

Infrastructure Challenges of Nigeria: Financing and Policy Options

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Abstract

The current state of infrastructure, or lack thereof, in Nigeria has hampered economic development on many fronts. Economic development of any country is proportional to the degree of investment in infrastructure. Funding required to bridge Nigeria's infrastructure gaps has been identified a major concern but more important is the attendant political will of government to channeling funds to meaningful development programs at the same time understanding the importance of accountability in ensuring such investments are followed through (quality, cost and schedule). The paper attempts at offering solutions to funding constraints while raising awareness of the importance of the right government policies on infrastructure steered politically and strategically to a collective and beneficial end.

Key words: Infrastructure and Economic Development; Financial Instruments, Pension Funds

Nigerian National Context

Nigerian economy

Nigeria economic performance over the past two decades can be described as one yet to hit its full potentials. Nevertheless, the economy is deemed by analyst to be strong and one of the fastest growing economies in the world. Despite this, there are challenges which tend to portray it non-inclusive and unequal. Though GDP growth has recorded an average 6.5% in recent years (NBS) or 7.2% (IMF), there remain many factors that inhibit performance to its full potential. Dearth of infrastructure remains a significant and paramount contributing factor precluding the diversification required of the economy to excel to its rightful place on the world stage.

The structure of the economy predominately revolves around agriculture and oil & gas. In 2011, the oil and gas sector accounted for 79% of revenue collected at federal level and 71% of export revenue (AfDB, 2013). Nigeria's GDP is estimated to be over \$570 billion placing her above South Africa as the largest economy in Africa and 21st largest economy in the world. Agriculture accounts for 41% of the nation's GDP despite infrastructure, production inefficiencies, and market support constraints.

Infrastructure in the context of an economy enabler, contributes to development by increasing productivity and providing amenities which enhance the quality of life. Services generated as a result of adequate infrastructure have exponentially positive impacts which ultimately translate to an increase in aggregate economic output. Though economists constantly debate the varying extent and speed to when such outputs are realized, it's hard to fault the immediate realization of investments in services such as: roads, electricity and water have on externalities that drive economic growth. Suffice to note and qualify infrastructure, given its input to raising productivity by stimulating aggregate supply and demand, is one sub-sector of an economy considered an unpaid factor of production. Nevertheless, ignoring investment in this sub-sector comes at great price to the development of any country.

Infrastructure Performance

Nigeria Current Infrastructure Base

According to Nigeria National Bureau of Statistics, Construction accounted for 1.7% of GDP in 2007 and 1.95% of GDP over the last decade. The contribution to GDP is meager when compared with other developing countries (e.g. South East Asia countries). According to a 2007 KPMG report citation, an Asian Development Bank (ADB) study concluded that investment in infrastructure should contribute a minimum of 6% of GDP in order for developing economies to sustain annual growth rates of 6%. This is well in excess and a far cry of Nigeria's current (annual) sector-specific contribution of 1.7% of GDP.

Gap Analysis: Nigeria vs Asian Countries

Further analysis suggest Nigeria, in comparison to the likes of S/East Asian's countries, puts the country years behind realistically in attaining strides towards meaningful development. To bridge the gap - using various time series data and regression analysis - infrastructure spend (as a percentage of GDP) must increase to 18% of GDP over the next 15 years and 24% over 10 years (Akinyosoye, 2010). The above implies Nigeria's contribution to infrastructure spending will need to increase by a factor of 9 in tangible spend or a factor of 12 to attain economic levels of S/East Asian counties over the next decade. Assessments above are further supported by a 2011 World Bank Report [(Foster & Pushak, 2011) which states: Nigeria's infrastructure challenges will require sustained expenditure of almost \$14.2 billion per year over the next decade, or about 12% of GDP. As a point of note, China spent 15% of GDP on just infrastructure investment in the mid-2000s) (Foster & Pushak, 2011)

Such a feat will require significant investment by government running into billions of US dollars. Given current government funding constraints, this becomes a huge challenge. Dealing with Nigeria's infrastructure decay therefore poses huge financial challenges on the nation's public coffers. One that is likely to persist without appropriate level private sector participation. The Federal Government in realizing its limitations inaugurated the Infrastructure Concession and Regulatory Commission (ICRC) in 2008 to aid and accelerate investments in Nigeria's infrastructure through private sector participation. Much however is yet to be realized in tangible outcomes as a result of this.

Global Infrastructure Outlook

Global economic problems of 2007/2008 left a bitter taste in the mouths of investors in general. A repeat is likely to occur in 2016 as result of global slowdown of economies worldwide. Learning from the 2007 / 2008 crises, many became risk averse towards long term investment opportunities opting for more conservative short term opportunities. Institutional investors in the infrastructure market showed little or zero interest in this sector. On the back drop recovery in 2010, investment appetite was on the ascendency. The proverbial light at the end of the tunnel, so to say, was encouraging yet again. However, recent slowdown in global economy, especially amongst resource rich countries (Nigeria inclusive), continues to put at risk such investment worldwide.

Learning from the 2008 crises, according to *Infrastructure Journal* report: Fig 1 shows the total value of closed infrastructure deals peaked in the second half of 2007 at about US\$140.5bn but declined rapidly during the financial and economic crises to a low US\$84.4bn in H1 2009. Ascendency in investments was however observed by H2 2009 with even better result in 2010 and beyond.

Projects in areas relying on high volume usage, such as toll roads and airports, have been hit hard by the downturn in GDP. Investors in infrastructure, even amongst emerging economies – especially the developing BRICS (Brazil, Russia, India, China and South Africa) are not only faced with investment specific viability drivers but are also challenged by other equally complex and often nonlinear existential strategic risks.

According to a 2010 academic research (Akinyosoye, (O, 2010), internal risk factors (i.e. organization risk perception) when evaluated alongside external risks factors (i.e. economic instability, political and legal risks) aimed at understanding the degree to which they impact decision making. When summed up they bring a whole new amplified dimension (real and perceived) to how risk and opportunities are perceived (ibid). Such strategic risk factors influencing investment decisions could be addressed in many ways: one, simplistically put, is providing a more conducive investment climate and introducing incentives (i.e. tax breaks) over extended periods.

Infrastructure Demand and Opportunities

Demand for infrastructure is driven largely by economic and population growth. Looming energy crises and environmental factors are other but less pertinent reasons. Though many governments (not unique to African) struggle with funding and procurement strategies aimed at addressing growing demand. In spite the challenges, fundamental to this is having an underlying national policy able to channel resources accordingly.

An OECD report outlines the need for such investment underpinned by policies. To support fiscal stimulus or improve capacity of ailing economies, sector investment requires political will.

EU member states, including the US, committed several billions of US\$ in the form of stimulus packages to infrastructure rehabilitation and transportation redevelopment. Input to such decision-making was the recognition of the impact of short term investments to economic recovery while understanding derived benefits on long term goals.

Though at the time, focus was geared at pulling ailing economies from total collapse; other derived benefits included:

- Increasing demand for air transport: Global air transport is expected to reach 7 billion by 2020. With current capacity at over 6 billion, a shortfall of 1 billion necessitates additional infrastructure at the earliest possible time.
- Increased seaborne trade: Global seaborne trade has doubled since the mid-1980s and this growth has begun to stretch current port handling capacity. Container traffic is expected to grow 8% per annum well into 2020. Investments required to build new capacity globally have been estimated to be around US\$73bn.
- Rail and Road: OECD has identified 'bottlenecks' for freight capacity in North America and parts of Europe for example. This has led to restrictions on capacity to provide freight supply to some regions. These issues if left to persist will only get worse, impacting quality of life and ease of trade.

Given above, its evident future demands will certainly outstrip supply in many areas if action is not taken immediately. Nigeria and many other African countries are equally faced with such realities and the need to act is immediate.

Infrastructure Assets

While traditional infrastructure is seen more for its physical characteristics, transforming natural environments to meet human needs; economist tend to view infrastructure differently, defining them more along their input to aggregate output and standards of living.

Infrastructure, as stated earlier and defined by social-economists, are instruments considered to be factors of production, increasing aggregate output and driving economic growth. From a development stand point: they are seen to improve average living standards and foster productivity and production.

The two predominant asset classes are:

- Economic Infrastructure: Utilities (water, sewage systems, power); transport (toll roads, airports); communication (telephone etc) and renewable energy.
- Social infrastructure: education facilities, health (hospitals); security (prisons); and recreation (tourism parks etc)

Financial industry analysts however have a different approach to viewing infrastructure. While they emphasize certain commonalities with economists, they often stress the limited competition. Other views and characteristics recognized include: high entry barrier; inelastic demand; long duration (concessions 30 years; leases 99 years).

From the foregoing the financial sector and investors however view a number of favorable investment characteristics must be met for investment. Some of which are summarized as follows:

- Stable and predictable cash flow
- Long term income streams
- Return insensitive to the fluctuations in business, interest rates and stock markets;
- Relatively low default rates

With this in mind, many investors vary in their views of infrastructure being an asset class worth investing especially in Africa

Types of Infrastructure

Certain types of infrastructure have been known to however be more resilient to economic shocks than others. The Utilities sector is considered less likely to be affected by economic cycles especially when consumption patterns are unaffected. Others include: transportation, 'green' investments and those aimed at replacing traditional energy sources.

While transport, power and renewable energy were clear leaders in growth prospects, these sectors have experienced turbulent track records over the last five years as illustrated in Fig 1. This however was largely driven by the economic down turn of 2007/2008 and not necessarily due to demand constraints.

The transport sector (Fig 2) shows elements of strength amongst PPP infrastructure investments on a global scale. According to *Infrastructure Journal*, spending on transportation amounted to two-thirds of all global infrastructure PPP investments as at 1H 2010 figures; demand, on the other hand provided a firm basis for onward investments.

Figure 1

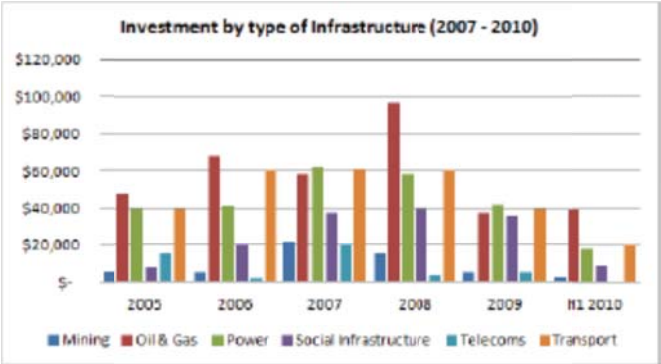
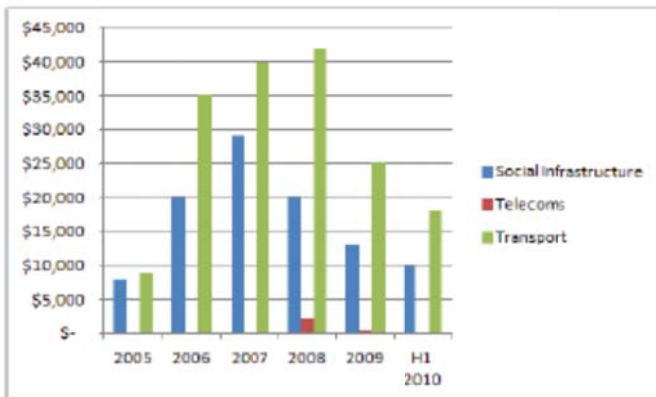


Figure 2: PPP by sector type (2005-2010)



Source: Infrastructure Journal, Global Infrastructure Finance Review 2010

Global Threats to Infrastructure

Amongst developed countries, government funding has decreased and financial constraints have impacted ability to move projects forward.

Expert assessments of economic crises on future (infrastructure) investments vary widely. Pessimists expect funding to diminish over the next four to five years. Others view, in spite concerns, funding potential for PPP and PFIs remain strong. Money can still be found for the right projects. Either way, heightened scrutiny and prioritization of infrastructure is expected which means only bankable projects will attract funding giving the right economic and political climate. State governments therefore have a vital role to play in addressing such risks.

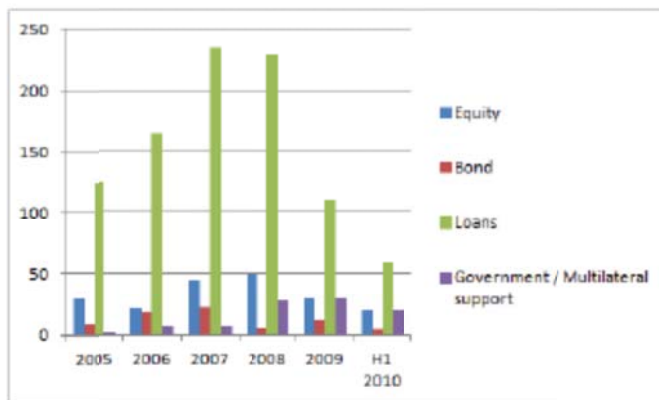
Political appetite of governments need be evident through having the right underlying policy while supporting infrastructure investment strategies aimed at attracting investors. As mentioned earlier, incentives (e.g. tax holidays) to attract flow of capital is essential.

While recent trend amongst national governments continue to demonstrate a measured approach to infrastructure investments, this needs to be balanced through alternative funding strategies. More than likely, government roles will continue as such while gradually changing from one of project funder to that of project initiator.

Emphasis is gradually shifting, and likely to remain so over the long term, towards the private sector, nevertheless, the expectation that governments will play less active role in financing is not shared by all.

In spite the number of infrastructure deals that reached financial closure fell in H2 2007, majority of such deals were funded by government. Government participation actually grew from less than 2% in 2007 to nearly 18% H1 2010 (Fig 3) (Paisner, 2010). This is however not an indication of lack interest in private sector financing but had more to do with stimulus funding by governments to shore up global economic resuscitation.

Figure 3: Sources of Funding (2005-2010)



Source: Infrastructure Journal, Global Infrastructure Finance Review 2010

Infrastructure Performance – Past to Future

Sampled expert opinions (private sector) see investments in infrastructure to be reliable with moderate levels of return on investments. Telecommunication infrastructure is generally seen to exceed expectations due largely to its relatively small capital outlay and potential high returns. Alternatively projects that rely on high volume of use (i.e. roads) have not performed as well due to overarching GDP declines. Investor experience on toll roads and airports have been cited to be reasons why projects, based on availability of regular onward payments from governments rather than user demand were gradually seen as better prospects for stable returns. However, indications suggest these sectors are adversely affected by political bias towards alternative forms of public transportation investments.

While there has been mixed views on the performance of various infrastructure assets amongst financial experts, one cannot but acknowledge the potentials that lie therein. Assessments investigated delineated performance over two fundamental driving principles:

- (a) The ability for infrastructure to offer modest returns on investments in comparison to other competing investments classes (e.g. bonds, stocks, cash etc)
- (b) Consistent long-term revenue stream amongst some institutional investors like pension fund managers where a harmonic chord is required between investment outlook strategies and long term liabilities of pension plans.

With ever growing need of various governments to meet their infrastructure development / maintenance obligations, more efforts are going towards attracting the private sector into these relatively new investment classes.

With several successes recorded in recent past in countries like Australia and Canada and more recently amongst South East Asian countries with the adaptation of PFI/PPP procurement options, the future

continues to look bright for more private sector participation. With growing innovation in financial structuring, investments will only continue to follow existing trends in the years to come.

Pension fund managers in Canada, for example: OMER – Ontario Municipal Employees Retirement System), have several billions of Canadian dollars invested in infrastructure through its subsidiary Borealis Infrastructure set up in 1988. Ontario Teachers’ Pension Plan (OTPP) is another example (Inderst, 2009). The US Pension fund, CalPERS, adopted a new investment policy of assets which today boasts of US\$7.2bn in infrastructure securing returns upward of 5% above inflation (ibid).

RREEF (investment managers) estimate the current value of the global infrastructure market including public and private sector to be around US\$10 – 20 trillion. European economic infrastructure is valued at €4 - €5 trillion. This is comparable to European stocks of €8 trillion, bonds €11 trillion and commercial property €5 trillion (ibid).

With the like of UBS, the investment bank, starting a Global Infrastructure Index in 2006 (calculated by S&P), many institutional investors now have access to tools to benchmark infrastructure investments pools against others to gain better understanding of risk / rewards they (infrastructure investments) bring relative to other asset classes. Widely acknowledged that the private sector is better at managing funds and appreciating the fact that many state governments are moving away from providers of infrastructures to purchasers, the future looks bright for institutional investors given the huge market potentials.

At the early stages of global infrastructure boom, return expectations were often estimated at about 15% / annum. The Australian market was a good example of markets that saw such returns according to Mercer, 2005. JP Morgan Asset Management went further: they estimated internal rate of returns for various categories of infrastructure ranging as follows:

Table 1: IRR of Infrastructure Sectors

No	Infrastructure	Internal Rate of Return (IRR)
1	Toll Roads	2 – 8%
2	PFI / PPP	9 – 14%
3	Airport	15 – 18%
4	Broadcast Networks	15 – 20%

Above table averages out at about 10 – 15% (Quadrant, 2008)

A risk profile review of infrastructure placed its inherent volatility between that of equity and bonds. The asset liability model used by Morgan Stanley Investment Management compares five main asset classes. It puts infrastructure (volatility 7.9%, return 9.3%) second only to bonds (4.4%) in terms of expected volatility and second only to private equity (10%) in expected returns (Inderst, 2009)

In comparison with other asset classes, infrastructure – over a ten year period – returned annualized figures of 9.5% placing it second behind private equity (11.3%). Other similar comparison returned the following results: stocks (9.0%); bonds (5.1%) and cash (3.7%).

While there are no established and widely accepted benchmarks for infrastructure investments geared towards decision-making, there are a number of empirical benchmarks used amongst investors, some of which include:

- Absolute return figure averaging 9%
- Inflation plus margin (e.g. CPI + 5%)
- Bond yield plus margin
- Bond index plus margin

Declarations of the global trend by analyst speak volume of the opportunity that lie therein in this investment class. Many continue to take advantage of above data and risk assessments in guiding decision-making pertaining to investments in infrastructure.

With global trend encouraging more private sector participation in infrastructure investments and government relaxation on (investment) guidelines and taxes, the future remains bright and strong in this asset class.

Nigeria's Infrastructure Outlook

State of Nigeria's Infrastructure

Assessing the country's infrastructure could be described meaningless in the absence of bench marking. The assessment carried out is in comparison with other African countries considered lower-middle income economies (GDP per capital of \$1,006 - \$3, 975); Nigeria with a GDP per capital of \$2,500 falls into this category.

Overall and relative to other African countries, Nigeria is considered to have a fairly developed infrastructure backbone. Few areas remain unconnected to the national road network and they are largely concentrated in the central west and eastern parts of the country (Foster & Pushak, 2011). In spite of the backdrop of a good backbone, road network conditions are quite patchy adversely affecting national connectivity (ibid).

Infrastructure in Nigeria, like many other countries, is largely sub-divided into two categories: economic (transportation, power, water etc) and social (schools, hospitals etc).

Despite receiving a relative decent pass mark, compared with other African countries, more is required to get to desired levels to underpin true economic development. The right level of investment is therefore required.

Given the wide range of discussion points, investments in Nigeria's infrastructure will be limited and focused on those that attract economic returns. For this reason investments in infrastructure, regardless of the country (Nigeria or otherwise), is aimed at Pension Fund Managers (PFMs) and the opportunities that lie in infrastructure as investment class. For the sake of discussion purposes, focus will however be on Nigeria.

Road

As stated earlier, Nigeria has well established and developed road network. Paved and unpaved network are twice as high as those of the peer group of resource-rich African countries (Foster & Pushak, 2011). Nonetheless, due to lack of maintenance, some of the high traffic roads are in a state that require urgent repairs.

Challenges

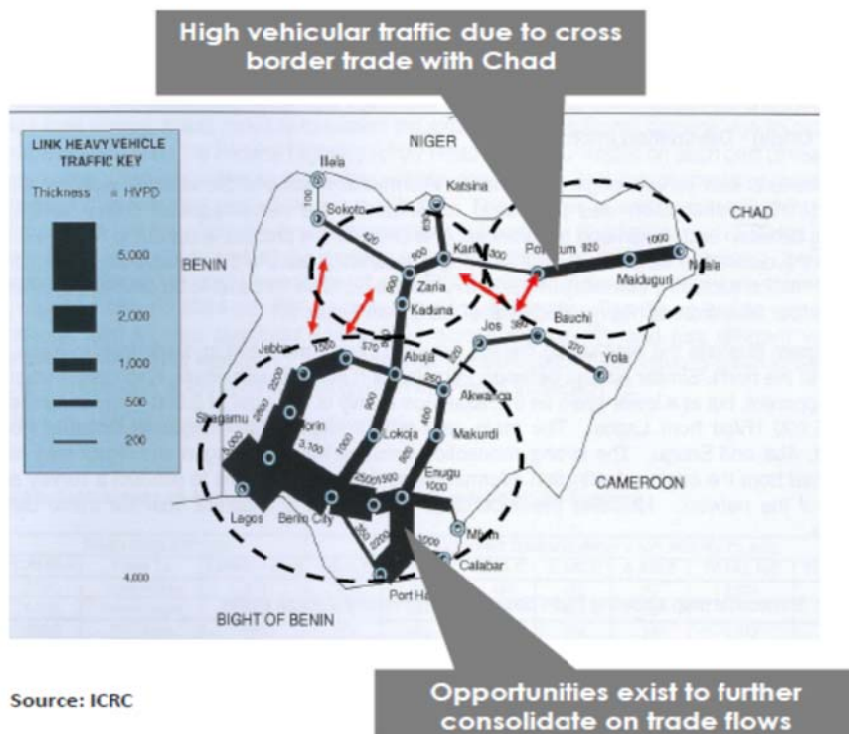
Nigeria's classified road network is estimated at 85,000km. Their physical state, however, is well below that expected to engender development to the level desired.

Nigeria's Federal Road Maintenance Agency (FERMA) is saddled with the huge responsibility of maintaining federal road networks. Though a laudable initiative by government, their operations and execution philosophy are less than optimal. Many of their staff, systems and processes are entrenched in current public sector norms and considered inefficient.

A review of the road sector indicates Nigeria has only 67 percent of its paved roads in fairly good conditions in contrast to 33 per cent for unpaved roads. Summed up, all these support the notion that roads are generally under maintained in the country.

Road maintenance and rehabilitation is largely funded via more traditional forms (i.e. government). Like many African countries, Nigeria has revenue generating schemes (road tax, fuel levies etc) designed to fund road programs.

Figure 4: Nigeria Road Trafficability Map



Source: ICRC

Source: ICRC

Largely due to government inefficiencies there is the general view more can be done through private sector participation in building net-new roads as well taking ownership and maintaining some existing ones.

It is estimated Nigeria spends \$700 million annually on road construction and very little on road maintenance. According to the World Bank, Nigeria needs to spend additional \$580 million annually to complete pending rehabilitation and future periodic maintenance (Foster & Pushak, 2011). The foregoing suggest tremendous opportunities for private sector participation in light of government funding short falls could make much of difference.

Opportunities

Though emphasis of analyst and investors have always been towards infrastructure that offer good rates of return (i.e. high trafficable roads), there are equally attractive opportunities worth exploring in the area of less trafficable corridors.

Nigeria's rural population accounts for 80% of the country's agricultural output. That said, economists will argue in favor of linking rural roads to the national road networks to aid evacuation of agricultural produce. This will further enhance current contribution to the country's GDP. To provide just 75 percent of the rural population with all season road coverage will require extended classified network by 20,000 km. To achieve this, rural road development must be aligned with agricultural policies underpinned by investment incentives to attract private sector finance or re-prioritize government with a view of focusing road development in such areas while granting private sector control to more trafficable corridors. This would be a collaborative effort at meeting such strategic objectives.

Table 2: Road Opportunity Table

Opportunity	Description
Opportunity 1: Intra-State Roads	<ul style="list-style-type: none">• Major commercial hubs• Financing of roads within major commercial hubs in the country i.e. Lagos, Abuja, Ibadan, Port Harcourt
Opportunity 2: Inter State Roads	<ul style="list-style-type: none">• Interstate roads connecting major commercial centers and small towns together• Mostly federal government roads
Opportunity 3: Cross Border Roads	<ul style="list-style-type: none">• Roads leading to borders of other African countries e.g. Cameroon, Chas, Niger and Benin
Opportunity 4: Rural Roads	<ul style="list-style-type: none">• Hinterland roads connectivity to backbone network

Power

At a glance Nigeria by year 2003 had electrified over 50 percent of its population; slightly ahead of the peer group of resource-rich countries. Given this feat, Nigeria is still faced with tremendous power supply problems with demand outstripping supply by a ratio of 2:1.

Challenges

The economic impacts of Nigeria's power deficit are substantial. According to surveys, Nigeria is affected by power outages more than 320 days in a year. A level many more times higher than those found in other African countries. Formal private sector revenue loss due to power outages are estimated to be in the neighborhood of 10 percent.

Two contributing factors to the constant epileptic supply can be narrowed down to:

- (a) Inefficiency of government in running power infrastructure
- (b) Underpricing.

Sector reforms embarked upon by the Government, initiated in 2005, has seen some slight improvements. In 2010 the Government issued: *The Road Map for Power Sector Reform*, aimed at galvanizing the process of sector reforms and attracting private sector participation.

Opportunities

With ongoing overhaul of the power sector involving both vertical and horizontal unbundling and selling of state generating and distributing assets, tremendous opportunities await investors. Local and foreign private power holding companies have and continue to show interest in this sector.

Secondary investment is one option for Pension Fund Managers to participate in this market. Another involves investing in the primary market through financing start-ups (higher risks) or investing through SPVs (Special Purpose Vehicles)

Overall and in conclusion, Nigeria infrastructure, despite positive strides towards establishing a stable foundation for economic growth, is in dire need of further investments in its infrastructure base. While it's clear Government is stretched thin and unable to fund development at the appropriate level desired (6% of GDP), the clear alternative points to the private sector. That would again mean reforms to current investment climate and relaxation on certain rules to encourage private sector participation via capital investment (i.e. pension funds).

Outlook for Pension Fund Managers

The liberalization of many emerging market economies and the attendant realization of the many benefits of private participation in infrastructure have resulted in a considerable need for private capital. This liberalization occurring in the context of relatively underdeveloped financial markets has meant reliance on foreign direct investments to finance growing infrastructure needs. However, the arrays of risk developing countries are saddled with have left many institutional investors shying away. Their risk

appetite could well be described as a mirrored reflection of the challenges and risks of most developing countries. Flow of capital often ranges from being too small to non-existing. This situation underscores the importance of developing domestic sources of long-term capital. The major and critical source of long term capital is local pension funds. It is important to acknowledge at this point the strategic place pension funds offer in unlocking the infrastructure gridlock of countries. It is equally important to recognize investments in infrastructure tend to differ between developed and developing countries largely due to disparity between each other's financial market.

In attempt to deliver information commensurate with the maturity level of Nigeria's financial and infrastructure market, areas affecting performance potentials of pension funds managers were assessed towards attaining a positive sum game for investors.

Historical assessment of pension funds globally show a risk appetite for instruments considered: less volatile; having investments returns well above interest rate escalations and / or minimal foreign exchange risk exposure.

Policy papers have highlighted two fundamental areas affecting investments of pension funds in financial instruments targeted at infrastructure:

1. **Regulations** – Regulations guidelines that cover range of allowable investments, liquidity, valuation, risk characteristics and other regulations such as expected minimum returns.
2. **Infrastructure Financial Instruments** – Where existing (mature capital markets), restructure of investment financial instruments and making them more appealing to investors by: enhancing volatility of investment returns; yielding higher returns than traditional pension fund portfolios; and for less mature (capital) markets: introduction of infrastructure instruments is a good place to start.

The following observations and recommendations were based off Nigeria's situation in light of the above two areas.

As an introduction, a review of Nigeria's Pension Fund regulations inhibiting private sector participation is discussed. This is aimed at identifying bottlenecks that legally inhibit pension fund managers from creative investments in infrastructure. In addition, a review is carried out on current infrastructure investments instruments; their model and factors that inhibit investments.

Investment Regulations

In order to protect the interest of affiliates, the Nigerian government regulates composition of pension fund investment portfolios. Portfolios are expected to provide or supplement the pensions that were previously provided by the state. They tend to place strict limits on allowable investments and the performance exposure of portfolios. These regulations, as one would expect, tend to favor stability and uniformity of portfolio performance. This however tends to preclude investments in worthwhile

economically and socially desirable investments (i.e. infrastructure). Relaxation of such inhibiting regulations is required if investments in infrastructure are to be part of pension fund portfolios.

According to Nigeria Pension Reform Act 2004 No 2, new guidelines issued limit pension fund administrators to investments in instruments such as:

1. Bonds, bills and other securities issued and guaranteed by the Federal Government of Nigeria and the Central Bank of Nigeria;
2. Bonds, debentures, redeemable preference shares and other debt instruments issued by corporate entities and listed on a Stock Exchange registered under Investments and Securities Act 1999;
3. Ordinary shares of public limited companies listed on the Stock Exchange registered under Investments and Securities Act 1999 with good track records having declared and paid dividends in the preceding five years;
4. Bank deposits and bank securities
5. Investment certificates of closed-end investment fund or hybrid investment;
6. Fund listed on a Stock Exchange registered under Investments and Securities Act 1999 with good track records of earning;
7. Units sold by open-end investment funds or specialist open-end investment
8. Funds listed on the stock exchange recognized by the Commission;
9. Bonds and other debt securities issued by listed companies
10. Real Estate investments and
11. Specialist investment funds and such other financial instruments as the Commission may from time to time approve.

For investment considered outside those mentioned above, the act stipulates that pension fund administrators may invest pension fund assets in:

1. Units of any investment funds provided that such investment fund may only be invested in the categories of investment set out in subsection above and Real Estate.
2. Subject to the subsisting Central Bank of Nigeria foreign exchange rules, the Commission may recommend to the President for approval the investment of pension fund assets outside the territory of the Federal Republic of Nigeria

With the knowledge that pension funds could serve as avenue through which access to long term financing could be obtained to help address the country's infrastructure deficit problems, the FGN in 2010 embarked upon reforms to the existing pension act by revising regulations for pension fund investments. New guidelines were finally introduced in 2014 with the view to unlocking finance aimed at funding areas like infrastructure. While efforts to correct such bottlenecks are commendable, it is important to highlight other hindering regulations remain in effect.

Regulations that hinder Investment

Ratings:

In order to account for risks in allowable assets and in compliance with the rules set by regulators, pension fund administrators are limited and only able to invest in non-government papers which have been rated by independent agencies. The *Pension Reform Act 2014* explicitly requires rating scores of “A”. This poses a limit in investment areas much so when such ratings are disproportionate to the Country’s sovereign and long term credit rating hovering around B+¹. It’s a challenge or best described an oxymoron to see how such regulations exist within the context of a sovereign (rating) ceiling² of a country.

If followed to the letter, this tends to preclude investments of pension funds in any instrument let alone Infrastructure. Many infrastructure instruments, simply due to their inherent nature, will fail to meet such minimal investment hurdles due to high volatility swings or preclude non-listed companies (i.e. private equity firms) who are deemed unworthy and therefore fail to qualify.

Liquidity

To minimize problems with the valuation of security assets, most regulations prohibit or at best, limit holding of assets that are not traded or fail to have a high degree of liquidity in major organized exchanges.

Valuation Rules

Most regulations require market-to-market valuation which by itself tends to favor investments whose prices are frequently quoted. These tend to stifle investments in infrastructure because instruments backing those assets often tend to be traded infrequently.

Regulations Discouraging Investments

Performance Regulations

In order to protect the value of affiliate’s pension against over aggressive behaviors of administrators and to minimize the need for supplementary public pension, most countries – including Nigeria – regulate the performance of portfolios. In many cases they are required to earn minimum returns measured in either nominal, real terms or relative to the performance of other sectors.

In order to avoid under-performance, pension fund managers tend to avoid volatility (inherent in infrastructure), hence they shy away from sectors demonstrating such characteristics which may be safe but preclude opportunity for sizeable returns. While anecdotal information suggests PFMs would perhaps prefer more relaxed regulations, the truth remains many would rather go after safe investments to avoid risk of reporting ‘under-performance’.

¹ S&P Credit Rating of Nigeria (2010)

² Sovereign ceiling policy: Limits the rating of private firms residing in that country to the sovereign ceiling of that country. In other words, no private firm can receive a rating higher than that of the sovereign.

Allowable Investments

Going by current regulations, Pension Fund assets may be invested in bonds and other securities issued and fully guaranteed by the Federal Government of Nigeria or CBN (80% maximum). Others include: Investments in bonds and other securities issued by eligible State and Local Governments subject to:

- Maximum portfolio limit of 20% of pension assets under management where such bonds are backed by irrevocable Standing Payment Orders (ISPO) or guarantees
- Maximum portfolio of 3% where such bonds are not backed by ISPOs or guarantees.

Such regulations tend to discourage investment managers from infrastructure assets. Most countries, including Nigeria, make the rules of liquidity, valuation and ratings applicable to all investments. This in effect limits direct investment in projects and only in some cases allows indirect investments through the purchase of stocks and well established infrastructure corporations or mutual funds. Furthermore, investments in non-recourse or limited recourse greenfield projects are even more restricted. As these projects do not have any track records, they are considered risky, illiquid and lack any form of investment grade rating.

While the importance of having regulations is recognized, it's equally important to appreciate the impact of over-regulation to realize the full potentials with unlocking investments in infrastructure. These views are shared by many industry analysts. According to BGI, pension fund managers should be allowed flexibility in asset allocation so as to create portfolios mix that gain good returns as a result of intelligent risk taking (BGL, 2010). Nigeria financial system however lacks the maturity, at this point in time, of developed instruments targeted at the 'alternative asset class'. However given current situation, there are certainly opportunities beckoning.

In summary, current regulations need optimizing. Simply relaxing rules is a step in the right direction but certainly not the panacea to addressing current existential problems. Investment instruments and options need to be created and attractive enough to court pension fund managers towards infrastructure.

Investment Requirements of Private Pension Funds

With a more relaxed regulation comes the need to identify instruments that offer risk / return mix that are commensurate with acceptable rates of return. All indications suggest most institutional investors are likely to be interested in instruments that:

- Provide high returns
- Offer diversification to reduce risk
- Provide inflation protection
- Liquid
- Provide short to midterm cash flows

- Do not enhance volatility
- Minimize external risk.

Unfortunately, most financial markets in developing countries do not have instruments that offer such opportunities even within an environment with relaxed enough regulations. In light of this, the need to create instruments capable of satisfying above criteria is evident to attract flow of capital to infrastructure development. If properly structured, infrastructure financial instruments can meet most of above needs therefore becoming attractive enough to court investors.

It is however important to note there some inherent risks associated with such investment. Political risk of government appears a major factor on minds of investors indifferent of country. While such risks are real with high consequences, the probability of occurrence is considered low for investments that are funded with Pension funds. Our view on the subject is it's unlikely to see governments renege on concessions funded by pension funds given the number of vested interest (Policy and law makers).

Pension Fund Investment in Infrastructure

Experts have identified the pressing need to leverage current unused cash of the country's pension system. With that said, it is recognized there are limits in investable assets (e.g. infrastructure bond etc). About 37% of total pension assets are believed to be held in money market instruments as at September 2009 (BGL, 2010).

Based on expected rates of growth in pension fund assets³ and assuming 3%⁴ of those are invested in infrastructure, it sets the country on the path to addressing its infrastructure problems. Though 3% amounts to only 1% of total estimated capital injection required for the country's infrastructure needs⁵, it's certainly a good place to start.

Table 3: Indicators of Capital Depth

	Pension Assets	Stock of Portfolio
Nigeria (2008)	\$8.7billion (=N=1.07t)	\$0.26b
Nigeria (2015) ⁶	\$47.32billion (=N=7.1t)	\$1.42b

To summarize, investment of local pension funds in infrastructure offer many mutual benefits to long term development goals of a country as well offer potential stable returns on invested capital of fund managers. Another upside is how risk factors are inherently well managed. Some of which include:

- **Political Risk:** Insurance against Political risk is low and seldom required. Reduction in such premiums is due to participation of all stakeholders which in turn induces closer adherence to fairness in application of infrastructure regulatory principles.

³ Growth rates extrapolated by BGI Research of Nigeria Pension funds advertised by PENCOR

⁴ Recommended percentage investment of private pension in infrastructure based off the Chile model

⁵ Nigeria infrastructure needs are estimated at \$100 billion

- **Foreign Exchange Risk:** Not applicable as most infrastructure projects generate local currency revenues
- **Financing Risk:** Financing and refinancing of bankable projects is reduced due to pension funds being able to provide longer tenors than those offered in local financial market.
- **Cost of Capital.** Cost of capital is relatively less expensive compared with external sourced finance.

Such benefits should appeal to governments towards fostering enabling environments aimed at attracting investments and participation of PFMs in infrastructure as an investment class.

Private Participation in Infrastructure

Over the last decade there has been significant transformation in the provision of infrastructure services concurrent with pension reforms. This has followed with increase private sector participation in the provision of infrastructure services particularly in the case of countries that warmed up to pension reforms. Due to strong desire of countries to bridge gaps between their infrastructure base and current / future demand, there has been a move towards leveraging private sector finance through asset privatization or more publicly appealing public-private partnerships.

It's been estimated for every 1% growth in GDP, investment in traditional infrastructure sectors (energy, transportation etc) would need an equivalent and commensurate increase (1% of GDP) in infrastructure spend to meet growing demand (World Development Report, 1995). A reasonable goal for government would be to support a commensurate investment strategy that maintains long-term annual growth rates of ~5%. To achieve such goals, the huge task would require pulling resources from both sides: government (fostering right investment climate) and private sector (instrument creation).

Infrastructure Investment – What they offer Pension Funds

In conclusion, based on above discussion, it would be accurate to suggest there is a need for infrastructure developers to seek ways to tap into pension funds. To start however, there would be a need for developments of financial instruments directed at infrastructure investments.

Insight on performance of similar instruments across the globe may perhaps stimulate discussions and their possible creation in Nigeria. A number of countries have recorded returns in infrastructure instruments as high as 15% per annum. More conservative numbers suggest diversified infrastructure funds have the potential to return between 9 – 12% (net of fees) per annum (Mercer, 2005). These exceed suggested 7-8% annual returns of (Nigeria's) pension funds to be considered viable over the long-term (BGL, 2010).

To summarize, creation of financial instruments with a bias for infrastructure investments may very well be one of the instruments required to unlocking the potentials that lie therein.

Conclusion

The road to solving Nigeria and many African country infrastructure problems lie in a healthy pension fund. With the right regulatory framework it sets the stage for appropriate level investments. Economic transformation of countries is bound to happen as a result channeling pension funds to the right sector. Infrastructure being a crucial element to economic prosperity and transformation could certainly serve as the pivoting area and as such should be seen as a potential target for such investments.

Establishing infrastructure asset classes - considered potential vehicles to channel Pension fund investments – is urgently required in Nigeria. Lobbying the right political will amongst government officials would need to be embarked upon and followed through. Infrastructure development must be on the lips of every Nigerian. The end results in a win-win solution at addressing investment returns and solving a very important component to sustained economic growth and development of our nation.

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