

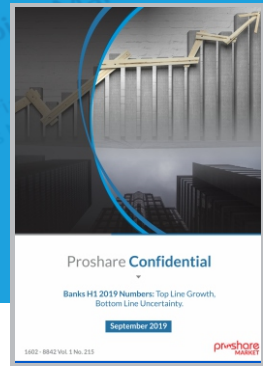
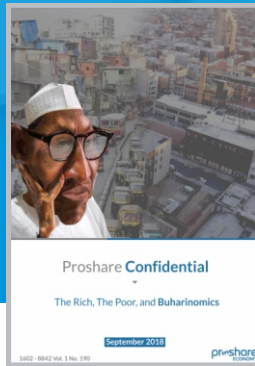
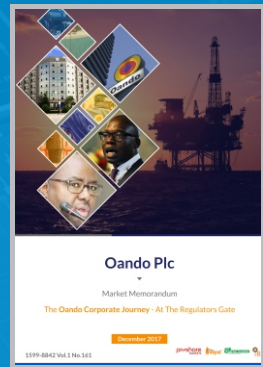
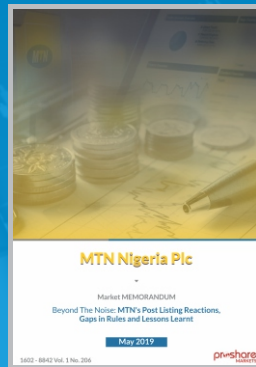
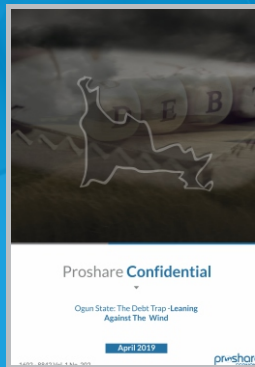
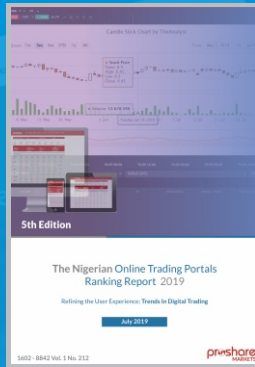
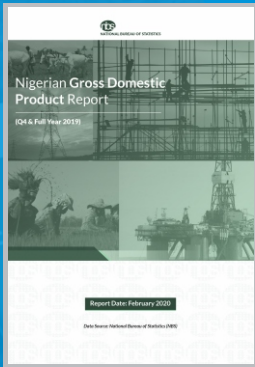


Proshare Confidential

**Roads: Concrete Vision, Asphalt Competition,
Looking Ahead.**



July 2020



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Introduction

Splitting hairs over road construction has been a classic challenge in Nigeria over the past two decades as poor road infrastructure continues to plague domestic supply chains and hurt manufacturing competitiveness. Nigeria's notoriously bad roads have led to considerations of appropriate road construction material and the best models for road financing. A kilometre of asphalt road in Nigeria is currently estimated to cost N1bn (or about four times the average cost of a kilometre of an asphalt road on the African continent). So far the most reasonable road solutions have remained balls in the air, as the choices have been weighed more by political expediency than financial prudence.

In a post-COVID-19 reality, the need for creative financial solutions to grow fresh social capital such as roads, bridges and highways would require resources to be used efficiently and effectively. To bring this into being governments at different levels may need to cut back on pork-barrel budgeting and expenditure while establishing project protocols that guarantee service -for-value in line with best global practices.

To Asphalt or Not to Asphalt? That Is The Question

The big question for road construction in Nigeria is increasingly, how to build roads to last at the lowest market-driven cost? Is the economic choice between cheaper but less durable roads and costlier but longer-lasting highways? Or is it a matter of optimizing road cost considerations over longer time frames on a cost-benefit basis? The answer would appear to be both, as road construction needs to involve longer-term considerations as the private sector weighs in on improving physical public infrastructure.

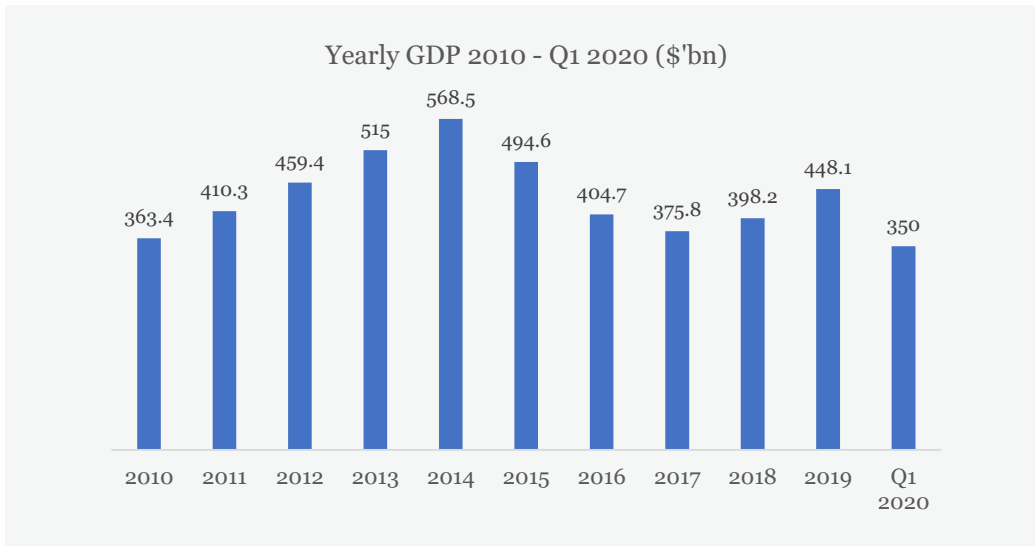
Project cash flows would need to be determinable and adequate to meet the ballpark considerations of investors in financing arrangements such as Sukuk (Islamic bonds). The new normal requires that roads should be sufficiently durable (last for 20 to 25-years) and provide enough cash inflows to create positive net present values for private investment. The need for durability sweeps up the little big matter of whether Nigerian roads should be asphalt or concrete?

The Asphalt Pitch

Asphalt roads are bitumen-based thoroughfares. Bitumen is a thick black syrupy liquid or semi-solid form of petroleum and is classed as Pitch. Asphalt is more of a gluey binder which when mixed with other aggregates forms asphalt concrete used in road construction in various parts of the country and has been the principal material for road construction in Nigeria for decades.

But the problem with asphalt is that it poorly withstands heavy traffic and intense tropical weather. The implications are that roads built with asphalt have proved to be fragile. The consequence of this lack of durability has been that the governments at both national and sub-national levels have had to intermittently 'patch' roads annually. Each heavy annual rainfall lays siege to the asphalt work of newly constructed or repaired roads resulting in loss of manhours, a rise in commercial logistics or fulfilment costs and the creation of avoidable delays in production and retail value chains. The consequence of poor road quality has, therefore, been devastating for the local economy and dampened the growth of the nation's annual gross domestic product (GDP) currently estimated at US\$448.10bn in real terms as of 2019 and US\$350bn as of Q1 2020 (*see chart 1*).

Chart 1 Nigeria's Real GDP: A Tale of Decline and Redemption



Source: National Bureau of Statistics (NBS), Proshare research

A kilometre of asphalt road in Nigeria costs an average of N1bn as against the World Bank's benchmark of N238m. But beyond the corruption adjustment factor in the pricing of asphalt roads, the problem with the tar technology is that the roads tend to fracture as a result of poor substructures prepared by local contractors.

Does Concrete Fix The Problem?



Does Concrete Fix The Problem?

The cost of construction alternatives to asphalt is only marginally higher in nominal terms, however, based on cost per kilometre per year of road per durability in years. An asphalt road would last two to three years before major reconstruction and repair work becomes necessary (in Nigeria one season of heavy rainfall causes road degradation as oxidation of road shoulders to cause erosion).

Concrete roads are more durable than their asphalt cousins. Concrete roads can last between 25 and 30 years without the need for major reconstruction work or repair. Based on socio-economic cost-benefit analysis, concrete roads provide superior returns on social capital outlays in the medium to long-term even though competing asphalt roads may also show positive net social present values, the longer the road is expected to last, the higher the net present value of concrete (rigid pavements) over asphalt (flexible pavements).

Nigeria has three major manufacturers of cement who could provide supply throughputs for the concrete road construction value chain, namely; Dangote Cement, Lafarge Cement, and BUA Cement (*see illustration 1*). The market structure for cement has shifted from a near-duopoly (two major suppliers of cement, Lafarge and Dangote) to an oligopoly (three major suppliers of cement as BUA stepped up production in 2019). The local cement market structure appears non-collusive (meaning that there does not seem to be any 'sweetheart' agreement on the price of cement) as competition remains modest, avoiding an outright ***beggars-thy-neighbour*** price war.

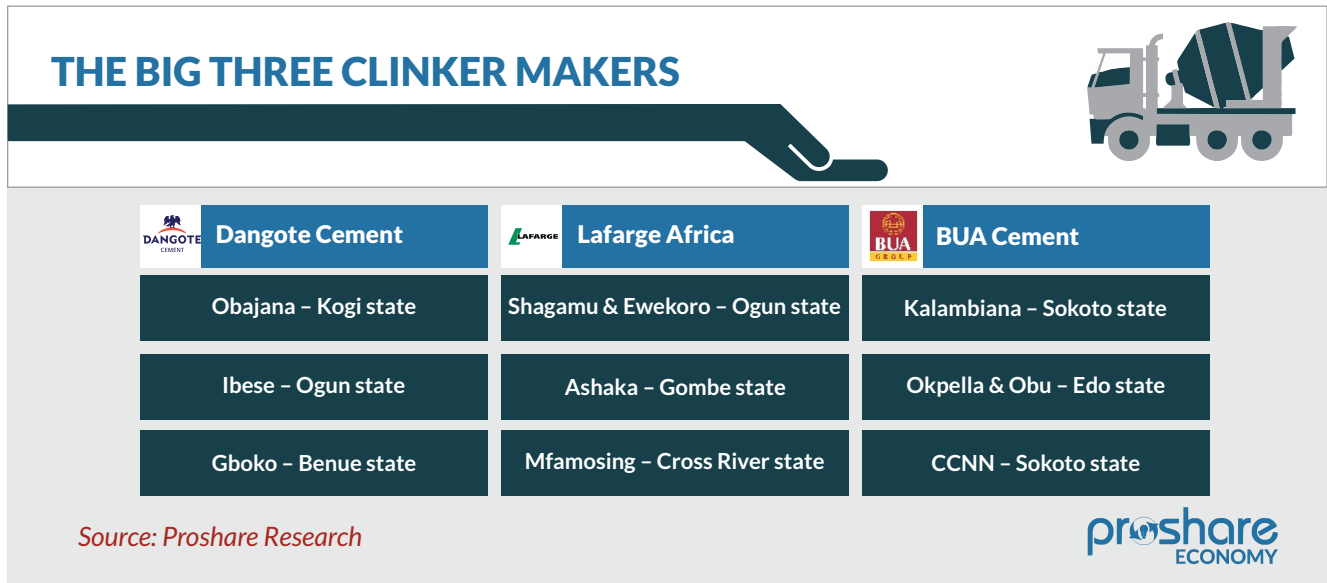
The existing market structure should protect users of cement for roads and highways from arbitrary price hikes and ensure that construction costs are predictable within reasonable bounds. The three major cement producers may become major beneficiaries of a preferred concrete road construction policy but this may have multiple benefits for vertical local supply chains and job creation. Dangote Cement Plc. has already shined a torch on the possibilities of concrete (rigid pavement) road option by collaborating with Flour Mills Nigeria Plc. to rebuild the Apapa-Oshodi expressway terminating at Ojota. The road is being constructed under a PPP arrangement with the participating companies receiving government tax rebates to pay for the roads. The tax rebate model could prove to be an interesting alternative to raising long-dated bonds such as Sukuk provided supervisory governance over the road quality is closely monitored by the Federal Ministry of Works and Housing (FMWH).

The FMWH and the Federal Executive Council (FEC) recently noted that Nigeria had large deposits of bitumen across the country which could be used in the production of asphalt, nevertheless, asphalt oddly remains a major import and foreign exchange component of the local road construction industry. In this light FEC, through the FMWH and its minister, Mr. Babtunde Fashola, SAN, has stated that “we encourage those who can manufacture and produce bitumen locally to tap into this demand”.

Illustration 1 Nigeria's Three Clinker Giants

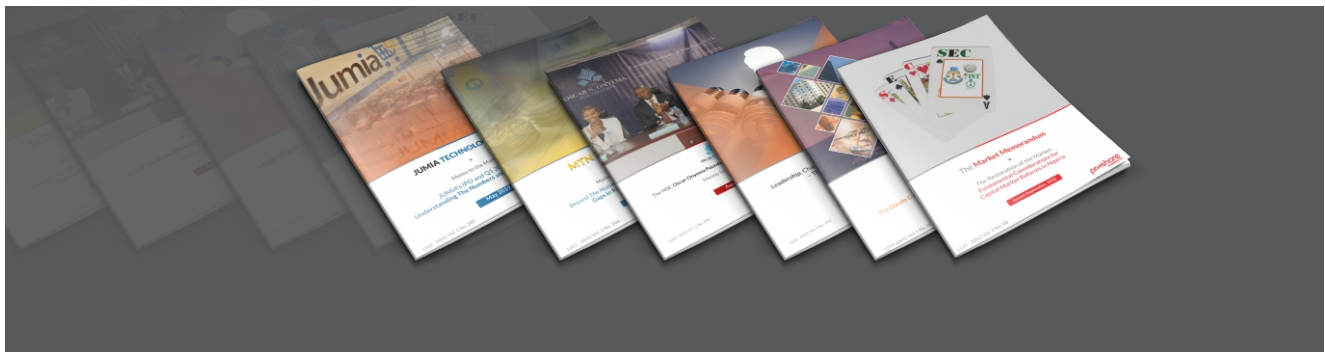


Illustration 1: Nigeria's Three Clinker Giants



The FEC's position is not necessarily a contradiction of an analyst's preference for the concrete road as some roads could be constructed using asphalt with reasonable durability and resilience. Examples of well-constructed asphalt roads across the country include the Garki area (1,2 and 8) of Abuja constructed 38 years ago (1982) and still in decent condition. Roads in Wuse: Zone 1, Zone 2 and Zone 5 of the Federal Capital Territory (FCT) have also shown durability and resilience and indicate an ability of asphalt roads to last reasonably long if the technical workmanship is consistent with global best practices and alignment of construction material to soil type. The higher the acidity of the soil the more alkaline the construction materials that would be required for road construction, the converse is equally true, the more alkaline the soil the more acidic the content needed to achieve a pH of 7.

Business and policy analysts believe that an increase in the use of cement over asphalt over a ten-year planning horizon should improve the quality of Nigerian road infrastructure and lead to secondary benefits (enhanced multipliers) through the improvement in vehicular traffic hours, a reduction in the wear and tear on public and private vehicles and a fall in the delivery time of farmgate produce to urban markets. E-commerce companies are equally likely to see a reduction in their fulfilment costs thereby improving corporate bottom-line earnings as delivery costs slide marginally.



The Art and Strategy of Long-term Road Finance

The challenge of road construction in Nigeria over the years beyond inflated costs has been poor durability. The need to make Nigerian roads more durable and improve the primary infrastructure that supports transportation has become urgent as COVID-19-induced supply chain disruptions have increased the cost of production and distribution. To bring distribution costs down and make locally made products more competitive road infrastructure must be improved to global standards.

The impact of sloppy construction work and poor road quality could mean the difference between Nigeria's economic sustainability and its commercial and manufacturing sector collapse. Within a COVID-19 economic reality, fiscal authorities need to optimize public spending by ensuring minimum quality standards for every naira spent. At a time of declining fiscal revenues, governments at all levels have little wiggle room for non-optimal public spending, which means that projects must be delivered on time and within budgets based on contracted quality standards.

However, there has been a presumption that road construction must be undertaken by signing public sector contracts. The assumption is wrong. Globally roads are increasingly being funded under a private-public partnership (PPP) arrangement on a build operate and transfer (BOT) basis, a build own operate and transfer (BOOT) basis or a build operate and own (BOO) basis. The particular framework chosen by parties would depend on the nature of the road, the strategic significance of the road to economic development and the capital outlay that would be required to build the road within an agreeable payback period.

In the new world of road construction, roads are built for durability, in other words, they are meant to last. The implication is that road contracts tend to run from two to five years. The longer the construction period the higher the outlay cost and the more indeterminate the project cash flow. Nevertheless, on a discounted cash flow basis, the net present value of such projects is expected to be positive as the roads would be tolled to recover the project outlay cost plus the required business margin.

Nigeria's history with tollgates, however, has been patchy. The Lagos-Ibadan expressway was once tolled but the lack of transparency of the managers of the toll plaza led to a deterioration in the quality of the road as the government had to resort to fiscal provisions to sustain periodic repairs. The President Olusegun Obasanjo administration (1999-2017) brought down toll gates across the country in 2003 to reduce the interstate commuter cost of travel and farmgate delivery prices as well as to wipe out the corruption involved in the lack of accountability of toll gate revenues (the 16 toll bridges across the country generated a modest N63m per day or N23bn annually).

Another instance where tolling roads in Nigeria has been difficult has been the Lekki-Epe expressway which presently is in a state of disrepair in portions despite daily toll collections. The Lekki-Epe was entrapped in all kinds of obscure financing arrangements which ultimately resulted in the state government paying for the construction but still using a private agent to collect tolls without the attendant road repair and maintenance.

The New Way: The Better Way

Analysts have insisted that the financial and technical management of highways needs to change if the country is to improve its social capital investment, they note that the country must get road finance

funding to stretch over lengthier horizons. Therefore, rather than have governments finance road infrastructure, public policy analysts have recommended that the Nigerian public sector needs to standardize PPP contracts and commit themselves to comply with the terms of PPP agreements (Messrs Bi-Courtney is still in court with the federal government of Nigeria over the concession of the 127.6km Lagos-Ibadan expressway). A lack of contractual good faith usually becomes a deal-breaker that frustrates PPPs in Nigeria, such that the serial failure of PPPs has made direct foreign investors (DFIs) balk at the prospect of financing long-term road construction in the country.

The Federal Government of Nigeria's recent [Sukuk \(non-interest finance\) bond issues](#) (now in series 3) shines a light on the potential for the [securitization](#) of road assets to generate cash flow for investors while projects are completed on time and within budget.

The use of long-dated bonds to fund road contracts provides an opportunity for new road construction initiatives to achieve the following;

- 📌 Funding efficiency (especially Sukuk)
- 📌 Improved project cash flow planning and management
- 📌 Reduced project funding uncertainty
- 📌 Top grade project management
- 📌 Loan repayment certainty

The new road construction framework may involve less public sector intervention except for roads of lower priority or that have overriding public interest considerations. These lower priority roads (or roads with special public interest) would typically be intracity roads that cannot be tolled as a result of their peculiar location and socio-economic dynamics. In Lagos, for example, the Lekki-Epe expressway can be arranged under a proper concession with a PPP arrangement that ties-in lighting, road maintenance, first-responder medical intervention, close circuit cameras and street lights as part of the infrastructure upgrade which would likely involve the construction of a new coastal road that bypasses the current multiple roundabouts. A similar framework under a 20-year Sukuk bond could be used to finance a fourth mainland bridge project between Lekki and Ikorodu.

To break the ice on the Ogun-Lagos 2.0 project, the Ogun State government could equally propose a bond to fund specific new town developments in border communities with Lagos state to optimize proximity and land availability. The upgrade of infrastructure would generate strong cash flows that would cover project outlays within 15 years and repay coupon and principal payments on the bond. To make the funding even more interesting, both Lagos and Ogun states could do a joint bond issue that would likely raise the bond rating and reduce the bond cost by way of a lower advised coupon rate.

Sukuk finance option appears to have been a sleek way of fiscal funding at a time of lean resources. In a tweet on the 27th July 2020, the President's Senior Special Assistant (SSA) on Public Affairs, Ajuri Ngelale, posted details of a few Sukuk funded road projects across the country. **According to experts, the projects** were heartwarming but from a technical standpoint the various projects suffered from the Nigerian disease of poor technical construction quality with a number of the roads having weak road shoulders while others were missing drainages that are critical to road integrity in the southern parts of the country that are usually prone to waterlogging and torrential rainfalls, particularly in the south-south (*see illustrations 2*).



Illustrations 2: Sukuk and The Uncomfortable Art of Road Construction

SOUTH-EAST BREAKDOWN: FIVE ROADS



Kms Covered (2020) ▶ 21.7km

Contractor	Contract Sum	Current Completion	2020 SUKUK Payment
Setraco Nigeria	N39.54bn	64%	N5.0bn



Enugu-PH Dual Carriageway (Lokpanta-Umuahia)

Kms Covered (2020) ▶ 25.75km

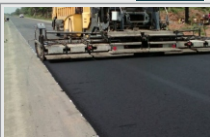
Contractor	Contract Sum	Current Completion	2020 SUKUK Payment
Arab Contractors Ltd	N50.89bn	36.21%	N5.5bn



Enugu-PH Dual Carriage: (Section II - Umuahia to Aba)

Kms Covered (2020) ▶ 27.0km

Contractor	Contract Sum	Current Completion	2020 SUKUK Payment
CGC Nigeria Ltd	N32.31bn	28.77%	N5.0bn



Enugu-PH (Section III - Enugu to Lokanta)

Kms Covered (2020) ▶ 12.0km


Contractor	Contract Sum	Current Completion	2020 SUKUK Payment
RCC	N62.06bn	29.92%	N6.5bn



Onitsha-Enugu Expressway (Section 1 - Amansea to Enugu state Border)

Kms Covered (2020) ▶ 13.0km

Contractor	Contract Sum	Current Completion	2020 SUKUK Payment
Arab Contractors Ltd	N31.94bn	4.75%	N4.0bn



Old Enugu-Onitsha Road (Opi Junction - Aboh Udi - Oji - Anambra Border)


Source: Ajuri Ngelale (SSA to President Buhari on Public Affairs)



SOUTH-EAST BREAKDOWN: FIVE ROADS

Kms Covered (2020) ▶ 21.7km

Contractor	Contract Sum	Current Completion	2020 SUKUK Payment
Setraco Nigeria	N39.54bn	64%	N5.0bn



Enugu-PH Dual Carriageway (Lokpanta-Umuahia)

Kms Covered (2020) ▶ 25.75km


Contractor	Contract Sum	Current Completion	2020 SUKUK Payment
Arab Contractors Ltd	N50.89bn	36.21%	N5.5bn



Enugu-PH Dual Carriage: (Section II - Umuahia to Aba)

Kms Covered (2020) ▶ 27.0km

Contractor	Contract Sum	Current Completion	2020 SUKUK Payment
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Enugu-PH (Section III - Enugu to Lokanta)

Kms Covered (2020) ▶ 12.0km


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Arab Contractors Ltd	N31.94bn	4.75%	N4.0bn



Old Enugu-Onitsha Road (Opi Junction - Aboh Udi - Oji - Anambra Border)

Source: Ajuri Ngelale (SSA to President Buhari on Public Affairs)



SOUTH-SOUTH BREAKDOWN: TEN ROADS



Kms Covered (2020) ▶ 56.87km

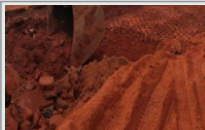
Contractor	Contract Sum	Current Completion	2020 SUKUK Payment
Mothercat Ltd	N21.29bn	48.85%	N4.0bn



Dualization of Obajana Junction to Benin:
(Section II – Okene to Auchi)

Kms Covered (2020) ▶ 23.0km

Contractor	Contract Sum	Current Completion	2020 SUKUK Payment
Dantata & Sawoe	N34.86bn	13.41%	N4.0bn



Dualization of Obajana Junction to Benin:
(Section 111 - Auchi to Ehor)

Kms Covered (2020) ▶ 9.0km

Contractor	Contract Sum	Current Completion	2020 SUKUK Payment
RCC Nigeria Ltd	N35.25bn	39.68%	N3.5bn



Dualization of Obajana Junction to Benin:
(Section IV - Ehor to Benin)

Kms Covered (2020) ▶ 3.48km

Contractor	Contract Sum	Current Completion	2020 SUKUK Payment
CCECC Nigeria Ltd	N40.35bn	23.74%	N3.0bn



Reconstruction of Enugu-Port Harcourt Road
(Section IV Aba-Portharcourt Expressway)

Kms Covered (2020) ▶ 3.50km

Contractor	Contract Sum	Current Completion	2020 SUKUK Payment
CCECC Nigeria Ltd	N26.49bn	20.5%	N2.0bn



Dualization of Yenegwe-Kolo-
Otuoke-Bayelsa Palm Road



SOUTH-SOUTH BREAKDOWN: TEN ROADS



Kms Covered (2020) ▶ 1.20km

Contractor	Contract Sum	Current Completion	2020 SUKUK Payment
Setraco Nigeria Ltd	N9.91bn	45.02%	N4.55bn



Construction of Ikom Bridge, Cross River state

Kms Covered (2020) ▶ 4.0km

Contractor	Contract Sum	Current Completion	2020 SUKUK Payment
Julius Berger	N54.17bn	1.82%	N3.0bn



Reconstruction of Odukpani -Itu-Ikot Ekpene Road, Cross River state (Section 1 - Odukpani-Itu Bridge)

Kms Covered (2020) ▶ 3.0km

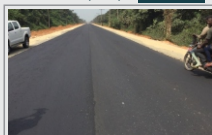
Contractor	Contract Sum	Current Completion	2020 SUKUK Payment
CGC Nigeria Ltd	N64.87bn	8.80%	N1.5bn



Dualization of Sapele - Ewu Road (Section 1 - Sapele-Agbor, Delta state)

Kms Covered (2020) ▶ 7.73km

Contractor	Contract Sum	Current Completion	2020 SUKUK Payment
Setraco Nigeria Ltd	N47.94bn	13.98%	N1.5bn



Dualization of Sapele - Ewu Road: (Section 11 - Agbor - Ewu, Delta state)

Kms Covered (2020) ▶ 10.0km

Contractor	Contract Sum	Current Completion	2020 SUKUK Payment
Sermatech Nigeria Ltd	N11.22bn	91.00%	N1.5bn



Reconstruction of Alesi-Ugep Road (Iyamoyung-Ugep), Cross River

Source: Ajuri Ngelale (SSA to President Buhari on Public Affairs)




SOUTH-WEST BREAKDOWN: SIX ROADS



Kms Covered (2020) ▶ 15.0km


Contractor	Contract Sum	Current Completion	2020 SUKUK Payment
RCC Nigeria Ltd	N65.22bn	82.96%	N4.5bn



Benin-Ofosu-Ore-Ajebandele-Shagamu Expressway

Kms Covered (2020) ▶ 8.70km


Contractor	Contract Sum	Current Completion	2020 SUKUK Payment
CGC Nigeria Ltd	N63.02bn	9.3%	N4.5bn



Lagos-Badagry Expressway (Section 1 Agbara Junction - Benin Border)

Kms Covered (2020) ▶ 4.54km


Contractor	Contract Sum	Current Completion	2020 SUKUK Payment
CCECC Nigeria Ltd	N9.27bn	0.00%	N4.0bn



Outer Marina Road in Lagos State

Kms Covered (2020) ▶ 8.0km


Contractor	Contract Sum	Current Completion	2020 SUKUK Payment
RCC Nigeria Ltd	N47.50bn	73.35%	N5.0bn



Ibadan-Ilorin Expressway (Section 11 - Oyo - Ogbomosho road in Oyo State)

Kms Covered (2020) ▶ 13.0km


Contractor	Contract Sum	Current Completion	2020 SUKUK Payment
RCC Nigeria Ltd	N71.64bn	26.5%	N4.5bn



Pavement Strengthening and Asphalt Overlay of Ajebandele - Ijebu Ode - Shagamu Road in Ogun State

Kms Covered (2020) ▶ 10.50km

Contractor	Contract Sum	Current Completion	2020 SUKUK Payment
Julius Berger	N56.70bn	15.38%	N4.55bn



Lagos - Otta Road

Source: Ajuri Ngelale (SSA to President Buhari on Public Affairs)

An Alternative View

Some seasoned engineers are not sold on the concept of PPP, and they have argued that most PPP projects in the country fail for a variety of reasons which include but are not limited to the following:

- ❶ Governments seldom stick to the original terms of the contractual PPP agreement, especially when it is realized that cash flow projections may vary widely over the life of the project. Secondary phase project managers may face significant financial risk if projects are handed over to them at the end of the initial contract completion phase without a sinking fund or some form of intervention funding ready to address repair work needed to correct road deterioration after the early contract phase. They make an example of a road that has a contract term of ten years with a maintenance clause. The initial contractor would have no maintenance challenge to handle in the ten years but if a new contractor is engaged to handle periodic maintenance, the new contractor would likely need some early financing to tackle the gradual attrition of the road after a decade. In other words, the road's maintenance cost is not internalized over the long life of the project and maintenance financing is not properly phased-into the road's life cycle. Investors would likely 'front-load' the cost of the project to enhance overall investment yield, thereby creating in-built institutional cost bias resulting in lower construction cost efficiency.
- ❷ The public sector may have to pay unjustified premiums by entering into private construction partnerships.
- ❸ Foreign investors would feel uncomfortable with a payback period which could extend to between 30 and 40 years in some instances or between 20 and 25 in others. The earliest payback period would be 20 years.
- ❹ Roads and highways are notionally “**public goods**” meaning that users do not have exclusivity of use and they do not compete with others since one person's use does not prevent others from using the same facility, according to public policy analysts, roads are 'non-rival' in use thereby making the fixing of a cost of the use of such road infrastructure difficult as 'externalities' or unintended benefits or cost to commuters cannot be quantified. These underlying market 'failures' prompt transport economists to argue that a preferred way of financing road construction would be through taxes on both premium motor spirit (PMS) and Diesel. These taxes would be such that the revenues would be adequate to cover road maintenance costs nationwide on a scheduled periodic basis.

The problem with this, otherwise, practical road financing model is that the financial arrangement would require the monies collected to be remitted to the federation account where it would be shared amongst the three tiers of government; federal, state and local, in line with the statutory fiscal distribution formula, ***so how do such fiscal revenues become legally quarantined for the exclusive application to the repair and maintenance of roads nationwide?***

Such considerations are nuts that need to be cracked by the fiscal authorities. Without addressing how fiscal revenues are legally channelled into regular road repair and maintenance programmes, the issue of centralized revenue collection will be a hindrance to matching revenues with road projects.

A fresh look at Road Management -
Simplifying the Complex



A fresh look at Road Management – Simplifying the Complex

Road maintenance has been a nightmare in Nigeria, especially in Lagos state. The problem need not be a major challenge if the government was prepared to make the complex simple.

The government could franchise roads to private organizations who would be given the right to collect billboard and signage revenues along the route as long as they are prepared to maintain the roads within the terms of the franchise agreement. The roads that would be under such a franchise would be inner roads categorized as 'C' and 'D' roads. The problem here would be that local governments would insist that revenues from signages and billboards form part of local government revenue sources. An alternative route would be to raise a general-purpose road bond by the state government and the bond would be applied to the rehabilitation and maintenance of specific roads. To fund the bond the advertising rates and land use charges along these corridors could be increased over the life of the bond but would fall once the bond is repaid in 4-years.

The 'pooling' of the road assets into a single bond instrument would make securitization and fundraise easier and perhaps more attractive as long as the basket of roads included in the asset bundle can generate the required revenue flows to meet the bond obligations. The fact that the bonds could be tradeable in a secondary financial market like the FMDQ would make them attractive and introduce greater market liquidity and asset diversity.

The Clinker Belts

Nigeria's limestone belt stretches from Sokoto (where BUA Cement Plc is the leading mining franchise) to Bauchi and Gombe states (where Lafarge Africa Plc is the strongest mining interest) to Ogun state (with dominant processing plants of Dangote Cement Plc) to Kogi (where Dangote has the flagship Obajana factory) and Ebonyi, Imo and Abia states (with smaller mining licensees). However, BUA Cement has some noticeable competitively advantageous presence in both Edo and Ebonyi states (*see illustration 3 and tables 1 & 2*).

Illustration 3 The Demography of Limestone: Spotting Mines and Opportunities



Illustration 3 The Demography of Limestone: Spotting Mines and Opportunities

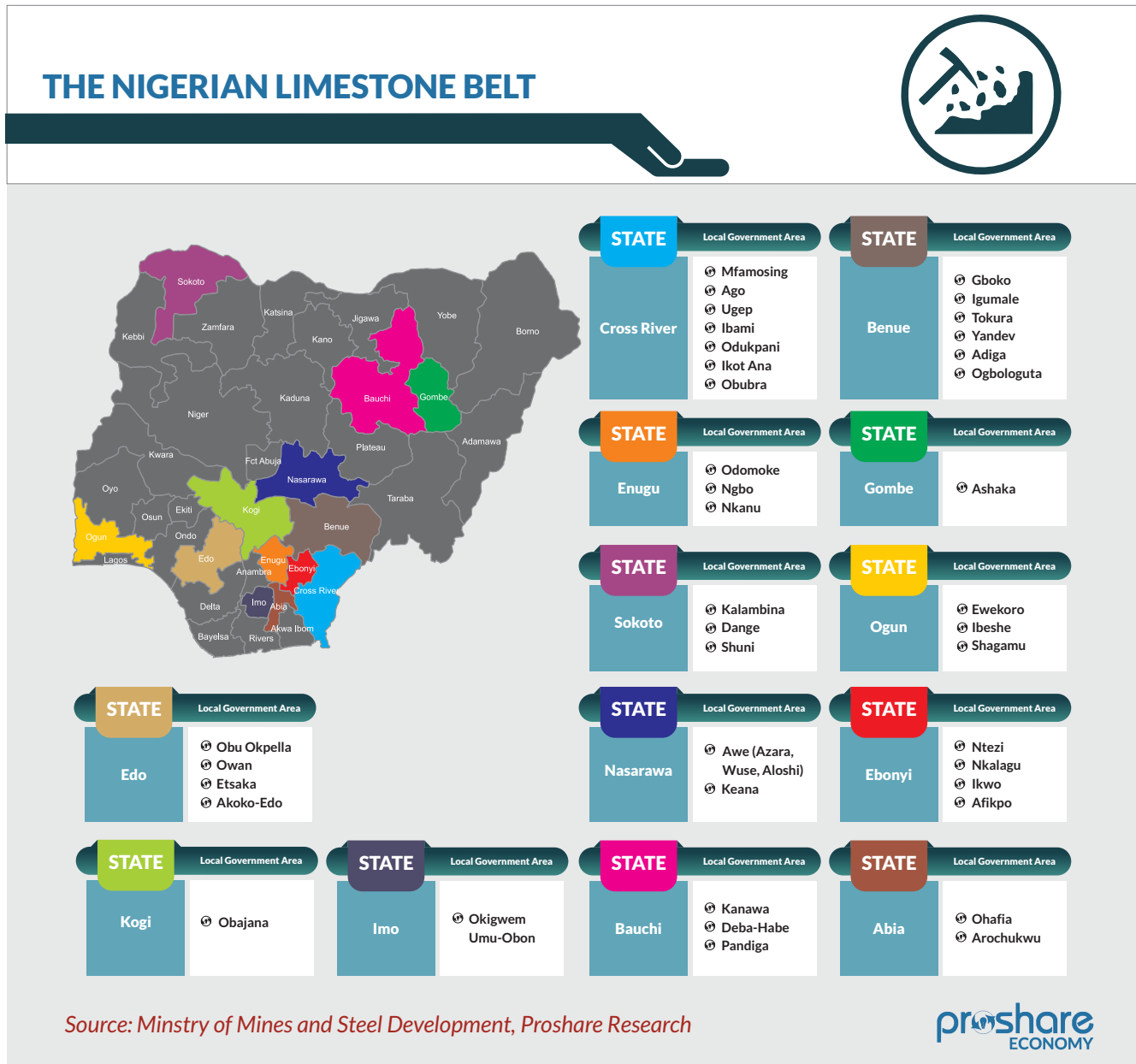


Table 1: The Demography of Limestone; Spotting The Mines

ALL IN A DAYS MINING-LIMESTONE LICENCES IN NIGERIA

	Operator	Type	License Id	State	Number of CUs	Expiry Date
1	Josimog International Ventures Limited	Quarry Lease	20869	Edo	5	22/07/2020
2	Xath Resources Limited	Quarry Lease	6742	Edo	6	18/08/2020
3	Gatamitech Nigeria Limited	Quarry Lease	20806	Edo	6	20/08/2020

ALL IN A DAYS MINING-LIMESTONE LICENCES IN NIGERIA



4	Ibeto Cement Company Limited	Exploration License	25767	Cross River	335	29/08/2020
5	Julius Berger Nigeria Plc	Quarry Lease	6504	Lagos	6	25/09/2020
6	M. G. I. Sand & Stones Quarry Association Holding	Quarry Lease	9918	Kaduna	6	25/09/2020
7	Ayesco Royal Ventures Nigeria Limited	Small Scale Mining Lease	21278	Edo	5	11/11/2020
8	West African Portland Cement Plc	Small Scale Mining Lease	21426	Ogun	4	11/11/2020
9	Bua International Limited	Quarry Lease	21681	Edo	8	14/12/2020
10	CAS Global Solutions Limited	Quarry Lease	21746	Edo	8	14/01/2021
11	CAS Global Solutions Limited	Quarry Lease	21747	Edo	6	14/01/2021
12	Josimog International Ventures Limited	Quarry Lease	20868	Edo	12	14/01/2021
13	Hugoboss International Limited	Quarry Lease	21340	Ebonyi	1	22/03/2021
14	Oyisco Industries Nigeria Limited	Small Scale Mining Lease	21300	Anambra	2	23/03/2021
15	Bua International Limited	Quarry Lease	22636	Edo	3	11/05/2021
16	CCNC Nigeria Limited	Quarry Lease	23549	Ebonyi	6	01/09/2021
17	U.Maduka Enterprises (Nigeria) Limited	Quarry Lease	23413	Ebonyi	9	01/09/2021
18	Bua International Limited	Quarry Lease	11535	Ebonyi	25	11/09/2021
19	Bua International Limited	Quarry Lease	11972	Edo	2	11/09/2021
20	Paul-B Nigeria Plc	Quarry Lease	11734	Edo	6	15/10/2021
21	M.N. Ugya Enterprises	Quarry Lease	23835	Nasarawa	2	03/11/2021
22	Prossy Investments Limited	Quarry Lease	24390	Ebonyi	4	17/01/2022
23	Sew Construction Limited	Quarry Lease	23980	Ebonyi	3	17/01/2022
24	E-block Cement Limited	Quarry Lease	13065	Ogun	24	12/02/2022
25	O. O. Orifa Nigeria Limited	Quarry Lease	23174	Edo	4	22/02/2022
26	Maibon Construction And Marketing Ltd	Small Scale Mining Lease	25156	Edo	4	11/05/2022
27	Ozaka International Limited	Small Scale Mining Lease	25418	Oyo	2	28/06/2022
28	Signal Multi Links Enterprises	Small Scale Mining Lease	25451	Bauchi	6	28/06/2022
29	Bua International Limited	Quarry Lease	25958	Edo	22	28/06/2022
30	Eldelstein Nigeria Limited	Quarry Lease	1727	Edo	2	18/09/2022
31	Ashaka Cement PLC Limited	Mining Lease	6	Gombe	145	31/12/2029
32	Ashaka Cement PLC Limited	Mining Lease	223	Gombe	24	31/12/2029
33	Benue Cement Company Plc Plc	Mining Lease	42	Benue	85	31/12/2029

Source: Ministry of Mines and Steel Development, Proshare Research

Table 2 The Demography of Limestone: Spotting The Mines

ALL IN A DAYS MINING-LIMESTONE LICENCES IN NIGERIA



	Operator	Type	License Id	State	Number of CUs	Expiry Date
34	Edo Cement & Company Limited	Mining Lease	79	Edo	3	31/12/2029
35	Edo Cement & Company Limited	Mining Lease	785	Edo	8	31/12/2029
36	Fanalou Nigeria Company Limited	Mining Lease	114	Edo	2	31/12/2029
37	Fanalou Nigeria Company Limited	Mining Lease	115	Edo	64	31/12/2029
38	Moven J Limited	Mining Lease	421	Kogi	1	31/12/2029
39	Moven J Limited	Mining Lease	423	Kogi	2	31/12/2029
40	Obajana Cement Plc Inc	Mining Lease	491	Kogi	35	31/12/2029
41	Rabo Investment Limited	Mining Lease	575	Kogi	4	31/12/2029
42	United Cement Company Limited	Mining Lease	643	Cross River	237	31/12/2029
43	West African Portland Cement Plc	Mining Lease	1	Ogun	264	31/12/2029
44	West African Portland Cement Plc	Mining Lease	2	Ogun	2	31/12/2029
45	West African Portland Cement Plc	Mining Lease	8	Ogun	12	31/12/2029
46	West African Portland Cement Plc	Mining Lease	583	Ogun	99	31/12/2029
47	International Cement Company Limited	Mining Lease	6883	Ogun	93	31/12/2031
48	Lime Chemicals Limited	Mining Lease	1545	Edo	12	31/12/2031
49	West African Portland Cement Plc	Mining Lease	1112	Edo	119	31/12/2031
50	Purechem Nigeria Limited	Mining Lease	419	Edo	12	03/10/2032
51	Nigerian Cement Company Plc Limited	Mining Lease	905	Ebonyi	90	30/10/2032
52	Nigerian Cement Company Plc Limited	Mining Lease	3029	Benue	84	30/10/2032
53	Nigerian Cement Company Plc Limited	Mining Lease	3030	Ebonyi	79	30/10/2032
54	Nigerian Cement Company Plc Limited	Mining Lease	3848	Benue	84	30/10/2032
55	Nigerian Cement Company Plc Limited	Mining Lease	3849	Ebonyi	86	30/10/2032
56	Nigerian Cement Company Plc Limited	Mining Lease	3850	Ebonyi	114	30/10/2032
57	Majok Quarries Limited	Mining Lease	422	Kogi	1	13/02/2033
58	Dangote Industries Limited	Mining Lease	8119	Ogun	174	07/03/2035
59	Nasbago Limited	Mining Lease	7473	Nasarawa	18	07/03/2035
60	Ezza-Ezekuna Resources Limited	Mining Lease	9630	Ebonyi	100	26/09/2035
61	Cement Company of Northern Nigeria Plc	Mining Lease	9564	Sokoto	10	07/10/2035
62	Dangote Industries Limited	Mining Lease	20574	Ogun	246	25/05/2040
63	Ashaka Cement PLC Limited	Mining Lease	20262	Gombe	12	17/06/2040

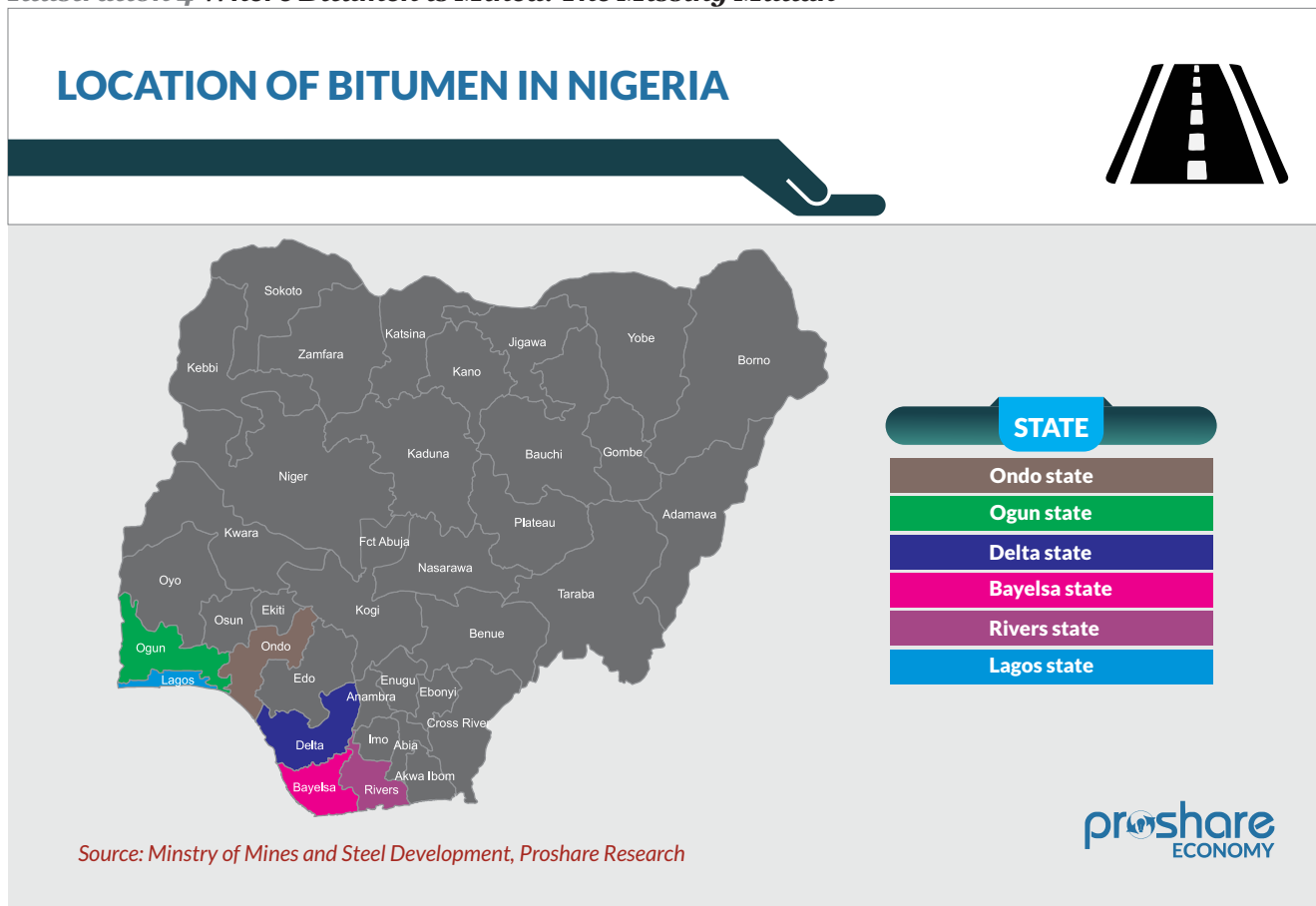
Source: Ministry of Mines and Steel Development, Proshare Research

Since limestone is spread across the country fairly evenly, analysts have recommended that to reduce road construction costs and improve vertical local supply chain networks, contractors embarking on road projects within states should buy cement from companies that have the best local production proximity. The adoption of this framework would help pull down operational costs and improve local job rates for casual workers and a few blue-collar supervisors.

The Bitumen Mines: The Roads Yet Travelled

Bitumen mines are just as important as limestone deposits. The spread of bitumen traces a path across Nigeria's three economic regions of the southeast, the south-south and the southwest stretching from Rivers State to Bayelsa State and from Ondo State to Ogun State down to Badagry in Lagos State (see illustration 4).

Illustration 4 Where Bitumen is Mined: The Missing Mullah




The estimated Bitumen reserves in Ondo State is roughly 6bn barrels, while that of tar sand is 42bn barrels or almost twice the existing reserves of crude oil. Nigeria is believed to have the largest deposits of Bitumen in Africa and possibly the second largest in the world (spanning 120km). The total estimated reserve of bitumen in Nigeria is about 42.74bn metric tons. In 2018 Nigeria generated absolutely no royalties from bitumen while it drummed up three-quarters of a billion naira or N768.14m from limestone royalties in the same year (see table 3).



Table 3: A Matter of Royalty

CONTRIBUTION OF NIGERIA STRATEGIC MINERALS TO ROYALTY		
Mineral	Royalty N	Percentage Contribution %
Limestone	768,137,441.70	35.774
Lead/Zinc	147,694,249.50	6.878
Coal	143,235,963.00	6.671
Gold Measured in ounce	7,356,381.50	0.343
Iron ore	623,600.00	0.029
Barites	33,000.00	0.001
Bitumen Measured in barrel	0.00	0.000
Sub-Total Strategic minerals	1,067,080,635.70	49.696
Sub-Total Other minerals	1,080,135,143.85	50.304
	2,147,215,779.55	100.000

Source: NEITI, Proshare Research




The Bitumen Mines: The Roads Yet Travelled


With huge bitumen deposits, why does the country find it difficult to obtain sufficient bituminous material for large scale road contracts? The answer is an unflattering combination of public policy naivety, technical incapacity, and fiscal short-sightedness. To be sure, some more critical analysts would add the problem of *resource planning incompetence*.

The poor understanding of the local construction ecosystem and its role of fast-tracking growth in the macroeconomy leaves a sour taste in the mouth as public sector planners fail to connect the value multipliers that create the chain reactions that spur business activities and propel gross domestic product (GDP) growth. If bitumen is viewed as part of the public infrastructure value chain needed to build the road networks required to improve supply chain delivery and raise both the volume and value of domestic economic activities, bitumen mining should be considered a top priority. Tar sand should become a strategic gamechanger as an increase in the supply of bitumen would reduce the domestic cost of asphalt and accelerate rapid road construction and increase various transport sector multipliers.


The expansion in the development of bitumen is without prejudice to the increased use of concrete, a local Nigerian adage says that the sky is a sufficiently large canopy to accommodate the flight pattern of all birds. Both concrete and asphalt can live in a world of competitive harmony provided each serves as a

backstop to the quality and pricing of the other. Unlike limestone with several miners, available data from the Ministry of Mines and Steel suggest that Aspect Petroleum Limited is the principal mining license for Bitumen in the country (see table 4 below).

Table 4: Bitumen's Mining Czar

OPERATORS MINING/EXPLORING BITUMEN IN NIGERIA						
	Operator	Type	License Id	State	Number of CUs	Expiry Date
1	Aspect Petroleum Limited	Mining Lease	21411	Ondo	250	21/02/2042
2	Aspect Petroleum Limited	Mining Lease	21412	Ondo	250	21/02/2042

Source: Ministry of Mines and Steel Development, Proshare Research



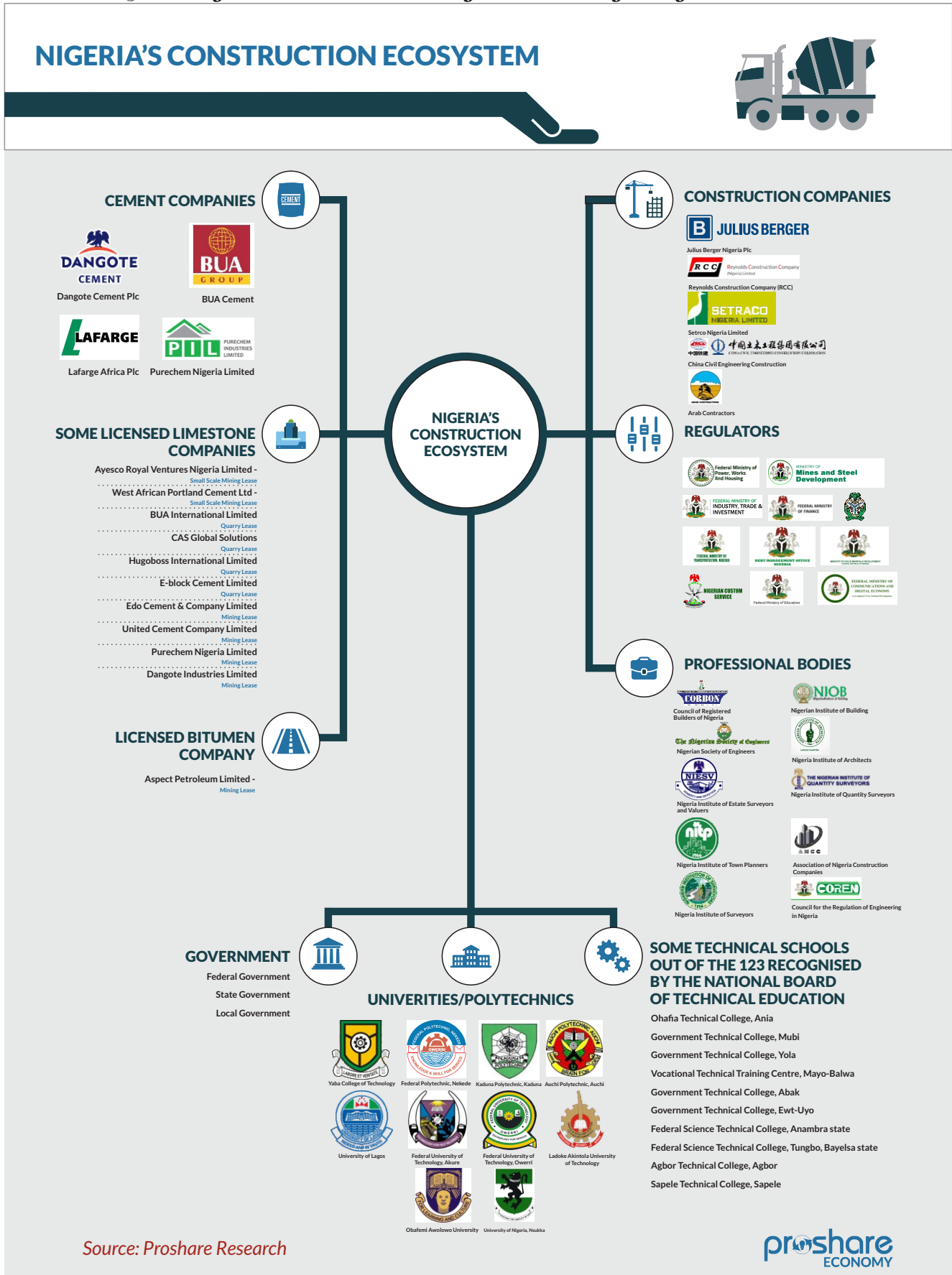
The true dilemma is on page 85, table 53, of the 2018 Nigeria Extractive Industry Transparency Initiative (NEITI) report, where the report represents that the country continues to import large quantities of bitumen despite its sizable local reserves. Poor understanding of the nexus between bitumen resources and the construction industry value chain appears to have lulled economic managers to fall asleep at the console. Rather than draw foreign and local investors into the bitumen value chain, the fiscal authorities, in their wisdom, have chosen the easier, but self-defeating, path of spending billions of naira on bitumen imports. The oddity of the policy is emblematic of the country's poor visioning and 'entitlement' mindset with revenues from oil representing a quick fix for the loose morals of those, a local economist recently described angrily as 'fiscal junkies'.

Going forward from 2021, public policy analysts observe that policymakers must take an exit from the oil sector rehab and begin to build robust local and foreign investment capacity in the bitumen sector as the construction ecosystem (see illustration 5) and its multipliers become clearer and prop up a global value chain that enhances economic growth, improves domestic income levels, and upgrades living standards.

Illustration 5 The Big Bold Construction Ecosystem -Breaking Things Down



Illustration 5: The Big Bold Construction Ecosystem-Breaking Things Down



Source: Proshare Research

Asphalt as a component of a thriving construction sector is a simple enough proposition, but what is not so easy to comprehend is the tyranny of poor public policy that blurs economic vision. The big picture is not road construction as an anchor for public infrastructure assets or public goods but road construction as an enabler of large trade multipliers.

Taking Care of the Excluded: The Smart play



Taking Care of the Excluded: The Smart play

The increased use of concrete relative to asphalt in road construction may result in a loss of jobs for those trained in asphalt road building, but this need not be a problem. Road construction has the same basic steps regardless of the material used but may require some slight retweaking of work schematics as concrete roads tend to be reinforced and require a more extensive application of labour and earthwork. The transition should not be difficult for seasoned workers in the sector. Crash training courses could be arranged by construction companies to get workers more familiar with the previous technology retrained for the new concrete road realities. Or perhaps more likely, workers will need to be trained to handle both asphalt (flexible pavement) and concrete (rigid pavement) thoroughfares.

Suppliers of asphalt can be groomed to being suppliers of cement, spreaders of asphalt could be re-educated to lay concrete and those that repeatedly patch asphalt roads could be absorbed into the construction of more durable concrete highways as the likely growth in concrete road construction would support an economy with minimal requirements for road repairs. The beneficiaries of contracts for the regular patching of roads, especially at the local government level could be absorbed into the concrete business as suppliers of cement or project monitors who earn service fees.

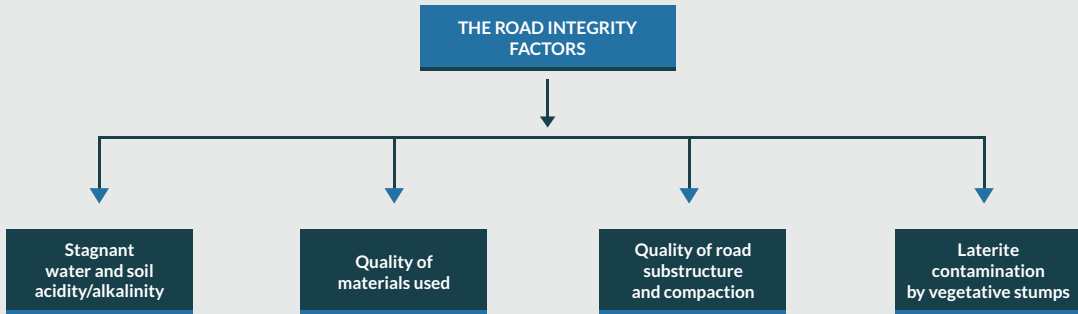
The new road construction route would need to cater for the excluded if it is to meet minimum resistance as all parties involved in the asphalt value chain would need to migrate to the preferred concrete cement technology in the southern parts of the country while still sustaining asphalt road construction in the northern geopolitical zones. Concrete or rigid pavement constructions may be desirable in northern roads that experience heavy articulated vehicular traffic, but the mix would likely favour a higher dependence on asphalt road technology. Leaving nobody behind in the rebalancing arrangement will be of critical importance to protecting jobs and ensuring that extraneous political distractions are reduced to the barest minimum (*see illustration 6*).

Illustration 6 Why Roads Fail, The Integrity Factors



Illustration 6: Why Roads Fail, The Integrity Factors

THE ROAD INTEGRITY FACTORS



Ministry of works and housing, @tundefashola during the inspection of ongoing work on the reconstruction of Apapa-Oworoshoki-Ojota Expresswas in Lagos; Tue July 28, 2020. This is one of the Executive Order 7 roads. It is being rebuilt for the first time in 4 decades – as a concrete road.

Source: Ministry of Works and Housing, Proshare Research



Looking Ahead

The future of roads is the scaling up of both concrete or rigid pavement intervention and asphalt or flexible pavement technology. But a major matter for review is the need for the cost of cement and bitumen to fall steadily to make construction cost incrementally lower as scale economies pass on cost advantages to bulk users of cement or asphalt as part of the new concrete and asphalt ecosystem.

Companies like Dangote Cement Plc, BUA Cement Plc and Lafarge Cement Plc are likely the major beneficiaries of the new concrete road initiative but because the foreign exchange component of the local production value chain is not overweight, these companies provide strong domestic value-addition. The growth in the sales volume of local limestone crushers would add much needed domestic income multipliers that could lead to an economic rebound as roads, bridges and highway construction pull ancillary businesses into faster-paced revenue growth with the accompanying job-creation opportunities and improved corporate bottom lines.

What happens in the near-term will depend largely on the government's political will to start building durable roads by the use of concrete in addition to asphalt or flexible pavement technology, the problem is not the economics but the politics of road construction where built-in legacy interests frustrate change. The difficulty of using new paradigms to address old problems can explain the nexus between socio-economic success and failure. Sometimes to stand out, one needs to stand alone, Nigeria's fiscal authorities must be prepared to stand alone to do what is right for the country's future, and this may involve the economically unconventional or the politically expedient.

At this point, the critical consideration in the design of value-creation touchpoints that propel growth in entrepreneurial activities along newly-created highways, whether asphalt or concrete is enterprise. The essence of roads is not the structures of themselves but the facilitation of business expansion by use of the roads to move goods and services safely and efficiently across regions and markets.

A Need for Reviews

A review of the state of the construction sector in Nigeria, particularly road construction requires professional bodies such as the Nigerian Society of Engineers (NSE) and the Council for the Regulation of Engineering in Nigeria (COREN) take a fresh look at their professional/technical guidelines and rules of professional practice and conduct and upscale interventions needed to keep the local engineering profession with the requirements of global best practices. An example of where NSE needs to intervene is the increasingly common practice of road engineers constructing asphalt road surfaces before road shoulders, the practice has led to the diminution of road integrity in some projects as the joints between the shoulders and paved asphalt surfaces crack routinely.


Another area of concern is the poor quality of compaction of road substructures. The weak preparation of road substructures tends to compromise the integrity and durability of the roads within a short period. The NSE and COREN need to restore dignity to the profession by ensuring that minimum best construction practices are reflected in roads supervised by local engineers. The Nigerian engineer needs to take pride in the quality of his or her craft rather than the next cheap buck that could lead to an uncomfortable 4 by 4 room with locked iron bars and occasional visiting rights.

Going forward if the concrete construction option is seen as superior to the asphalt alternative on a long-term cost-recovery basis then it would be important for contractors and road engineers to understand that for road projects to represent a stream of viable business opportunities over time, the type of construction technology chosen would be critical to the predictability of cash flows and cost-to-return calculations. Good civil engineering is not about the quick buck but about the creation of value that leads to the formation of more value.

Nigeria’s policy planners may need to decide on a mixed-development approach to road building. Roads that experience heavy traffic and deadweight tension would be constructed using a concrete construction option while roads with lighter traffic and lesser vehicular carriage are constructed with asphalt technology subject to proper substructure preparation. The asphalt option, however, would not be chosen in marshy areas or areas that tend to be waterlogged. The implication is that both asphalt and concrete roads will have their places in the scheme of things, but concrete roads would be the default option for national and state highways and within states that experience heavy annual rainfall (see table 5 below).


Table 5: Concrete Vs Asphalt - A Driveway Comparison

IN THIS LANE: DRIVEWAY COMPARISON



	ASPHALT	CONCRETE
COST	Costs less, Starts at about \$2 to \$5 per square foot of driveway.	More expensive: \$3 to \$10 per square foot. Decorative elements drive higher.
CURING	Can drive on asphalt almost immediately.	Conventionally it is expected to wait for seven days before driving on it
UPKEEP	More maintenance, but it’s easier to do.	Less maintenance, but repairs more difficult
CRACKING	Easier to repair, Cracks and holes can be filled and sealed.	Patching more obvious; may need expensive repairs.
WEATHER	Shrinks and expands with temperature changes.	Cracks under extreme pressure or surface movement.
OIL AND GAS	Oil leaks not as noticeable, but gasoline will cause damage.	Gas and Oil spills leave more obvious stains than on asphalt.
LONGEVITY	Up to 20 years	Up to 30 years

Source: Proshare Research



However, competing Asphalt roads would do well in the northern part of the country with savannah plains and lesser annual rainfall than the south. Engineers have argued that Asphalt roads with tar heated up to 150 degrees centigrade are tolerant of high temperatures and can cope with the higher temperatures of the north compared to the lower temperatures of the south. Concrete roads would probably do less well in the north than in the south as they cope with road tension better than compression, making asphalt roads the preferred option in hotter climates. The hot weather predominant in northern Nigeria would not likely compromise asphalt road integrity as has been noticed by the durability of asphalt road construction in places like Abuja FCT and the northern states of Kano and Kaduna.

The Case For Better Road Management-A Place For Etiquette

Apart from construction quality, a large problem associated with road failures in Nigeria is how roads are used or road etiquette. The abuse of highways by users has had a significant impact on the rapid deterioration of roads in the country. A few practices that have damaged roads quickly include, but are not limited to, the following:

- 📍 Police highway checkpoints using the burning tyres and black oil on road surfaces are a nightmare for roads and highways. These practices corrode highway surfaces and accelerate road deterioration.
- 📍 The deadweight carriage of articulated vehicles parked on highways with regular oil drips seeping into road substructures and travel surfaces allow road usage-practices that damage the roads and create the need for periodic short-term repair works.
- 📍 Regular fires caused by leaking oil tankers that ply major highways lead to damaged road surfaces, a classic example is the Kara section of the Lagos-Ibadan expressway and the damages done around the Otedola bridge section along the Lagos State Secretariat-Berger section of the expressway en route Kara and the outbound Lagos-Ibadan expressway. The regular combustion of tankers and articulated vehicles at these points have had bruising consequences for outbound vehicular traffic from Ojota in Lagos through Kara in Ogun State.
- 📍 Concrete groyne barriers that are erected to divert traffic and provide an opportunity for makeshift checkpoints further destroy the quality of road surfaces and lead to the abuse of roads by law enforcement authorities (police and the Federal Road Safety Corps (FRSC)).
- 📍 Lining up articulated lorries and oil tankers along major highways destroy **road quality as low-grade black oil seeps onto road** shoulders and damaging road surfaces by way of inward erosion.

The broad policy requirements needed for better road management would include, but would not be limited to, the following measures:

- 📍 Police checkpoints would no longer involve the burning of used tyres as night flares.
- 📍 Checkpoints would involve the use of plastic barriers made with reflective material filled with water.
- 📍 All articulated lorries, trucks, trailers and tankers must park at terminals/depots rather than along roadsides or highways.
- 📍 Trailers, lorries, and trucks would not be allowed to park at petrol filling stations. The fine for violating the no parking order would range from N200,000 to N1m and or six months imprisonment for the driver. The fine would be based on a 'three-strike' rule. The rule would

mean that fines would escalate based on the number of times a vehicle and its driver commit an offence. After three infractions, the vehicle would be confiscated and the driver's license would be withdrawn.



Drivers of articulated lorries, trucks, trailers and tankers must undergo annual tests to certify mental and physical fitness to drive large vehicles over long distances. The test would require knowledge of old and updated traffic rules and guidelines. The review would include understanding road signs and signages and road furniture.



The FRSC would monitor highway speed violation, reckless or poor driving behaviour and commuter distress at steerings. FRSC teams could have team members that provide first responder medical attention in the event of a road accident before the victim(s) are transferred to

The Road To A New Normal

In creating the road architecture that fits Nigeria's socioeconomic aspirations, the end game is not good roads but commercial competitiveness. Good roads are not an end but the means to the more important objective of facilitating efficient and effective transportation of goods and people. Planning national road infrastructure is a strategic imperative that imagines byways and highways of goods and services crossing the country in a symphony of coordinated chaos that leads to economic value creation.

The concept of roads as stand-alone trophy projects is naïve. The essence of roads in the domestic distribution matrix is the creation of economic value along vertical and horizontal value chains. The greater the efficiency of transport distribution pipelines the more competitive an economy gets and the better its chances of raising the living standards of its citizens. For example, Nigeria's domestic food value chains rest on the quality of interstate road networks; the poorer the quality of roads the higher the cost of transportation of farm gate produce to urban centres and the more difficult it becomes for Nigeria to become an efficient and cost-effective supplier of agricultural produce to the African continent. To thrive in a world of the **African Continental Free Trade Agreement (AfCFTA)**, Nigeria must find ways of improving the movement of goods and services within its borders and expanding value distribution to neighbouring African states. The vision ought to be to make the country the entrepreneurial intersection between the Maghreb and sub-Saharan economies.

If the government is keen on promoting increased agricultural production it must have an integrated road development plan that links farm gates to city malls, and urban technology to rural opportunities. Developing agricultural communities in silos will fail. Evidence-based research leads to the conclusion that rail and road transportation remain vital to an integrated network of thriving agricultural communities. Good road and rail networks are the crucial arteries that keep modern economies alive and well; finding the funding for the roads and rails and ensuring that these infrastructures are kept in proper shape requires a thought process beyond the majestically simple.

The new realities of global competitiveness suggest a shift in thinking and a beating down of stubborn old perspectives. Glocal is the new normal as nations increasingly build their domestic economies to take on external competitive opportunities and tackle nascent challenges. CK Prahalad and Gary Hamel in their best-selling book **Competing for The Future** noted that "failure to anticipate and participate in the opportunities of the future impoverishes both firms and nations". They observed that "...there is no way to create the future, no way to profit from the future if one cannot imagine it". Imaging the reality of road and rail value chains remains central to Nigeria's easing into an economy that instinctively and productively builds road networks that construct gateways to larger cycles of local and international cash

flows. China's belt and road programme exemplify the enormous possibilities of highways and superhighways if policymakers throw their hearts over the bar and allow their bodies to follow.

Seeing tomorrow's possibilities today is not a choice but a requirement for global relevance and proper governance. Ofosa Ojomo, a lecturer at Harvard and a close collaborator of the late Professor Clayton Christensen (who he jointly authored the best selling book, *The Prosperity Paradox* with Karen Dillon) noted that "The job of a CEO is to imagine a future better than the current one and take the company there. It's not to simply manage operations/growth. I reckon many people can do that". Public sector leaders need to learn this private sector lesson and realize that one of their greatest responsibilities is to imagine a better future and take society there. Running operations is the responsibility of managers, not chief executive officers (CEOs).

...Of Public Assets and Concrete Aspirations

Nigeria's fiscal authorities have been trapped in a cash flow mindset that avoids looking at redundant public assets and the financing opportunities that can be created either by way of asset securitization or asset sales. The story is like that of a man heavily indebted to several local banks, but living the life of his dreams in a monstrously large mansion in Banan Island, Lagos. The smart play would appear to be to sell off the Banana Island building and pay off the loans while buying a relatively modest accommodation at Magodo in Ikeja. The rich Nigerian would see this option as 'beneath' his status and so he would prefer to wait for the **Asset Management Company of Nigeria (AMCON)** to obtain a court order to seize the Banana Island property and throw him out. The court-ordered payoff, for some reason, appears to be a more desirable or dignified option for the average local 'big man'.

The queer debtor behaviour of the Nigerian is the same as that of the country's fiscal authorities. Rather than draw up a list of redundant public assets across the country and schedule them for sale as global liquidity continues to rise on the back of huge international COVID-19 stimulus measures, the fiscal authorities have preferred to take a 'socialist' perspective of idle assets. The sale of public assets has proven to be a touchy matter and has pitted the guardians of the old 'communal asset' school of thought against the newer liquidity and value creation school.

A few economists (such as Dr. Ayo Teriba) have argued that the government can liberate huge cash from idle public assets and can use the money raised by this means to fund major infrastructural projects. The expansion of GDP (currently at a growth rate of **+1.87%** as of Q1 2020) would spur advance in road infrastructure which in turn would increase taxable income from a rise in commercial transactions and attendant tax obligations (VAT, WHT, CIT and PAYE) and close up the budget deficit and trim off the nation's debt service-to-revenue (DSR) ratio.

Improving roads is not about aesthetics as it is about ramping up commercial possibilities at a continental level and improving the country's fiscal and trade balances. Upscaling the quality of road infrastructure by fresh capital inflows into road construction would prep the economy for a post-COVID-19 economic expansion and a V-shaped economic recovery by 2021.

Final Words

The battle between concrete and asphalt is phantom. Both road technologies are needed but in different parts of the country and for different reasons. Concrete (rigid pavement) roads need to be built to service the challenges of southern topography and geology while some roads may tolerate asphalt solutions in the south, the same alternative considerations would be appropriate for northern roads with a dominance of asphalt interventions speckled with some concrete highways.

While appropriate technology is important to optimize the net present value of roads, but beyond technology-application is the wider consideration of the optimization of road interconnections to deliver an interlocking beltway of economic activities that use high-grade roads as platforms for movement of people and goods within the fastest possible time without compromising safety. The economic payoff of roads goes beyond the simple issue of durability and relative costs and speaks to the deeper issues of internal and external trade multipliers, job-creation and fiscal revenues that surf the cycle of faster-paced GDP growth.

An unmentioned part of the concrete and asphalt road value chain that has been conveniently ignored is that original equipment manufacturers (OEMs) should be made to set up plants in Nigeria initially for light-manufacturing of construction equipment parts and then progressively to the manufacture of heavier-equipment to further internalize the local construction value chain.

Nigeria's road infrastructure deficiency easily guarantees OEMs construction activities of between 30 and 50 years. The long-term nature of continuous road construction in the country should enable the country to negotiate better terms with OEMs for the location of manufacturing plants in Nigeria.

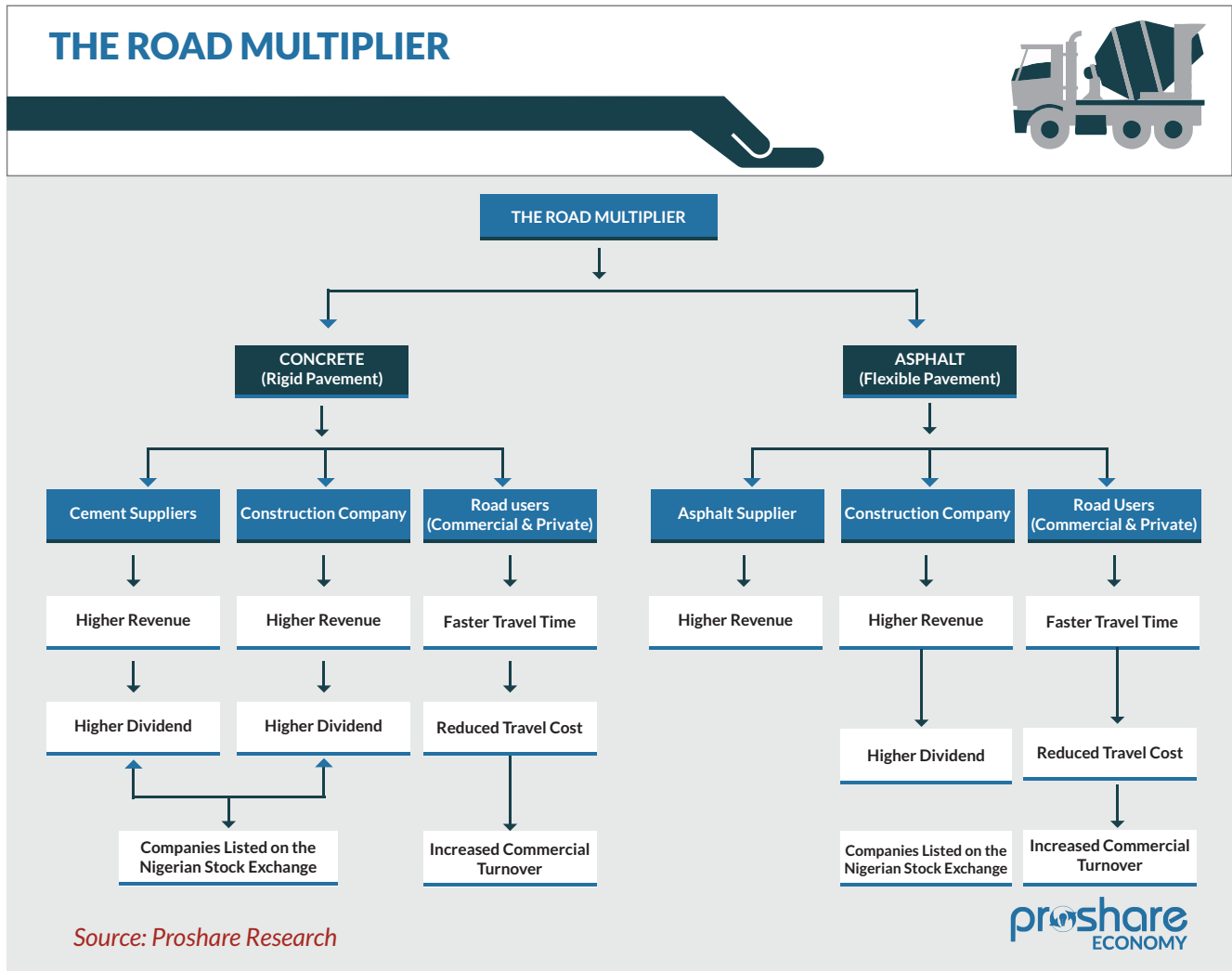
Nigerian public sector leaders appear to be victims of the *Stockholm syndrome*; as they fall serially in love with their economic captors. The thought process of Nigerian policymakers needs to be centred on economic growth propelled by local manufacturing that serves as part of a vertical domestic value chain. COVID-19 has demonstrated that dependency on foreign supply chains could be dangerous and disruptive at times of global socio-economic crisis. There is a need for upscaling domestic manufacturing by committing OEMs to bring plants to Nigeria rather than exporting equipment to the country. Perhaps over the long-term, Nigerian mechanical engineers and metal fabricators will need to be given research grants to design and fabricate home-grown construction equipment, thereby, creating deeper local construction value chains and high and middle-level engineering jobs.

Concrete vision and asphalt competition set the tone for a new road industry paradigm. The bigger picture is an interlacing network of both rigid and flexible road pavements that create a national road transport grid that delivers value multipliers across multiple economic sectors (*see illustration 7*).

Illustration 7 The Road Value Multiplier



Illustration 7: The Road Value Multiplier



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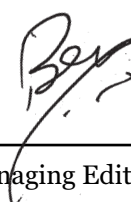
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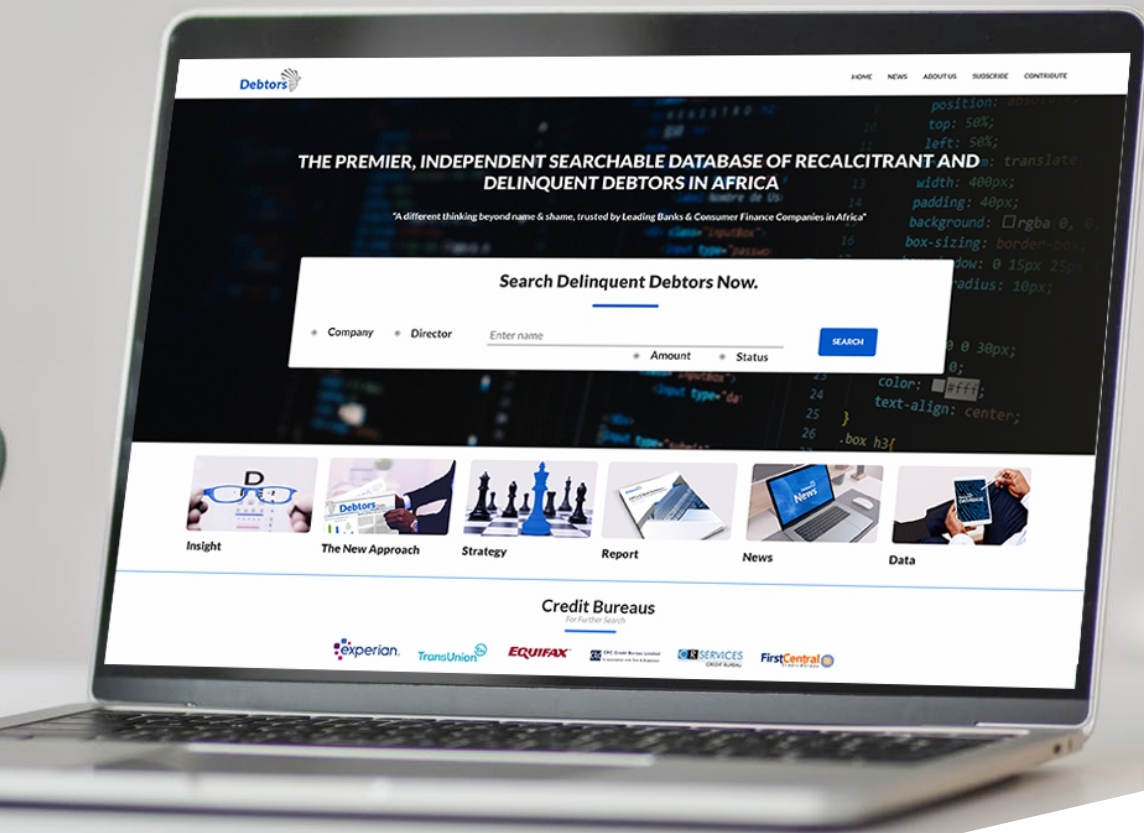
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