lies in its materials production, specifically asphalt, the main raw material it needs for its projects. This not only assures that there will be no disturbance in the supply of materials but also makes cost predictions and cost management of a project feasible.

Infrastructure Methodology

Sector-Specific Methodology

Construction Industry

Construction Industry Value

Our data is derived from GDP by output figures from each country's national statistics office (or equivalent). Specifically, it measures the output of the construction industry over the reported 12-month period in nominal values (ie domestic currency terms). As it is derived from GDP by Output data, it is a measure of value added within the industry (ie the additional contribution of the construction industry, less the costs of labour and capital assets). Consequently, it does not measure the nominal value of all inputs used in the construction industry, which, for most states would increase the overall figure by 50-60%. Furthermore, it is important to note that the data does not provide an indication of the total value of a country's buildings, only the construction sector's output in a given year.

This data is used because it is reported by virtually all countries and can therefore be used for comparative purposes.

Construction Industry Value Real Growth

Our final forecasts for Construction Industry Value are a combination of quantitative and qualitative inputs.

The model we apply uses a regression function to forecast the construction industry value against our proprietary macroeconomic forecasts for Gross Fixed Capital Formation (GFCF). According to our testing this is the most statistically significant macroeconomic variable for deriving a forecast for a market's construction sector. Construction industry value in nominal terms is then adjusted for sector-specific inflation, or, deflator (where available) forecasts to produce real growth rates, year on year.

Other macroeconomic variables that are not statistically significant to include into the regression model, but indirectly flow into our forecasts through their impact on GFCF, include:

- Government expenditure
- Population
- Lending Rate
- Inflation

Our proprietary model then provides a fundamental basis for further analyst intervention to ensure that our statistical estimates reflect the actual business environment for the infrastructure sector.

Bearing in mind that other factors need to be taken into consideration, both quantitative and qualitative, our analysts also factor in sector specific issues in deriving our forecasts:

- Political risk - potential change in leadership, policy continuity
- Regulatory outlook - pricing structures of specific markets, bureaucracy, red tape
- Currency outlook - currency volatility, cost of imports
- Funding availability - fiscal health of the government, openness to private/foreign investment
- Fitch Solutions Key Projects Database - indication of a market's infrastructure project pipeline by sector
- High Frequency Data – construction permits, starts, confidence etc
- Company developments - reflective of market dynamics and competitive landscape

Construction Industry, % Of GDP/Construction Value (USD)

These are derived indicators. We use **Fitch Solutions'** Country Risk team's GDP and exchange rate forecasts to calculate these indicators.

Capital Investment

Total Capital Investment

Our data is derived from GDP by expenditure data from each country's national statistics office (or equivalent). It is a measure of total capital formation (excluding stock build) over the reported 12-month period. Total capital formation is a measure of the net additions to a country's capital stock, so takes into account depreciation as well as new capital. In this context, capital refers to structures, equipment, vehicles etc. As such, it is a broader definition than construction or infrastructure, but is used by **Fitch Solutions** as a proxy for a country's commitment to development.

Capital Investment (USD), % Of GDP, Per Capita

These are derived indicators. We use our Country Risk team's population, GDP and exchange rate forecasts to calculate them. As a rule of thumb, we believe an appropriate level of capital expenditure is 20% of GDP, although in rapidly developing emerging markets it may, and arguably should, account for up to 30%.

Government Capital Expenditure

This is obtained from government budgetary data and covers all non-current spending (ie spending on transfers, salaries to government employees, etc). Due to the absence of global standards for reporting budgetary expenditure, this measure is not as comparable as construction/capital investment.

Government Capital Expenditure, USDbn, % Of Total Spending

These are derived indicators.

Cement Forecast

Fitch Solutions forecasts Portland cement production (including imported clinker), consumption and net exports, in millions of tonnes. Our historical national production data is sourced from the United States Geological Survey (USGS), while trade data is sourced from UN COMTRADE. By calculating production and net exports, we are able to determine historical consumption levels. These consumption levels are then forecast out over our 10-year forecast period using our proprietary construction industry value methodology, reflecting the changing demand picture for cement from the industry.

Construction Sector Employment

Total Construction Employment

This data is sourced from either the national statistics office or the International Labor Organization (ILO). It includes all those employed within the sector.

Construction Employment, % y-o-y; % Of Total Labour Force

These are derived indicators.

Average Wage In Construction Sector

This data is sourced from either the national statistics office or the ILO.

Infrastructure Data Sub-Sectors

Fitch Solutions Infrastructure data examines the industry from the top down and bottom up in order to calculate the industry value of infrastructure and its sub-sectors. Our construction industry value is broken down into transport, energy and utilities, residential building and non-residential building. We use a combination of historic data as reported by the central banks, national statistics agencies and other official data sources, and Fitch Solutions' Infrastructure Key Projects Database tool.

Where possible we source historic data for the relative portion of either infrastructure spend or value generated by the various sub-sectors we classify as infrastructure. We seek to segment official infrastructure data into pre-set categories classified by us, across all countries, in order to optimise the ability to compare industry value across the sub-sectors of infrastructure. We then apply ratios to the infrastructure subsector value in order to derive the value. Real growth is calculated using the official construction inflation rate.

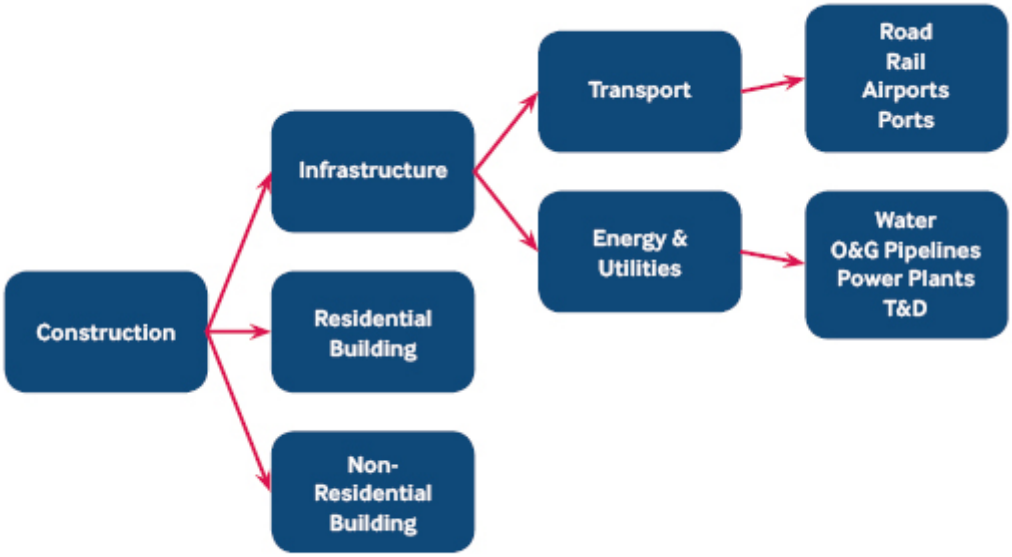
In those instances where historic data is not available, we use a top down and bottom up approach incorporating full use of **Fitch Solutions's** Infrastructure Key Projects Database, in most cases dating back to 2005. This allows us to calculate historical ratios between general infrastructure industry value and its sub-sectors, which we then use for forecasting. Our Key Projects Database is not exhaustive, but it is comprehensive enough to provide a solid starting point for our calculations.

The top down approach uses data proxies. We have separated countries into three tiers. Each tier comprises a group of countries on a similar economic development trajectory and with similar patterns in terms of infrastructure spending, levels of infrastructure development and sector maturity. This enables us to confirm and overcome any deficiencies of infrastructure-specific data by applying an average group ratio (calculated from the countries for which official data exists) to the countries for which data is limited.

- **Tier I - Developed States. Common characteristics include:**
- Mature infrastructure markets;
- Investments typically target maintenance of existing assets or highly advanced projects at the top of the value chain;
- Infrastructure as percent of total construction averages around 30%.
- Tier I countries: Canada, Germany, UK, US, France, Hong Kong, Taiwan, Singapore, Israel, Japan, Australia.
- **Tier II - Core Emerging Markets. Common characteristics include**
- The most rapidly growing emerging markets, where infrastructure investments are a government priority;
- Significant scope for new infrastructure facilities from very basic levels (eg highways, heavy rail) to more high value projects (renewables, urban transport);
- Infrastructure as percent of total construction averages around 45% and above.
- Tier II countries: Colombia, Malaysia, Mexico, South Korea, Peru, Philippines, Turkey, Vietnam, Poland, Hungary, South Africa, Nigeria, Russia, China, India, Brazil, Indonesia.
- **Tier III - Emerging Europe. Common characteristics include:**
- Regional socioeconomic trajectories;
- Development defined by recent or pending accession to European structures such as the EU. Infrastructure development to a large degree dictated by EU development goals and financed through vehicles such as the PHARE and ISPA programmes, and institutions such as the EBRD and EIB;
- Infrastructure as percentage of total construction averages between 30% and 40%.
- Tier III countries: Czech Republic, Romania, Bulgaria, Slovakia, Slovenia, Estonia, Latvia, Lithuania, Croatia, Ukraine.

This methodology has enabled us to calculate infrastructure industry values for states where this was not previously possibly. Furthermore, it has enabled us to create comparable indicators.

Fitch Solutions Construction Market Coverage



Source: Fitch Solutions

Infrastructure Risk/Reward Index

Our Infrastructure Risk/Reward Index (RRI) quantifies and ranks a country's attractiveness within the context of the Infrastructure industry, based on the balance between the **Risks** and **Rewards** of entering and operating in different countries.

We combine industry-specific characteristics with broader economic, political and operational market characteristics. We weight these inputs in terms of their importance to investor decision making in a given Industry. The result is a nuanced and accurate reflection of the realities facing investors in terms of: 1) the balance between opportunities and risk; and 2) between sector-specific and broader market traits. This enables users of the Index to assess a market's attractiveness in a regional and global context.

The index uses a combination of our proprietary forecasts and analyst assessment of the regulatory climate. As regulations evolve and forecasts change, so the Index scores change providing a highly dynamic and forward-looking result.

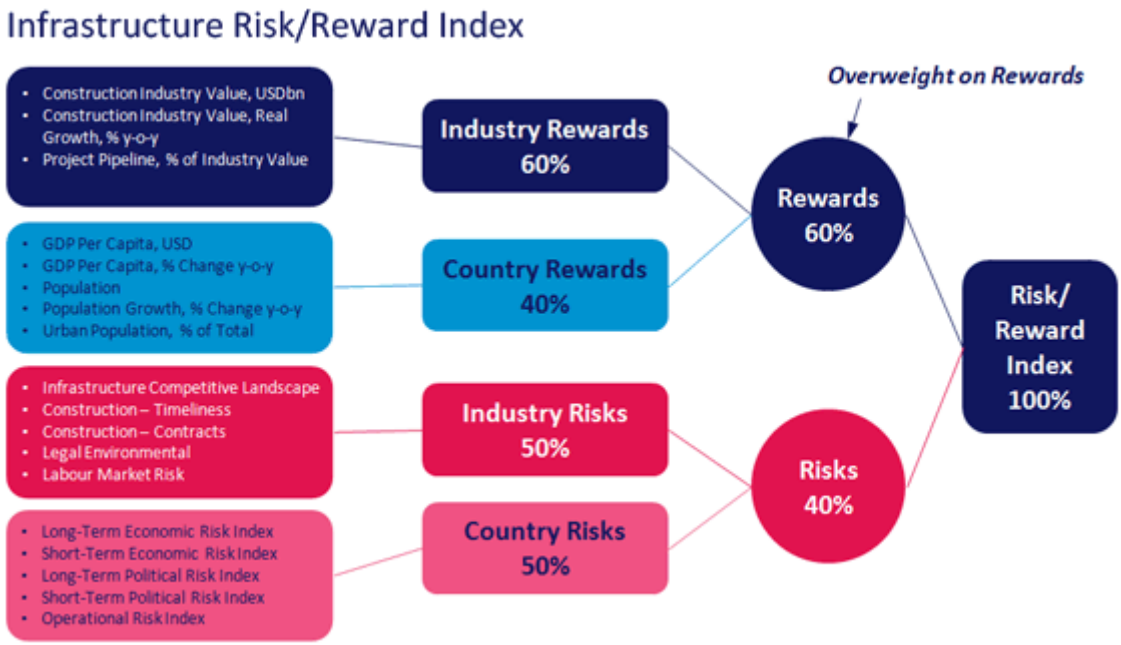
The Infrastructure Risk Reward Index universe comprises **105 countries**.

Benefits of using Fitch Solutions' Infrastructure RRI:

- Global Rankings: One global table, ranking all the countries in FITCH SOLUTIONS's universe for Infrastructure from least (closest to zero) to most attractive (closest to 100).
- Accessibility: Easily accessible, top down view of the global, regional or sub-regional Risk/Reward profile.
- Comparability: Identical methodology across 105 countries for Infrastructure allows users to build lists of countries they wish to compare, beyond the confines of a global or regional grouping.
- Scoring: Scores out of 100 with a wide distribution, provide nuanced investment comparisons. The higher the score, the more favourable the country profile.
- Quantifiable: Quantifies the Rewards and Risks of doing business in the Infrastructure sector in different countries around the world and helps identify specific flashpoints in the overall business environment.
- Comprehensive: Comprehensive set of indicators, assessing industry-specific risks and rewards alongside political, economic and operating risks.

- Entry Point: A starting point to assess the outlook for the Infrastructure sector, from which users can dive into more granular forecasts and analysis to gain a deeper understanding of the market.
- Balanced: Multi-indicator structure prevents outliers and extremes from distorting final scores and rankings.
- Methodology is a combination of proprietary Fitch Solutions forecasts, analyst insights and globally acceptable benchmark indicators (example: World Bank's Doing Business Scores, Transparency International's Corruption Perceptions Index).

Weightings Of Categories And Indicators



Source: Fitch Solutions

The RRI matrix divides into two distinct Categories:

Rewards: Evaluation of an Industry's size and growth potential (**Industry Rewards**), and also macro industry and/or country characteristics that directly impact the size of business opportunities (**Country Rewards**).

Risks: Evaluation of micro, industry-specific characteristics, crucial for an industry to develop to its potential (**Industry Risks)** and a quantifiable assessment of the country's political, economic and operational profile (**Country Risks**).

Our matrix is deliberately overweight on Rewards (60% of the final RRI score for a market) and within that, the Industry Rewards segment (60% of final Rewards score). This is to reflect the fact that when it comes to long term investment potential, industry size and growth potential carry the most weight in indicating opportunities, with other structural factors (demographic, labour statistics and infrastructure availability) weighing in, but to a slightly lesser extent. In addition, our focus and expertise in Emerging and Frontier Markets has dictated this bias towards industry size and growth to ensure we are able to identify opportunities in countries where regulatory frameworks are not as developed and industry sizes not as big (in USD terms) as in developed markets, but where we know there is a strong desire to invest.

Industry Forecast Methodology

Fitch Solutions' Industry forecasts are generated using the best-practice techniques of time-series modelling and causal/ econometric modelling. The precise form of model we use varies from industry to industry, in each case being determined, as per standard practice, by the prevailing features of the industry data being examined.

Common to our analysis of every industry, is the use of vector autoregressions. Vector autoregressions allow us to forecast a variable using more than the variable's own history as explanatory information. For example, when forecasting oil prices, we can include information about oil consumption, supply and capacity.

When forecasting for some of our industry sub-component variables, however, using a variable's own history is often the most desirable method of analysis. Such single-variable analysis is called univariate modelling. We use the most common and versatile form of univariate models: the autoregressive moving average model (ARMA).

In some cases, ARMA techniques are inappropriate because there is insufficient historic data or data quality is poor. In such cases, we use either traditional decomposition methods or smoothing methods as a basis for analysis and forecasting.

We mainly use OLS estimators and in order to avoid relying on subjective views and encourage the use of objective views, we use a 'general-to-specific' method. **Fitch Solutions** mainly uses a linear model, but simple non-linear models, such as the log-linear model, are used when necessary. During periods of 'industry shock', for example poor weather conditions impeding agricultural output, dummy variables are used to determine the level of impact.

Effective forecasting depends on appropriately selected regression models. We select the best model according to various different criteria and tests, including but not exclusive to:

- R2 tests explanatory power; adjusted R2 takes degree of freedom into account
- Testing the directional movement and magnitude of coefficients
- Hypothesis testing to ensure coefficients are significant (normally t-test and/or P-value)
- All results are assessed to alleviate issues related to auto-correlation and multi-collinearity

Fitch Solutions uses the selected best model to perform forecasting.

It must be remembered that human intervention plays a necessary and desirable role in all of our industry forecasting. Experience, expertise and knowledge of industry data and trends ensure that analysts spot structural breaks, anomalous data, turning points and seasonal features where a purely mechanical forecasting process would not.

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